CAMBRIDGE

C|A

ASSOCIATES LLC

Endowment Management

CAMBRIDGE

ASSOCIATES LLC

Endowment Management

To ensure effective management of its endowment assets, an institution must get four things right:

02 *Governance and People*

Efficient organizations have effective decision-making processes and generally earn satisfactory returns. Inefficient organizations have deficient decision-making processes and generally earn inferior returns. However, the best governance structure is an empty shell unless populated by knowledgeable people capable of making sound decisions.

12 *Policies and Objectives*

Every successful endowment fund is managed in accordance with explicit, written policies that describe the endowment's objectives and the means taken to achieve them.

16 *Implementation*

Good policies may be undermined by bad implementation.

21 *Fund Evaluation*

The only way for an institution to gauge whether it is realizing the objectives articulated in its policy statement is to evaluate the fund's results in terms of both risk and return.

Entire books have been penned on subsets of these four; this report is designed to be a short review rather than a comprehensive account of the investment planning process.

Copyright ©2008 by Cambridge Associates LLC. All rights reserved.

GOOD GOVERNANCE AND THE RIGHT PEOPLE

Getting Started: The Investment Committee

Structure and Composition

The investment committee should be separate from the finance committee (although it may be designated as a subcommittee of the finance committee if necessary). However, these two committees should have at least one member in common to ensure that the left hand knows what the right hand is thinking and doing.

At least some committee members should have professional, institutional investment experience—not just experience managing their own money—and if the organization lacks sufficient trustees with such qualifications, the committee should include non-trustee members selected to fulfill this role. But it is not necessary to populate the committee solely with investment professionals; indeed, doing so may lead to deleterious group-think (see "Diversification"). Regardless of their backgrounds, however, the best investment committee members are open-minded, quick to acknowledge what they do not know and eager to remedy the deficiency, good at identifying the right questions to ask, and accustomed to making decisions. In contrast, the very *worst* candidates are often overconfident, successful, can-do individuals who are impatient with committee consensus-building and implicitly believe that their lack of knowledge (of institutional investing in general or of specific asset classes) presents no impediment to their dictating how the portfolio should be managed. The investment world *is* different from most other worlds: in other professions, doing more of what has worked is usually the route to success—in other words, past performance is generally predictive of future success because the information necessary to make successful decisions is readily available to those trained in that profession. In certain key respects, however, this is simply not the case in the investment world—certainly not over a time horizon of a few years—and committee members who cannot grasp this fundamental fact often end up chasing last year's winners, inflicting considerable damage on the portfolio as a result.

Keep It Down

Most endowed institutions not only succeed admirably in attracting highly qualified and willing volunteers to serve on the investment committee, but may in fact wrestle with the problem of too many candidates. And this *is* a problem, since the inherent difficulties of decision-by-committee compound exponentially with increased membership. We have also noted that trustees rotating off the investment committee sometimes request emeritus status, which enables them to continue attending meetings in a non-voting capacity.

Difficult though it may be, board chairs should adopt uniform standards to prevent investment committees (or other board committees, for that matter) from exceeding a workable size. We would not quite agree with the chair who declared that his investment committee should always have an odd number of members—and that three was too many—but we would say that six is about right and more than eight generally problematic. In addition, non-voting "spectators" should not be permitted to attend meetings since their presence cannot be anything but a distraction from the business at hand.

Diversification

As far as possible, the composition of an investment committee should reflect the composition of the institution it represents and of the wider world with which that institution interacts. This is not just good PR, but also good investment management, even if stakeholder representatives (e.g., doctors on hospital endowment fund investment committees) often lack investment expertise. When an investment committee consists of, say, five people with pretty much the same background and pretty much the same kind of experience, they are likely to think pretty much along the same lines. Either or both of two unhealthy results may ensue. The first is that the conventional wisdom prevalent among this group of like-minded individuals is never challenged, resulting in a kind of intellectual stasis, or group-think ("group-stink" according to Barton Biggs, formerly of Morgan Stanley), ill-suited to the dynamic nature of contemporary investment management. The second (and less common) danger is that rather wacky, marginal ideas become normalized and accepted. This is a

phenomenon familiar to psychologists of group dynamics: because each member of the group identifies with the others, everyone finds it difficult to challenge and reject another member's ideas. Diversification might encompass, for example, individuals with backgrounds in law, management, or (in these times of cascading new accounting guidance affecting investments) accounting and auditing.

Ideally, then, a committee should consist of people who bring different backgrounds and perspectives to the table and are comfortable debating each other in a friendly and constructive way without seeking to *impose* their views on everyone else. Frankly, far too many endowment fund investment committees consist exclusively of middle-aged investment bankers or money managers. Of course, the reason for this is their experience and expertise, but specialized investment knowledge should not be considered a prerequisite for all committee members.

Tenure

There are prominent examples of endowment funds benefiting from the decades-long service of dedicated, highly qualified, deeply experienced investment committee members, but there are just as many examples of sclerosis endured by institutions that have failed to inject new blood into their committees. As a general rule, the tenure of investment committee members should be long enough to ensure consistency—and for members to be accountable for the results of their decisions—but explicitly limited and staggered to ensure continuity. Since neither the institution nor the new committee member can ever be quite sure whether their relationship will prove satisfactory, a relatively short-term appointment—say three or four years—seems sensible. This can then be renewable once or even twice, giving the Board the opportunity to retain the services of excellent committee members. However, service in excess of a dozen years, at most, should be regarded as rare and exceptional, requiring a waiver of standard policy.

Meetings

"Any committee that is the slightest use is composed of people who are too busy to ... sit ... for a second longer than they have to." Katherine Whitehorn

Not only should investment committees be of manageable size, they should also consist of members committed to attending all meetings, if not always in person, at least by conference call—neither eminence nor expertise are sufficient to compensate for a failure to participate in meetings. And if—as must occasionally happen—a committee member can neither attend nor call in, there should be some standard mechanism for providing that member with a complete and thorough account of the deliberations. Under these circumstances, it is inexcusable for the absent member to show up at the next committee meeting requesting recapitulation of earlier discussions.

Many, many investment committees are severely dysfunctional in ways that are manifested in badly run meetings that result in poor decision making with concrete consequences in poor investment performance. One memorable investment committee chair of a prestigious institution always made it clear at the start of each meeting that his primary objective was to finish at least half an hour before the scheduled time. This goal was never reflected in the agenda, however, which was typically chock-a-block with actionable items requiring extensive debate. The result? Major issues on which subsidiary decisions were dependent were frequently carried over from meeting to meeting to meeting, or were decided in haste only to be repented later. Needless to say, the institution's returns were predictably disappointing despite (perhaps more accurately *because of*) the eminence of the committee members.

Because of their eminence? Yes—not only did this committee consist of too many members (about 12), but no more than seven or eight ever showed up at a given meeting because of the many competing demands on their time. Absentees from the February meeting would subsequently show up for the May meeting largely ignorant of the preceding deliberations, which meant the same ground often had to be plowed all over again. This is both unfair to more responsible committee members and a ferocious waste of precious time.

Most investment committees meet quarterly, in conjunction with board meetings, but should be prepared to meet more often during times of intensified activity. Regularly scheduled meetings should typically last about three hours, or

half a day—probably the most common mistake among otherwise diligent and effective committees is the attempt to squeeze three hours' worth of business into an hour and a half. Less common, but equally damaging, are loose, rambling meetings that drone on far too long, alienating those members who have better ways to spend their time.

Minutes

"Committees are groups of people who keep minutes but waste hours." Anonymous

Both meetings *and* less formal conference calls should be recorded in minutes.[1] These should then be circulated to committee members as soon as possible both to solicit comments on their contents and to confirm the decisions made. And it is perhaps worth saying a word about the *structure* of minutes, since these are rarely a verbatim record of what was said, but rather a synopsis of the committee's deliberations. As in any kind of memo directed to busy people, the most important items should come first—and in the case of investment committee meetings, the *decisions* are what is most important, and should be highlighted right at the start. In addition, a running chronology of committee decisions makes an excellent appendix to meeting minutes.

How detailed should the minutes be? And how candid? Contrary to the conventions of delicacy, the minutes should not shy away from recording disagreements as well as consensus. In many situations, a thorough argument is a demonstration of a thorough deliberation, one of the hallmarks of the fiduciary "duty of care."[2] And particularly for the benefit of auditors, all discussion materials—whether prepared by staff or by an investment consultant—should be filed with each set of minutes.

Process, Process, Process

"Muddle is the extra unknown personality in any committee." Anthony Sampson

The chair is the linchpin of the investment committee and has a special obligation not only to attend meetings, but also to prepare for them in advance. Whether developed in conjunction with staff or a consultant (or both), the agenda is the chair's particular responsibility: good chairs develop good agendas, bad chairs just show up and wing it. In a good agenda, actionable items are organized in order of priority and enough time is allotted to give suitable consideration to each. And agendas should be dominated by deliberations on asset allocation—too many committees spend far too much time listening to presentations from investment managers whose results, whether good or bad, will actually have relatively little impact on the total portfolio.

