Part One

CONSTRUCTING YOUR IVY PORTFOLIO

Chapter 1

The Super Endowments

16.62%.

That figure is the annualized return the Yale University endowment has returned per year between 1985 and 2008.[1] To put that number into perspective, the S&P 500 Index returned 11.98% a year over the same time period in one of the greatest bull markets in U.S. history.

Not only did the Yale endowment outperform stocks by over 4% per year, but it did so with 33% less volatility and only one losing year (a measly −0.2% in 1988). Similarly, the Harvard University endowment returned over 15% a year with less than 10% volatility.[2] When the S&P 500 declined by 30% from June 2000 to June 2003, the Yale endowment gained roughly 20% and the Harvard endowment returned 9%.

A $100,000 investment in the Yale endowment in 1985 would be worth $4.0 million by June 2008, versus only $1.5 million invested in the S&P 500 and $950,000 in U.S. 10-year government bonds. The same amount invested in the Harvard endowment would be worth a respectable $3.0 million.

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[1]The endowment fiscal year ends June 30th; therefore, the yearly returns for the indexes will look slightly different from the calendar year ending December 31st.

[2]Volatility is measured as the standard deviation of yearly returns unless noted otherwise.

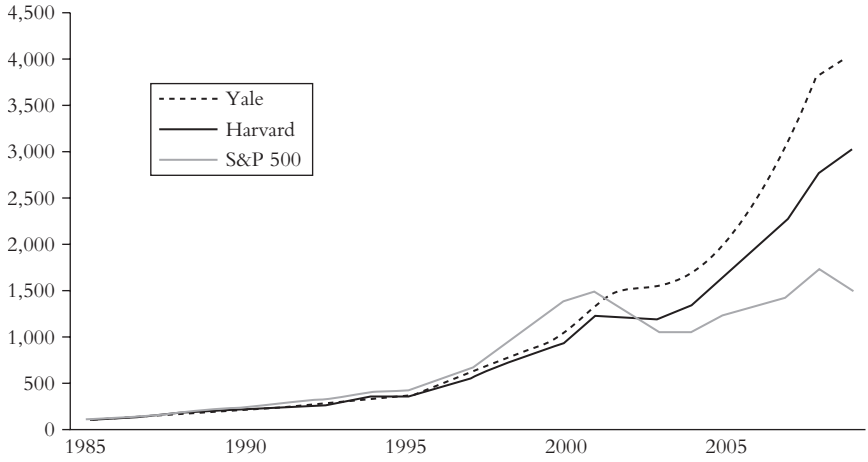

Figure 1.1 Equity Curve of the Yale and Harvard Endowments vs. the S&P 500, 1985–2008, Fiscal Year Ending June 30th
SOURCE: Harvard and Yale endowment annual reports.

Figure 1.1 shows the performance of the top two endowments (by size) versus the S&P 500.

How exactly did Yale and Harvard accomplish such great returns, and more important, can an individual investor hope to achieve similar success? That is the focus of this book—a glimpse into the ivory tower to combine the best of academia and the real world to manage your portfolio.

Endowments Are Different

> *Effective management of a university endowment requires balancing fundamentally competing objectives. On the one hand, the university requires immediate proceeds to support the current generation of scholars. On the other hand, investment managers must consider the needs of generations to come. The endowment must be safeguarded so that it will survive as long as Yale itself, which we believe means forever.*
>
> —PRESIDENT RICHARD LEVIN, 2000 YALE ENDOWMENT REPORT

Endowments are a little different from the average investment portfolio. First of all, they don't have to pay any taxes to the United States

government. This enables the endowments to pursue asset classes and strategies that vary from taxable accounts since they do not have to make investment decisions based on considerations of long-term versus short-term capital gains.

Second, endowments have a long-term investment horizon: forever. They hope to exist in perpetuity, trying to treat future generations of students fairly and similarly to the current generation. To do so, endowments typically spend between 4% and 5% of their endowment every year to cover university operating costs.[3] Because of this long-term horizon, endowments have an unrestricted investment policy and do not have the liquidity needs of a normal investor (buying a house, paying for a child's college education, paying for medical bills, and so on). This allows endowments to invest in illiquid asset classes like timber that may require an investment time horizon of more than 20 years.

To keep the endowment from dwindling, the endowment manager aims for portfolio returns that outpace inflation (historically around 3% per year but it has been much higher) and university spending rates (4% to 5%). Inflation is the endowment's worst enemy, and ideally an endowment would like its performance chart to look like Yale's (see Figure 1.2), with the endowment's growth handily outperforming the ravages of inflation over time. Returns before inflation are called nominal returns, while returns after inflation are called real returns.

Endowments are becoming increasingly important to the health of a university, and a sustainable endowment frees the university from relying on any single source of funding. Funds can be used to invest in new facilities, create and maintain academic posts, fund research, and create new scholarships.

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[3]Politicians have recently gotten involved asserting that the endowments do not spend enough given rising tuition costs. Legislation is being considered that would require endowments to spend a certain percentage of assets per year. This is similar to foundations, which are currently required to spend 5% of assets to maintain their tax-exempt status.