Good chairs also go into meetings with a clear idea of what outcomes they hope to achieve. This should not be confused with dictating decisions—a good chair dictates only the process of deliberation, not the decision itself, which should be that of the committee as a whole (or at least a majority). Unlike most other trustee committee meetings, which usually end with unanimous approval of the course of action recommended by the institution, investment committee meetings should ring with divergent opinions, forcefully expressed. The chair's job is to steer a sometimes difficult course between keeping the discussion on track while ensuring that all committee members have their say. Nothing is more common in committee deliberations than the tendency to meander down interesting but unproductive byways. The chair must exercise authority to prevent such digressions and must drive the discussions toward decisions. Similarly, the chair should also keep the committee focused on the agenda at hand. For example, a discussion about the role of bonds in the portfolio should not be hijacked by a committee member who wants to recommend investing in XYZ hedge fund that a friend told him about yesterday.[3] The chair should also assume responsibility for following up with absent committee members, both to brief them on the meeting and to determine whether they have any objections to the decisions made.

---

[1] Institutions subject to public scrutiny might consider consulting their legal counsel on the question of how much detail to include in such minutes.

[2] In the United States fiduciary responsibility is generally defined by state law in the first instance. Institutions should consult with legal counsel with respect to specific compliance questions.

[3] Indeed, there should be a standing policy of referring all manager suggestions from committee members, or others, to the staff or—in the absence of qualified staff—to an investment consultant for vetting, since this ensures these recommendations will be subject to uniform, objective evaluation criteria. It can also minimize unwarranted "conflict of interest" charges that can compromise the fiduciary "duty of loyalty."

However, not all business requires a physical meeting and not all business requires the participation of the full committee. If regular committee meetings are held quarterly, for example, some business may be dispatched between such meetings by means of a conference call if there is simply too much on the plate to get through everything in just four sittings. Similarly, the chair may ask one or more committee members with particular expertise to oversee part of the portfolio (e.g., fixed income, hedge funds), serving, in effect, as the committee's in-house expert on that topic.

A more elaborate form of this approach is the appointment of subcommittees, perhaps with qualified outsiders (e.g., alumni) asked to help, especially to oversee investments in so-called "alternative" assets, the management of which demands considerable resources and expertise. This can prove successful if carefully thought through, but *beware*! It may also have the unintended consequence of putting too many cooks in the kitchen, thereby compounding the inherent deficiencies of decision making by committee.

Should the committee vote? Opinions vary. Generally speaking, if—after discussion of each action item on the agenda—a vote can be called for as a matter of routine, then the record of (dis)agreement will be complete. Governance authorities favor this higher level of accountability.[4]

Getting Help: Dealing with an Investment Consultant

There are many good reasons to hire an investment consultant(!). Primary among these are that consultants can supply the information decision makers need to make informed decisions; can be a source of knowledgeable, independent, and disinterested advice; can serve as a window into what other institutions are doing; and can directly assist the investment committee in its endowment oversight responsibility. To be useful, however, the consultant must be encouraged to speak his or her mind, even in opposition to prevailing sentiment among committee members. Yes-men are useless and poodles come cheaper.

CHARACTERISTICS OF SUCCESSFUL INVESTMENT COMMITTEES

Fiduciary Responsibility and Governance

- Clear understanding of fiduciary responsibility to manage the investment process (rather than manage the portfolio itself) in the best interests of the institution over the long term
- Clear delineation of the role and responsibilities of committee members and staff:
  - Policy setting and portfolio evaluation by the committee
  - Where qualified staff are employed, implementation (including manager selection) delegated to staff and/or consultant
- Provision of sufficient resources, internal and external, to support the investment process
- Provision of adequate, timely, and accurate management information
- Adequate documentation of investment committee oversight
- Adequate monitoring of broader "environmental" issues surrounding investments, such as changing reporting requirements

Investment Committee Composition

- Strong, supportive, dedicated, and effective chair
- Limited number of members
- Knowledgeable and intelligent, but not necessarily investment experts
- Experience with *institutional* (as opposed to personal) investment issues
- Fixed rather than indeterminate tenure, but long enough to ensure continuity (e.g., two or at most three successive three- or four-year terms)
- Rolling turnover
- Comprehensive orientation materials for new members, covering basic policy issues and objectives, governance structure, fund history, recent decisions, and minutes of past meetings

Meetings

- Simple
- Regular but not too often (e.g., quarterly)
- Interim meetings or conference calls among committee members or subcommittees as required
- Clear agenda set by staff and chair
- Clear objectives predetermined by staff and chair
- Plenty of time allocated to ensure decisions are not made in haste (e.g., at least three hours)

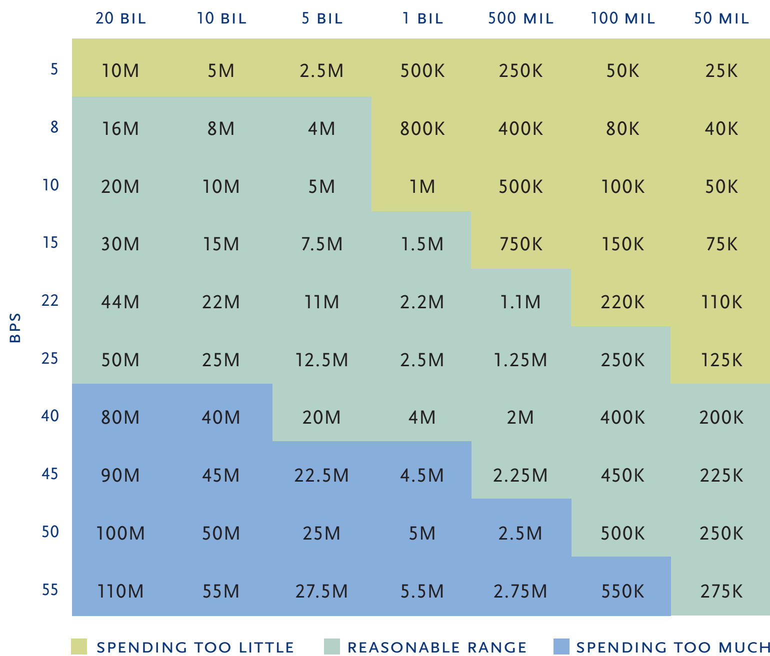
So, how can you get the most value for your money from your consultant?

First, learn what resources are available. Either as a new or as a prospective client, the committee chair and/or other committee members should

[4] In most, if not all, U.S. jurisdictions, the "business judgment rule" covers decisions with poor outcomes ("mistakes") so long as there is demonstration of adequate fiduciary duty of care. Thus, going on record with votes should help, not hinder. Again, consult counsel for prevailing law on this matter.

How Much Should We Spend on Oversight?

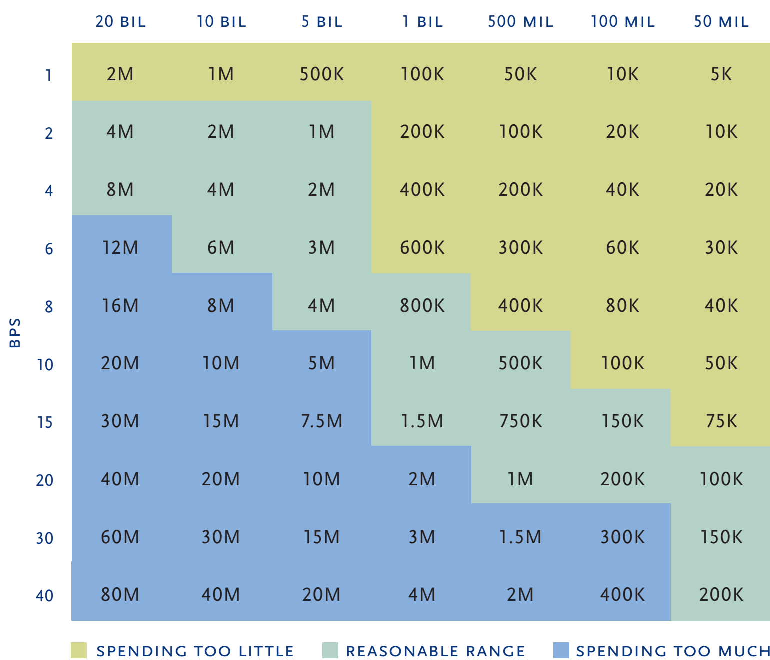
HIGH EQUITY ALLOCATION / HIGH COMPLEXITY BY ASSET SIZE



BPS	20 BIL	10 BIL	5 BIL	1 BIL	500 MIL	100 MIL	50 MIL
5	10M	5M	2.5M	500K	250K	50K	25K
8	16M	8M	4M	800K	400K	80K	40K
10	20M	10M	5M	1M	500K	100K	50K
15	30M	15M	7.5M	1.5M	750K	150K	75K
22	44M	22M	11M	2.2M	1.1M	220K	110K
25	50M	25M	12.5M	2.5M	1.25M	250K	125K
40	80M	40M	20M	4M	2M	400K	200K
45	90M	45M	22.5M	4.5M	2.25M	450K	225K
50	100M	50M	25M	5M	2.5M	500K	250K
55	110M	55M	27.5M	5.5M	2.75M	550K	275K

SPENDING TOO LITTLE · REASONABLE RANGE · SPENDING TOO MUCH

MODERATE EQUITY ALLOCATION / LOW COMPLEXITY BY ASSET SIZE



BPS	20 BIL	10 BIL	5 BIL	1 BIL	500 MIL	100 MIL	50 MIL
1	2M	1M	500K	100K	50K	10K	5K
2	4M	2M	1M	200K	100K	20K	10K
4	8M	4M	2M	400K	200K	40K	20K
6	12M	6M	3M	600K	300K	60K	30K
8	16M	8M	4M	800K	400K	80K	40K
10	20M	10M	5M	1M	500K	100K	50K
15	30M	15M	7.5M	1.5M	750K	150K	75K
20	40M	20M	10M	2M	1M	200K	100K
30	60M	30M	15M	3M	1.5M	300K	150K
40	80M	40M	20M	4M	2M	400K	200K

SPENDING TOO LITTLE · REASONABLE RANGE · SPENDING TOO MUCH

Notes: Data are based on Cambridge Associates' empirical experience as well as our judgment of what is reasonable to spend on endowment fund oversight. Investment oversight includes investment supervision, custody, legal, and accounting/audit expenses. Investment supervision includes services to the trustee committee, strategy development, due diligence on investment managers, oversight of asset allocation and investment management, consulting, and performance measurement and evaluation. Fund-of-funds fees and carried interest are also included. Money management fees are excluded.

visit the firm's offices to conduct extensive due diligence and learn what services the consultant can and cannot provide.

Second, assess the role you want the consultant to play in the management of the endowment. This can range all the way from retaining the consultant only for access to data and research to using the consultant as a substitute for full-time, professional staff (i.e., outsourcing the investment office).

What makes no sense is to pay for a consultant to attend meetings, but not ask for his or her opinions. What could we be doing better? What lessons can we draw from the past few years? What can we learn from what others do? What are the most common mistakes you see made at institutions like ours? What are our options if we want to invest in such-and-such an asset class? How can we assess whether we are taking too much or too little risk in the portfolio? How can we gauge whether our portfolio is likely to generate sufficient return to cover our spending needs? How does our asset allocation compare to that of similar institutions? Do you think we should be more or less like them? What changes in the investment "environment" might be sneaking up on us? (For example, changing audit standards, investment code changes, new definitions of "endowment," greater investment scrutiny by debt rating agencies, and so forth.)

These are exactly the sort of questions being asked every day by the professional investment staffs of the leading endowments. At smaller institutions lacking such staff, too many investment committees are either too busy or too complacent to focus on such issues. At the very least, it would seem worth asking your investment consultant for a frank answer to the questions: What could we be doing better? What mistakes do you see us making?

Committee members should also be familiar with whatever research the consulting firm produces that is relevant to their deliberations—for example, an overview of comparative asset allocation and returns among endowment funds, discussion and analysis of manager hiring and firing decisions, or a review of fixed income investing for nonprofit institutions.

Last but not least, the investment discussion materials prepared by your consultant constitute

a critical part of the record of due diligence supporting the investment committee's decisions. For documentation and general fiduciary purposes, they should be filed with the minutes of every committee meeting.

Spending Money: Endowment Management Costs

The only way to tie the costs of managing the endowment to its results is to make sure the former are borne by the endowment itself, not by the operating budget—not even from the endowment fund's distributions to the operating budget. For example, if two institutions, A and B, each with an endowment fund of $400 million, spend $400,000 (i.e., 10 basis points) and $100,000 (i.e., 2.5 bps), respectively, on endowment oversight, which is getting better value for its money? We don't know because we don't know their respective results. If Institution A's performance, net of all costs, is consistently 20 bps better than that of Institution B, and we can reasonably infer that some of this is attributable to more diligent oversight, then Institution A's additional 7.5 bps is a bargain.

So, the key questions any endowment fund, large or small, should ask about its costs are:

- How much are we spending to oversee and manage this fund?
- How do our costs compare to those of other funds, being mindful of the effect of strategy and scale on these costs?
- Can we identify all the different expenses we incur? For example, investment management fees (and carried interest, where applicable), custody costs, performance measurement and evaluation, oversight, consulting, research, accounting, and legal expenses.
- Are we getting value for our money in each of these?
- Should we be spending less in some areas and more in others?

At a large organization, with assets of $20 billion, 4 bps spent on oversight is over $8 million—$8 *million*! For a $400 million endowment to buy the same level of oversight, it would have to spend 2% of its assets, which is an amount it could hardly expect to recover from the superior performance that might ensue. But if 2% of assets, or $8 million, is too much, how much is enough and not enough? What about 20 bps, or $800,000? Or 40 bps, amounting to $1.6 million? Where does one get the best bang for the oversight buck? And the same question should be asked about investment manager fees; indeed, these should be scrutinized even more closely, since the total sum is likely to be very much larger. For example, should our $400 million endowment employ active managers for its large-cap equity portfolio, where the fees for $50 million accounts might run to 50 bps ($250,000), or would it be better to index that portion of the assets, for 5 bps, and apply the savings somewhere else where spending an additional $225,000 more might yield more consistently superior results?

Few endowments allocate sufficient time to evaluating what they spend to manage their assets and whether this money is well or badly deployed. As a result, the money is often deployed badly, thoughtlessly, in ways that do not yield value—but no one realizes this because no one is keeping score. This subject is worth a full review every few years, both in its own right, but also because it forces the committee to assess whether it is expending its own time and attention—as well as the institution's money—to the best possible effect. Whenever this question is asked for the first time, the answer is invariably *No*.

Spending More Money: Investment Office Staff and Structure

The principal advantage a $3 billion endowment enjoys over a $100 million endowment is the resources to attract and retain a full complement of highly qualified, full-time, professional investment staff. Does this mean that all larger endowments always outperform smaller endowments? No, but this intrinsic competitive advantage has enabled them to perform better, on average, over time. How much better?

The significance of this difference in compound returns over 20 years is perhaps best illustrated in dollar terms: if two universities both had endowment funds worth $250 million in 1988, and both spent 5% of their average endowment market value each year, but University A earned the 11.09% return of the average college and university in our universe, while University B earned the 14.32% of the leading endowments, then the

Summary Statistics as of June 30, 2007

	5-YR AACR (%)	10-YR AACR (%)	15-YR AACR (%)	20-YR AACR (%)
ENDOWMENTS N=375	12.48	9.87	11.57	11.06
COLLEGES & UNIVERSITIES N=152	13.14	10.18	11.68	11.09
OVER $1 BILLION N=90	13.87	11.30	12.62	11.74
LEADING ENDOWMENTS N=6	17.83	16.09	16.39	14.32
91-DAY T-BILLS	2.76	3.79	4.07	4.83

Source: Cambridge Associates LLC.
Notes: N reflects the numbers of institutions in the five-year AACR universe. Subsequent universes are smaller. Leading endowments are a constant universe of six in all time periods.

value of A's endowment in mid-2007 would be $772 million compared to $1.37 billion for B. Given this remarkable disparity, why aren't more endowment funds managed by professional investment staff?

There are two reasons, both of which are misguided. The first is the phenomenal bull market of 1982–2000, which enabled virtually all endowments to enjoy significant real growth even as they distributed increasing amounts of largesse to their organizations' operating budgets. The old saw about brains and a bull market comes to mind—frankly, it didn't take much for an institution to feel that its investment committee was doing a bang-up job since both equities and bonds generated historically high returns. Consequently, few institutions saw any reason to question the viability of their investment committee–driven approach to endowment management because it seemed to have worked so well. This confidence was misplaced, however, because those halcyon days are gone and are unlikely to return anytime soon. Recognizing this, many endowments have responded by fol-

Should We Hire Professional Investment Staff?: A U.S. Case Study

Illustrative of the dilemma faced by more and more endowed institutions.

In 1990, University X had an endowment fund of approximately $100 million invested entirely in U.S. equities, bonds, and cash, all managed by one balanced manager. Today, endowment assets totaling almost $500 million are invested in U.S. equities, non-U.S. equities, U.S. bonds, non-U.S. bonds, long/short hedge funds, arbitrage hedge funds, private real estate, REITs, commodities, oil and gas, timber, venture capital, and buyouts. The number of managers the committee must oversee has grown from one to 30. In addition to extensive support from its outside consultant, the university now has a full-time staff person to produce monthly reports and to handle the logistics of and provide materials for committee meetings, subcommittee meetings, and monthly conference calls. An extraordinarily dedicated committee chair devotes much of his time in retirement to oversight of the endowment and relies on diversified expertise among committee members to monitor and evaluate the various asset classes that make up the portfolio. Committee members rarely miss meetings and can be relied on to call in if they are unable to attend in person. Their commitment to the university is admirable—and reflected in the endowment's excellent returns. But is this a viable model for managing such a diversified fund? Can the university count on finding future investment committee chairs willing and able to dedicate so much time to managing the endowment? Can the alumni body continue to supply committee members with appropriate expertise in every asset class? Is the committee, despite its best efforts, in danger of exercising inadequate oversight, simply because they now have so many balls in the air that should be watched more or less continuously?

In theory, University X should certainly consider creating an investment office, with a chief investment officer supported by one or two additional staff. The committee could then focus solely on policy matters and portfolio oversight, relying heavily on the investment staff for asset allocation recommendations, manager selection, moni-

lowing the lead of the major university endowments in diversifying their asset allocation among far more asset classes than they owned in, say, 1990. In addition to plain vanilla equities, bonds, and (perhaps) real estate, today's portfolios frequently include hedge funds of various sorts, private market investments, inflation-linked government bonds, and even commodities and natural resources. Such diversification demands greater expertise on the part of those responsible for overseeing the assets and typically entails a dramatic increase in the number of managers that must be monitored and evaluated.

What is misguided here is the belief that these more complex portfolios can be successfully developed and maintained with no more resources than were required to oversee the equity/bond/cash portfolios of the 1980s. This is like saying no more resources are needed to perform triple bypass surgery than to stitch up a bad cut. Especially in alternative investments, where winners win big at the expense of big losers, investors with inadequate expertise and resources should not invest at all rather than stumble into asset classes they know little about.

Also misguided is the view, all too prevalent among successful business and professional people sitting on investment committees, that amateurs like themselves, meeting for a few hours four times a year, can manage an endowment fund just as effectively as a full-time professional investment staff who wake up every day wondering what risks the portfolio is incurring, how performance can be improved, how volatility can be dampened, where expenses can be trimmed, reporting improved, and due diligence enhanced. These same investment committee members would never apply the same logic to their own professions—but everyone is an expert when it comes to investing. Like so much else in life, successful investing requires as much perspiration as it does inspiration, but investment committee members rarely spend enough time on endowment management to break a sweat. In short, few institutions have the good fortune to be served by an investment committee whose members have sufficient time, knowledge, experience, and commitment to oversee the fund as effectively as capable professional staff could do.

Should We Hire Professional Investment Staff?

The answer is primarily a function of the incremental return expected from such an investment.

toring, and evaluation, and similar *implementation* issues. There are major impediments to its doing so, however. First, the university is located in an area distant from any major metropolitan or financial center. It *might* find suitably qualified people willing to relocate for lifestyle reasons—but this is certainly a recruiting problem for most institutions. And then there is the issue of compensation. In a smaller university community, in a smaller university town, what might be the effect of hiring a chief investment officer whose total compensation might have to exceed that of the university's president by a significant margin? Larger institutions are somewhat inured to such anomalies—look at the compensation packages of football and basketball coaches, for example—but it may be more difficult to cross this bridge at smaller schools unaccustomed to such disparities. One solution might be to locate an investment office in a major metropolitan area where recruiting might be easier and the compensation question at least removed from campus—effectively outsourcing the management of the endowment to a captive investment management company with only one client. Or the university could outsource endowment management to an outside firm (not necessarily in Bangalore—at least, not yet!), which would serve in the same capacity as internal investment staff, reporting to an investment committee that retained policy and oversight responsibilities. This is not, in fact, a new idea, but one that has garnered publicity and gained traction in recent years as a result of the formation of several new firms offering such services.*

This example illustrates a situation where an institution is pushed toward hiring professional staff in some form or another because its investment portfolio is outgrowing the capacity of even the most zealous committee to provide adequate oversight. For University X, therefore, this is not so much a question of whether it would be *cost effective* to hire internal or external professional investment staff as it is a question of when it becomes imprudent not to do so.

* Those interested in exploring this idea should realize that the various firms offering such services (which include Cambridge Associates) present a broad spectrum of differing approaches, from one-portfolio-fits-all to customized portfolio construction and implementation. Prospective investors should therefore consider the pros and cons of each model, in addition to conducting extensive due diligence on the costs, staffing, expertise, processes, and results of competing firms.

If Institution XYZ were to hire a capable chief investment officer and staff, could it then expect to match the returns of the leading endowments over the next decade or so? This is a splendid example of asking the wrong question—but, unfortunately, it is also a wrong question we hear repeatedly. The right questions are:

1. Can we expect to perform better if we hire full-time professional investment staff than if we do not?
2. If yes, by how much?
3. And if we do not hire full-time professional investment staff, are we in danger of exercising inadequate oversight?

As regards #1 and #2: if a $300 million endowment reasonably expects that the addition of full-time professional investment staff might add 50 bps annually to performance, that's $1.5 million in incremental costs to break even. In practice, investment staff increasingly expect a significant percentage of their compensation to be tied to performance, which aligns their interests with those of their employer and has always struck us as eminently sensible.[5] This assumes, of course, that the institution can actually find suitably qualified investment professionals, and then keep them from being lured away in a few years by higher-paying institutions or funds-of-funds. This challenge has proven increasingly difficult in recent years, even for institutions located in metropolitan areas. As always, therefore, the theoretically optimal solution may have to be revised in light of what is practicable.

Obviously, question #3 turns the tables by changing the focus from, Can we afford to hire professional investment staff? to, Can we afford *not* to hire professional investment staff? Every endowed institution should conduct a full review of all endowment management costs every few years to ensure that appropriate amounts are being spent to good effect in every area of investment planning, asset allocation, implementation, portfolio management, oversight, custody, accounting, reporting, compliance, and evaluation. Such a review actually extends well beyond cost analysis to broader questions of whether the institution is structured and equipped to manage its endowment as effectively as possible—since the cumulative costs of failing to do so are considerable.

Should We Hire an "Outsourced CIO"?

The answer depends on the institution's ability to engage *and keep* an adequate complement of sufficiently experienced investment staff, and on that staff's access to adequate research and due diligence. Some investment committees outsource investment staff duties only for the alternative investment piece(s) of the endowment because internal staffing for alternative investments sometimes leads to the most pronounced pressure for higher compensation.

Behavioral Risks

Most reasonably sophisticated investors understand the risks inherent in, say, equity market investing or active manager selection, but few turn the mirror on themselves to understand the behavioral risks to which they are prone. Prominent among these are tendencies to:

- Overrate the importance of recent information.
- Blindly extrapolate past results into the future.
- Oversimplify complex issues.
- Avoid ambiguity by underestimating uncertainty.
- Overestimate their own knowledge, expertise, and capabilities.
- Make decisions on the basis of available information, even if this information is inadequate, irrelevant, and unreliable.
- Focus only on evidence that supports existing beliefs, ignoring evidence that refutes those beliefs.
- Be motivated by regret over past actions, both taken and not taken.
- Selectively edit their memories of past decisions and results.
- Make (or fail to make) decisions in order to recover sunk costs.

Investors and investment committees recognizing these traits in their own behavior can attempt to counteract the mistakes that are likely to ensue by monitoring how they make decisions, by documenting the rationale for each decision, and by measuring results.

Investment committees are also particularly susceptible to certain decision-making biases engendered by group dynamics:

[5] Institutions implementing such compensation schemes must exercise considerable care in defining "performance."

- A lack of rigor resulting from the diffusion of responsibility and accountability for investment decisions. Whenever economically possible, a great deal of responsibility and accountability should be delegated to full-time professional investment staff rather than borne by part-time, volunteer investment committee members, however well qualified.
- A tendency to follow the herd, regardless of whether that is the best direction for a particular institution, given its resources, financial needs, and so on.
- A custom of making only those decisions that are least controversial, most conventional, and offend no one. Mediocre results are the best that can be expected when decisions must satisfy the lowest common denominator.
- A tendency to allow more aggressive and vocal committee members to dominate meetings and foist their views on others, even if these are relatively extreme opinions.

Fiduciary "Environmental" Risks

We refer here to changes in the fiduciary environment that surrounds endowment investing. These are "risks" only in that they change the rules of the game, so to speak—sometimes for better, sometimes for worse. Either way, they require attention lest investment committee decisions find themselves compromised by new rules. For example, in the United States, the new rules might include the ongoing state-by-state adoption of the Uniform Prudent Management of Institutional Funds Act, the changing definition of "endowment" for financial reporting and endowment spending purposes, the evolving views of the debt rating agencies (which recently have focused heavily on governance of the investment process), the continuing trend toward greater disclosure of investment policies and spending, and of course the new scrutiny of investments by external auditors—particularly in the area of alternative investments. Even with expanded investment office staff, many investment committees have found it difficult to keep abreast of the sheer volume of changes, never mind their implications for decision making. While the origins of many of the changes in the United States have been credited to, or blamed upon, the 2002 Sarbanes-Oxley Act, there is no reason to expect the pace to subside as time passes. Indeed, more recent dislocations in the credit markets can be expected to lead to further regulation with implications for endowment investing. The only thing predictable is change itself.

CHARACTERISTICS OF A SUCCESSFUL GOVERNANCE STRUCTURE *

A Clear Articulation of the Roles and Responsibilities

- Board
- Board Committees (e.g., compensation, audit, investment)
- Administration
- Investment Staff/Consultant

Personnel

- Board: No specialized expertise necessary
- Board Committees: Some members should have relevant specialized knowledge and experience (e.g., institutional investment fund management)
- Administration: Should understand the differentiating characteristics of investment organizations (e.g., accounting for derivatives transactions)
- Investment staff: Investment management experience, knowledge, and expertise

Clearly Defined Lines of Communication and Reporting

- Between the staff and the investment committee
- Between the investment committee and the Board
- From the Board to the constituencies they represent
- Among committees, staff, and external auditors

An Investment Management Staff and Structure

- Reflective of the capabilities and limitations of the investor
- Sufficient to ensure adequate oversight and exercise of fiduciary responsibility, given the size and complexity of the investment assets
- Cost effective
- Organized such that those in charge of endowment management are focused on investing, and not subject to extraneous distractions
- Clarity and transparency as to who bears what responsibility for which investment decisions—but designed to ensure close teamwork
- Attuned to the many and continuing changes in: state laws governing endowment investing; accounting rules such as mark-to-market valuation; scrutiny by debt rating agencies; audit and audit-related communications; and federal disclosure requirements

* Standards of sound governance evolve over time and are subject to various laws. Consequently, institutions unsure about their governance structure or standards should consult counsel as to prevailing law on the matter.

SETTING APPROPRIATE POLICIES AND OBJECTIVES

Introduction

Endowment funds are not in the business of making money—they are in the business of giving money away. Obviously, how much you can give away is a function of how much you earn; nevertheless, the distinction is not merely semantic and focuses attention on the fact that endowment funds are not ends in themselves, but the means to an end, which is to provide financial support to the organization to which they belong. Until the organization defines its *financial* objectives for the endowment fund, it cannot begin to construct *investment* objectives designed to realize those ends. Consequently, the trustees' first responsibility is to define the fund's financial objectives and their second is to articulate commensurate investment objectives.

Setting Policies: Spending

The development of policies governing spending, risk, and asset allocation is an iterative process that can easily slip into a circular maze. To avoid that trap, one should follow a logical and linear path.

The first step along this path is deciding how much financial support the endowment can provide to the organization. In other words, How much can we spend? The answer is contingent on answers to four other questions:

- Do we want to grow, maintain, or liquidate the endowment fund?
- If we decide to maintain the fund, how much risk of *failing* to realize that objective will we tolerate?
- What average annual real rate of return can we expect to earn over the life of the fund?
- How much variability in the level of spending can we stand?

A fund that wants to grow must earn more than it spends; a fund that intends to liquidate can do so by spending more than it earns; and a fund aiming to achieve intergenerational equality in real spending, in perpetuity, should attempt to spend no more or less than it earns (after inflation). Most endowment funds fall into this third category, which means their basic objective is to maximize sustainable spending—and in the case of private foundations, of course, to meet the minimum spending requirements.

To achieve this objective the investment committee must attempt to mediate among three conflicting objectives:

- Earn the highest possible return in order to spend as much as possible without depleting the fund's real (inflation-adjusted) value.
- Avoid risks that could impair the real value of the fund for decades (risk of ruin), forcing either draconian cuts in spending or a decision to spend the fund down.
- Minimize the volatility of returns, since volatility in returns is transmitted to volatility in spending, which is undesirable for budgetary reasons.

These are variants on the fundamental investment trade-off between risk and return. To make informed decisions, a committee needs data on the historical risks, returns, and correlations of returns of every asset class it considers eligible for inclusion in the portfolio, and a rational approach to estimating their likely ranges in the future. From these data the committee can estimate the probable range of returns for various asset allocation mixes, with their probable risk of ruin and their volatility over different time horizons, and thus gauge how much can be spent each year while incurring relatively little risk of depleting the real value of the fund over time.

Setting Policies: Asset Allocation

In the linear approach to investment planning, asset allocation follows spending and precedes implementation. As we have already seen, however, the process is not that simple: trustees cannot set spending policies without regard to asset allocation and risk; similarly, asset allocation and risk policies cannot be set without regard to implementation.

For example, there is no point in a $100 billion pension fund deciding to allocate 20% of its assets to early-stage venture capital—can't be done (well, can't be done *effectively*). And at the other end of the spectrum, a small endowment with limited resources managed by an investment committee that meets quarterly should

think long and hard before hiring handfuls of active managers for its equity and bond portfolios—indexing being a simpler, cheaper, and probably more profitable option most of the time.

However, the fact that asset allocation decisions should be informed by implementation capabilities does nothing to diminish the importance of developing sound, explicit asset allocation policies.

A fund's *strategic* asset allocation should be articulated in the form of a long-term policy portfolio, which is simply the asset mix the investment committee currently deems best suited to realize the fund's investment objectives over the long term, given the institution's endowment management resources and limitations. The asset classes included should reflect primary, long-term commitments to types of investments that have distinct underlying bases of return and should not be sliced into fine slivers. For example, the asset class "U.S. equities" should *not* be subdivided into "large cap" and "small cap" or "value" and "growth." In addition, some institutions may find it more useful to define their strategic allocations in terms of the various roles the investments are designed to play in the total portfolio (e.g., real assets, absolute return assets, aggressive growth assets) rather than in traditional "asset class" terms.

The investment committee must then decide whether the endowment should also engage in *tactical* asset allocation, which is the attempt to add value by tactical deviations from the strategic asset mix. This may be done by setting ranges around the long-term target allocations so that those managing the endowment—whether staff or committee—can dial up or down the allocation to particular asset classes relative to the long-term target allocation. Or it may simply be done ad hoc through decisions to over- or underweight this or that asset class. Either way, this is a "soft" form of market timing—the "hard" form of which is wholesale shifts from equities to cash or bonds and back again.

We absolutely discourage hard market timing for the simple reason that equity market returns are highly concentrated and unpredictable, such that investors missing just a few of the best days in a year are likely to find their returns half or less of what they might otherwise have earned. Moreover, every market timing decision is actually two decisions—when to get out and when to get back in—both of which must be successful for the investor to come out ahead. For these and other reasons, market timing is risky and impractical—and the fact that none of the most successful endowment funds do it should give prospective timers considerable pause.

Soft market timing—dialing up and down the exposure to the primary asset classes (equities, bonds, cash) on the basis of relative valuations—is potentially less damaging (because less draconian), but equally unlikely to add value most of the time, for the same reasons noted above. In addition, even relatively sophisticated investors find it difficult to swim against the prevailing tide and often tend to want to allocate *more* money to what has performed well at the expense of what has performed badly despite overwhelming evidence that this is a prescription for failure (see "Behavioral Risks").

The antidote to soft market timing is rebalancing, which increases the investor's odds of buying low and selling high more often than not. In addition, only through rebalancing can a fund maintain the level of risk exposure the trustees have deemed appropriate, and for this reason every asset allocation policy statement should include a commitment to systematic rebalancing. Endowment funds that diversify the portfolio in order to enhance their risk/return profile, but subsequently fail to rebalance, are like poker players who increase the size of their bets just because they've had a few good hands.

Until the organization defines its financial objectives for the endowment fund, it cannot begin to construct investment objectives designed to realize those ends.

"Long term" is not a synonym for "inactive."

All this is not to say that endowment funds should be passive buy-and-hold investors. "Long term" is not a synonym for "inactive." On the contrary, they should constantly be asking, What are we overlooking? What risks are we incurring? Are we incurring more or less risk than we had decided was appropriate? Are we getting paid for the risks we're taking? Are there other risks we might consider because the potential payoff seems disproportionately high? Especially in more complex portfolios that include such investments as hedge funds and private investments, "asset allocation" is increasingly an outdated concept as investors search for returns through multiple kinds of exposures to various sources of return—some market driven, some not—and oversight becomes a matter of understanding the fund's risk allocations and exposures rather than its "asset" allocation.

Moreover, there are generally many opportunities for tactical shifts *within* primary asset classes (especially equities, broadly defined), if not among them. For example, the next table shows our assessment of relative valuations among asset categories as of March 2000, just when the glorious bull market of 1982–2000 reached its peak. Although an extreme example, this serves to illustrate a general point: even at that moment in time when U.S. stock market valuations were massively higher than at any previous period, investors could maintain their exposure to equities by minimizing their holdings of those kinds of equities that had become extremely overvalued and rotating instead to those that had suffered wholesale neglect during the tech frenzy of the late 1990s.

In short, the development of a long-term strategic asset allocation, explicated in a written policy statement and embodied in a policy portfolio, is an indispensable step in the investment planning process, but this is where management of the endowment begins rather than ends. And the strategic asset allocation should itself be reviewed each year to ensure that it remains congruent with the institution's objectives. Generally, such a review may be relatively cursory, but a more thorough assessment should be made every four or five years, since markets evolve, circumstances change, and significant new opportunities emerge (e.g., the development of derivatives in the 1980s or the creation of inflation-linked government bonds in the 1990s).

Tactical Asset Allocation Policy

To codify the long-term strategic asset allocation policy, every endowment fund should have a customized portfolio benchmark composed of suitable benchmark indices weighted according to the weights assigned to each asset class in the strategic policy allocation. This is the policy portfolio, deviations from which should be deliberate and purposeful, rather than accidental and random. Investors should also be able to articulate whether those deviations are strategic (e.g., a permanent bias toward value stocks) or tactical (e.g., a temporary overweighting of small-cap stocks on the basis of relative valuations) and should measure results accordingly. If the differences are tactical, the expected duration of these bets, and the conditions under which they will be closed out, should also be articulated in advance.

Like all of us, investment committee members are constantly bombarded by the daily noise of the investment world, which makes us think we should always be doing something with our portfolio. Investment banks and brokers generate much of this noise since they are paid on transactions, and so it is in their interest to encourage us to feel we need to transact. Print and TV media also contribute to the din, because they cannot sell advertising unless they attract readers and viewers with dynamic, interesting coverage. In addition, committee members dedicated to serving the institution naturally tend to feel that, having perhaps traveled a considerable distance and sacrificed a good deal of precious time to attend a meeting, they should *do* something rather than just sit on their hands. But all this can quickly lead to constant tinkering that may do more harm than good.

There are two antidotes to the distracting prevalence of so much irrelevant noise: the first is a working knowledge of both investment math (e.g., what are common stocks priced to return?) and investment history (e.g., we have seen this kind of crisis before and so we are not going to

Cambridge Associates' Capital Market Valuations: March 2000

DANGEROUS BUBBLE	VERY OVERVALUED	OVERVALUED	FAIRLY VALUED	UNDERVALUED	VERY UNDERVALUED
• Global Tech Equity	• S&P 500	• U.S. Small-Caps	• U.S. Value Equity	• RE (REITs)	
• U.S. VC (later-stage)	• U.S. Large-Caps	• U.S. Mid-Caps	• Global ex U.S. Small-Caps	• Oil & Gas (PE)	
• U.S. VC (early-stage)	• U.S. Def Growth Eqty	• U.K. Equity	• U.S. Long & Intermediate Bonds	• U.S. Infl-Lnkd Bonds	
	• U.S. Agg Growth Eqty	• Euro Equity	• High-Yield Bonds	• GS Commod. Index	
		• U.K. Bonds	• Euro Bonds	• Oil & Gas (Drilling)	
		• Japanese Bonds	• EM Equity (Asia/Lat America)	• Tax-Exempt Bonds	
		• U.S. Buyouts	• U.S. Timberland	• Oil & Gas (Property)	
		• U.K./Euro PE	• U.K./Euro VC		
		• Japanese Equity	• RE (apt/office/industrial/retail)		
			• Gold		
			• Event Arbitrage		
			• Distressed Securities		
			• Oil & Gas (Private Debt)		

do something stupid in response); the second is to *monitor* the portfolio almost constantly, but to *evaluate* the results only over longer time periods (e.g., three years), paying special attention to the consequences of tactical asset allocation and manager selection decisions.

Asset Allocation Modeling

The sloppy approach to asset allocation is to run a model designed to optimize the trade-off between risk (defined as volatility) and return, and allocate accordingly. Although model enthusiasts often present themselves as rigorous statisticians, casting the clear light of objectivity into the murky opacity of subjective judgments, their outputs have a delusory precision dangerously seductive to the uninitiated.

Models are powerful and persuasive tools for illustrating such important concepts as the value of diversification. In addition, they are very good at helping one answer such questions as, Would it actually make any difference if I moved 5% of my domestic equity allocation into foreign equities? But they do not provide solid foundations on which to actually *construct* portfolios because they are like sausage machines—no matter how beautiful the machine, the quality of the sausages coming out the bottom is almost entirely dependent on the quality of the meat put in the top. In the case of asset allocation models, what goes in the top are assumptions about the returns, the variability of returns, and the correlations of returns among various asset classes—and always and everywhere these assumptions are profoundly unreliable.

There are ways to mitigate this garbage in/garbage out problem to some extent, but no way around the fundamental unreliability of either short- or long-term forecasts.

So models are extremely useful to *inform* one's thinking about risk and return, but should never be used to *determine* an asset allocation.

IMPLEMENTATION

Introduction

If policies and objectives are an endowment fund's architecture, and asset allocation is the engineering, implementation is the actual construction—the walls and roof, the plumbing, the paving, and the electrical work. And it is little consolation to the occupants of a badly built house that they have beautiful blueprints. Yet many endowments—particularly smaller funds managed by investment committees—fail to bring the same disciplined rigor to the actual investment of the money that they brought to the development of appropriate policies.

Resources

The first question an investment committee should ask is not, What do we want to do? but, What *can* we do? In other words, What are our resources and our competitive strengths and weaknesses? Too many funds with limited resources have unrealistic expectations about their ability first to implement and then to oversee a complex, multi-manager asset allocation structure. We think the rewards of intelligent portfolio diversification are considerable—a view supported by historical data—but we constantly warn that diversified portfolios simply cost more to manage effectively and are unlikely to succeed if run on a shoestring budget. So the first step in a disciplined implementation plan is to invest first in those asset classes where the institution is best equipped to succeed.

The Role of Each Asset Class

The second step is to match the form of the investment with the role it is designed to play in the portfolio. For example, where an investment committee has determined that the role of bonds in the portfolio is to serve as a hedge against periods of economic contraction (to help sustain spending without selling equities at depressed prices), it makes no sense to implement the investment by hiring a bond manager that takes considerable credit risk. To fulfill its designated role, the bond portfolio needs to be of intermediate- to long-term duration and immune from either credit or call risk. Given such constraints, the chances of an active manager adding value, net of fees, are *de minimis*, and so the sensible way to implement a bond allocation of this sort is either by investing in a government bond index fund (as long as it does not include mortgage-backed securities) or by buying a laddered portfolio of long-term government bonds.

Indexing and Active Management

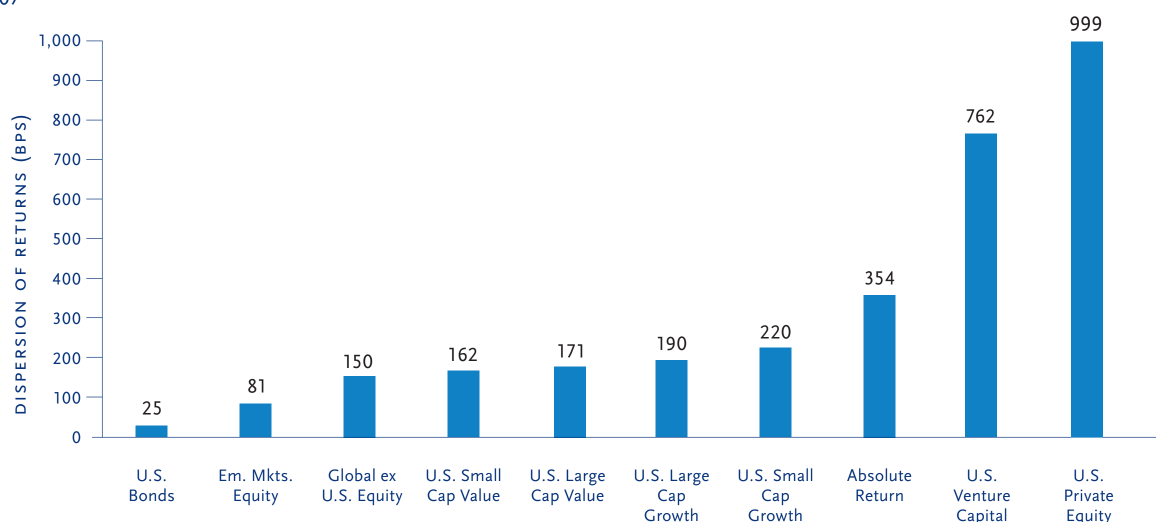
Indexing should also be considered for other investments where index funds serve as reasonable proxies for the asset class. In such cases, indexing should always be considered the default option, to be pursued unless a compelling case can be made for active management.[6] In other words, there must be some *objective* basis for the presumption that net returns will be sufficient to justify both the higher costs and the greater risk of active management. Many investment committee members, themselves investment managers, exercise a purely *subjective* judgment in favor of active management. This is not to say that endowments should never hire active managers, only that every endowment should articulate why it believes its decision to employ active managers in such-and-such an asset class is likely to prove superior to indexing, and should then monitor and measure the results over multiple time horizons of no less than three years—preferably longer.

Before hiring active managers in an asset class for which reasonable index funds exist, the staff or investment committee of an endowment fund should have a clear idea of the conditions under which these managers are likely to perform better or worse than an appropriate benchmark index, and by how much for how long. If the benchmark has been carefully selected as a suitable proxy for the underlying investment, then the deviation of the managers' returns relative to that of the benchmark represents a kind of risk—risk of not achieving the returns of that asset class or sector—and so it is incumbent on the investor to understand the likely extent

[6] Note, however, that the choice of an index is itself an active choice and that all indices are not created equal since some are more stable and comprehensive than others. In contrast to the situation a decade ago, when the range of indices was relatively narrow, investors today can effectively implement almost any systematic bias through one or more index funds; for example, a bias against cap-weighting the equity allocation, or a bias in favor of "value" or "growth" or in favor of high-quality or high-yielding stocks.

The Importance of Manager Selection: Difference Between Top Quartile and Median Manager

1998–2007



Average Annual Compound Return (%)	U.S. Bonds	Em. Mkts. Equity	Global ex U.S. Equity	U.S. Small Cap Value	U.S. Large Cap Value	U.S. Large Cap Growth	U.S. Small Cap Growth	Absolute Return	U.S. Venture Capital	U.S. Private Equity
5th Percentile	7.07	19.72	15.59	14.21	13.57	12.66	16.33	19.57	27.32	44.53
25th Percentile	6.28	17.98	12.14	12.35	10.36	9.75	12.18	14.62	6.77	24.29
Median	6.03	17.17	10.64	10.73	8.65	7.85	9.98	11.08	-0.85	14.30
75th Percentile	5.71	15.51	9.63	9.53	7.43	6.28	8.46	9.02	-8.25	7.86
95th Percentile	4.92	13.65	8.18	8.45	5.80	3.80	5.22	4.86	-22.45	-7.82

Sources: Cambridge Associates LLC Investment Manager Database and Cambridge Associates LLC Non-Marketable Alternative Assets Database.
Notes: This graph shows the dispersion of returns between the median (i.e., 50th percentile) and top quartile (i.e., 25th percentile) managers for each asset class. U.S. venture capital and U.S. private equity returns represent (net IRRs net to limited partners) the median and top quartile of mature funds (vintage years 1998 through 2002). U.S. private equity and U.S. venture capital data are from the Cambridge Associates LLC U.S. Private Equity Index® and Benchmark Statistics and Cambridge Associates LLC U.S. Venture Capital Index® and Benchmark Statistics as of September 30, 2007. Data are based on managers with a minimum of $50 million in assets and are denominated in U.S. dollars.

and duration of this active risk being incurred. Failure to specify this active risk accurately (or at all) often leads to managers being fired for failing to live up to unrealistic expectations.

Active bets against the benchmark should also be sized according to their potential risk of *underperformance*, should they prove wrong. In a U.S. equity portfolio, for example, the risk incurred in allocating 50% of the total to an enhanced index manager may equal the risk incurred in allocating 10% to a highly concentrated satellite manager.

In general, the dos and don'ts of active manager selection in traditional asset classes are relatively straightforward—and consistently ignored. The simplest of these are:

- DON'T hire managers on the basis of good recent performance.
- DO hire managers with coherent, disciplined philosophies and processes that have generated good long-term results when they have recently suffered a period of relatively weak performance solely as a result of sticking to their knitting.
- DON'T fire managers solely on the basis of poor recent performance.

In more inefficient areas where highly specialized expertise is required—for example in venture capital—there is some evidence of *persistence* in manager performance; in other words, those managers that have done well are more likely than not to do well in the future. However, in more efficient asset classes like U.S. equities, multiple studies have revealed a consistent lack of such persistence. Nevertheless, most investment committees insist on hiring U.S. equity managers with superior recent performance—any short-listed manager with inferior recent results is quickly rejected. In fact, there is perhaps no single step most investment committees could take to improve the performance of the funds they oversee than to change their approach—indeed their whole mind-set—to manager selection in those traditional asset classes that generally make up the largest percentage of the total endowment portfolio. And those members who consistently advocate the firing of managers that have recently performed poorly and the hiring of replacements from the ranks of those that have recently done well should be diplomatically shunted off to serve on other board committees where they will inflict less damage.

Alternative Assets

Because the dispersion of manager returns in traditional asset classes is relatively small over periods of five or ten years, the penalty for selecting mediocre managers may appear relatively modest (although the amount of money lost from, say, 50 bps average annual underperformance can be very substantial). However, in so-called alternative investments—particularly hedge funds, private markets, and private real estate—the dispersion of returns is generally far greater and the consequences of sloppy manager selection therefore far more severe. In addition, fewer investment committee members are likely to have a firm grasp of the risk and return characteristics of these asset classes, compared to those of more traditional investments.

Manager Selection

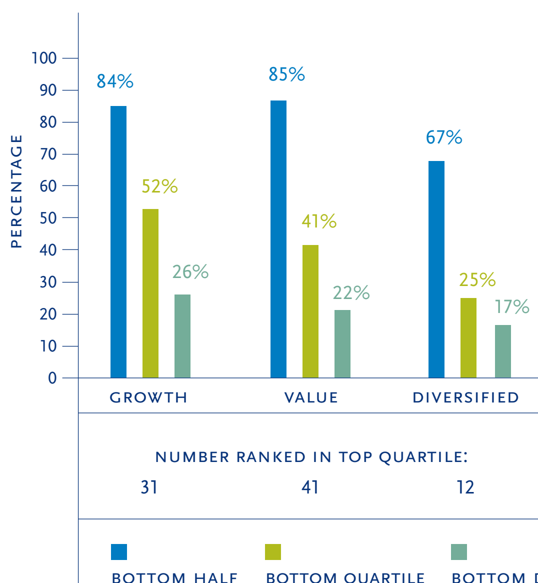
In most fields of human endeavor, success is predictive of subsequent success—it does not pay to bet that the winner of this year's PGA tournament will prove a duffer next year. What many investors seem unable to grasp, however, is that the investment world does not conform to this linear pattern (what has happened will persist), but is cyclical (what goes up comes down and vice versa), which results in their switching strategies at inopportune times.

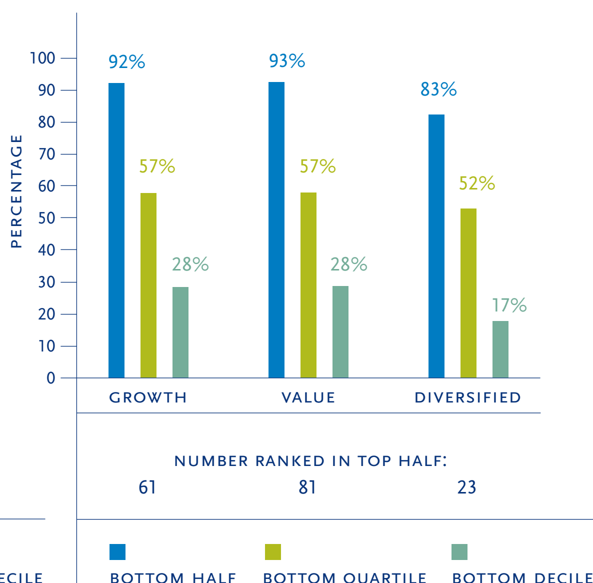
Why is this? We would speculate that many investment committees believe stock selection skill to be the primary determinant of differential performance among equity managers. If this were the case, it would be logical to assume that those possessed of such skill would persistently outperform those who lacked it. However, since the vast majority of equity managers minimize stock-specific risk (and return) by holding diversified portfolios, what actually determines their relative performance is their investment approach rather than their stock selection skills. Unfortunately, investment approaches (e.g., investing in conservative rather than in aggressive growth stocks) are subject to periodic, unpredictable cycles. Consequently, any manager pursuing a consistent investment discipline will inevitably suffer periods of relative underperformance. Investors who fail to thoroughly understand both the basis and the variability of a manager's returns *before* hiring are likely to be disappointed by subsequent results.

Since most institutional investors use similar search criteria, with a heavy emphasis on very good three- to five-year relative performance, a blue-chip client list, and a reasonable level of assets, the majority of manager searches are won by a relatively small number of managers. However, those managers with the greatest growth in assets in a given year have typically underperformed their competitors in subsequent one- and three-year periods. Similarly, those managers already in the top quartile when ranked by assets under

Percentage of Top U.S. Equity ex Small-Cap Managers Whose Rolling 12-Quarter Ranking Fell at Least Once into the Bottom of the Manager Distribution

January 1, 1998 – December 31, 2007





Source: Cambridge Associates LLC Investment Manager Database.
Notes: For example, the left graph shows that 84% of top quartile growth managers for the period 1998–2007 actually endured at least one three-year period of below-median performance during the ten years in which they were one of the best-performing managers among their peers. And 52% of those managers fell into the bottom quartile of growth manager returns for at least one three-year period in that decade. Note that these data apply to the winners—the top quartile managers over ten years.

management have also tended to underperform their smaller competitors. Investors should therefore consider carefully before committing money either to a manager whose recent success is resulting in strong growth in assets or to one already managing a relatively large portfolio.

Precisely because there is no sound basis for hiring or firing managers solely on the basis of recent performance, investors should make far more rigorous efforts to understand why and to what extent a given manager might be expected to add value, and just how much that manager is likely to deviate from an appropriate benchmark index (both for better and for worse), when, and for how long. Only then will investors develop sufficient confidence to stick with successful managers during those periods when they lag the market, and avoid the expense and inevitable disappointment that comes from firing recent "losers" and replacing them with recent "winners."

Since investors cannot predict what investment approach will work best tomorrow, it makes sense to diversify by hiring several managers adept at different disciplines, and to rebalance among them periodically. This requires patience and a commitment to adding funds to managers that have recently underperformed. Nothing better underlines why investors should devote far more resources to their manager selection process than is now customary: unless they have a thorough understanding of their managers, investors cannot possibly develop sufficient confidence not only to stay the course, but to add funds when managers underperform (as all managers do at one time or another).

In short, investors intent on hiring active managers should develop a *coherent, disciplined, explicit, long-term strategy* for success that serves both as a blueprint for the future and also as a mechanism for combating behavioral risk (i.e., the risk of ill-judged hiring and firing on the basis of short-term performance). For those who cannot overcome this behavioral risk, some form of passive investing is probably a better option than active management.

All of which makes effective implementation of allocations to such asset classes far more challenging than with the more familiar, traditional areas. There are four approaches to implementing allocations to alternative investments:

1. *Rely on the expertise of committee members or that of a subcommittee, which may include additional advisers.* The virtues of this approach are low costs and the possibility that institutions with, for example, highly placed alumni in major venture capital firms may gain access to sought-after funds closed to other investors. The limitations of this approach are the diffusion of responsibility for specific decisions, the lack of continuity as committee or subcommittee members rotate off, and the demands of effective oversight in asset classes where manager-specific risk should be moderated through diversification of investments across multiple managers. For example, when the two committee members with, say, hedge fund expertise have gone, will there be new trustees equally qualified to monitor and oversee the hedge fund program?

2. *Hire or develop professional investment staff expertise in these asset classes.* This approach is most cost effective for endowments investing sufficient amounts. Its limitations are recruiting and retention difficulties—in the high noon of venture capital investing in the late 1990s, for example, private equity teams at several large endowments left to set up their own funds-of-funds or were poached by large firms eager to get into this lucrative business. More recently, anyone with hedge fund experience and expertise is likely to be bombarded with lucrative job offers. Under these circumstances, endowments can find it difficult to compete for talent unless they offer hefty compensation packages that bump up costs across the board.

3. *Outsource the investment to external experts capable of creating a customized program designed to meet the institution's objectives, implementing the investments, monitoring the results, and modifying accordingly.* This has the virtue of relative simplicity since the investment committee or staff role consists now of approving (or modifying) policy recommendations and then monitoring results. In addition, an institution of modest means can gain access to specialized expertise through this route. However, the committee and/or staff should obviously conduct extensive due diligence of the firms competing for the business.

4. *Outsource to one or more funds-of-funds.* This approach has the virtues of a one-stop shop solution and access to specialized expertise. However, it is more expensive than any of the other options and the investor obviously loses the ability to customize the investment since a fund-of-funds is a prepackaged program.

Nor are these approaches mutually exclusive. For example, an investment committee investing in individual hedge funds may rely heavily on external advice, even if the program is not outsourced. Similarly, a program may include both funds-of-funds (for diversification purposes) and individual fund investments.

In every case, however, the investment committee bears the responsibility of deciding which approach to implementation best fits its needs since this is a policy issue.

Before investors can answer the question, How are we doing? they must first define their objectives, the time horizon over which they want to measure results, and the purpose for which the measurement is being made (e.g., feedback on the success of investment decisions, determining staff compensation).

To do this successfully, endowment funds must not only *measure* performance, but also *evaluate* how the results were obtained. Few do so with any rigor, particularly with regard to risk—and since returns are essentially the payments investors receive for incurring various kinds of risks, ignoring this fundamental component of endowment performance seems rather cavalier. In addition to, How did we do? investors should therefore ask, And did we incur more or less risk than we expected (or intended) along the way? After all, a fund's statement of policies and objectives should articulate how much and what kinds of risk it is prepared to incur in pursuit of its real return goals.

The obvious response to, How did we do? is, Relative to what? and the answer to that varies considerably, depending on who is asking the question for what purpose. In fact, funds should measure results in multiple ways, as in the "Hierarchy of Performance Measurement" laid out below.

Peer Comparisons

Missing from this table is the familiar question, How did we do relative to our peers? because that particular question is relevant primarily to institutions that are in competition. For example, the Yale endowment has a legitimate interest in performing as well or better than, say, Princeton and Harvard since the support provided to the operating budget by these endowments gives their schools a powerful competitive advantage. However, the question is less relevant to foundations and other endowed institutions, although knowing how one is doing relative to similar institutions always has some value as a yardstick.

Hierarchy of Performance Measurement

WHO'S ASKING?	WHAT QUESTION?	ABOUT WHAT?	OVER WHAT TIME HORIZON?
Board of Trustees and Investment Committee	Has the return equaled or exceeded spending?	Total Portfolio	5, 10, 20 years, since inception
Investment Committee	Has the return equaled or exceeded that of our policy portfolio?	Total Portfolio	1, 3, 5 years
Investment Committee	Has the return for each asset class equaled or exceeded that of the asset benchmark(s)?	Each Asset Class	1, 3, 5 years
Investment Committee and/or Staff	Have the returns of individual managers equaled or exceeded those of their benchmarks?	Individual Managers	1, 3, 5 years

Hierarchy of Risk Assessment

WHO'S ASKING?	WHAT QUESTION?	ABOUT WHAT?	OVER WHAT TIME HORIZON?
Board of Trustees and Investment Committee	What is the likelihood of our suffering a decline in real value from which we do not recover for a decade or more?	Total Portfolio	N/A
Board of Trustees and Investment Committee	What is the likelihood that we will have to cut back spending in any given year?	Total Portfolio	N/A
Investment Committee	How has the variability of our actual portfolio compared to that of our policy portfolio?	Total Portfolio	1, 3, 5 years
Investment Committee	Have we incurred risks in our actual portfolio that are not incurred by the policy portfolio? If so, have they paid off?	Total Portfolio and Sub-Portfolios	1, 3, 5 years
Investment Committee or Professional Staff	What is the risk of Manager X underperforming her benchmark? Have we been sufficiently compensated for this risk?	Individual Managers	1, 3, 5 years

As already noted, it is not enough to monitor performance alone; those managing the fund (whether investment committee or professional staff) also need performance attribution information. For example, investors should know how much of the returns of a manager invested in foreign equities are attributable to currency gains, country selection, sector selection, and individual stock selection. More generally, as investors allocate more and more assets to foreign investments, failure to monitor currency exposure across the whole portfolio could lead to unanticipated volatility and some nasty surprises.

In general, returns attributable solely to greater risk-taking need careful scrutiny along the lines outlined in the "Hierarchy of Risk Assessment" table above.

Benchmarking

Much nonsense is written about benchmarking, which is simply a mechanism for answering most How did we do? questions. Careless or misguided benchmarking leads to sloppy and misleading performance measurement; that is, *misinformation* about whether one's investment decisions have succeeded or failed, which must

inevitably degrade the quality of subsequent decision making. On the other hand, benchmarking zealots sometimes seem in danger of confusing benchmarking with investing, focusing on the former to the detriment of the latter, despite the fact that virtually all benchmarks are sufficiently flawed that slicing their data into ever-finer slivers leads to a delusory precision worse than the informed ambiguity of more qualitative judgments. Nevertheless, careful and sensible attribution analysis—the last step in the performance measurement feedback loop—provides insight into the how and why of what happened, which should enable investors to better assess whether they should remain on their current course, or whether they have made some mistakes that should be corrected. And attribution analysis requires effective benchmarking.

Investors cannot avoid making active decisions when they select a benchmark, as there are substantial differences among indices. Therefore, the selection of a benchmark has consequences that should be clearly understood in advance through careful analysis of the construction methodology, representation, and characteristics of the index relative to available alternatives.

However, investors should not expect too much even from careful benchmarking. Markets veer off in unexpected directions, managers go off fishing in new ponds, and the benchmarks themselves change character.

Although requiring careful thought and attention to detail, the selection of benchmark indices for public market investments and for active managers of public market securities is relatively straightforward. Much more complicated is the selection of suitable and relevant benchmark indices for investments in marketable alternatives (hedge funds), non-marketable alternatives (venture and non-venture private equity), and real estate because available indices fall far short of meeting basic benchmark criteria: that is, they do not provide:

- A complete, accurate, transparent, and verifiable representation of the available opportunity set.
- A viable, investable alternative to active management available ex ante, rather than ex post.
- Risk and return characteristics that can be accurately measured.
- Components that can be parsed to allow for attribution analysis.

Consequently, investors should recognize that quantitative precision is particularly elusive in measuring the performance of these types of investment and should be prepared to exercise some qualitative judgment in assessing how they have done.

Office Locations

ARLINGTON
4100 North Fairfax Drive, Suite 1300
Arlington, VA 22203-1664 United States
Tel 703.526.8500 Fax 703.526.8501

BOSTON
100 Summer Street
Boston, MA 02110-2112 United States
Tel 617.457.7500 Fax 617.457.7501

DALLAS
2001 Ross Avenue, Suite 2600
Dallas, TX 75201-2969 United States
Tel 214.468.2800 Fax 214.468.2801

LONDON
80 Victoria Street Cardinal Place
London SW1E 5JL United Kingdom
Tel 44.20.7592.2200 Fax 44.20.7592.2201

MENLO PARK
2730 Sand Hill Road, Suite 300
Menlo Park, CA 94025-7074 United States
Tel 650.854.8400 Fax 650.854.8415

SINGAPORE
Six Battery Road, Suite 13-08
Singapore 049909
Tel 65.6224.8688 Fax 65.6224.8788

SYDNEY
MLC Centre Level 65
19 Martin Place, Suite 6503
Sydney NSW 2000 Australia
Tel 61.2.9229.6500 Fax 61.2.9229.6501

CAMBRIDGE ASSOCIATES LLC

ARLINGTON BOSTON DALLAS LONDON MENLO PARK SINGAPORE SYDNEY

www.cambridgeassociates.com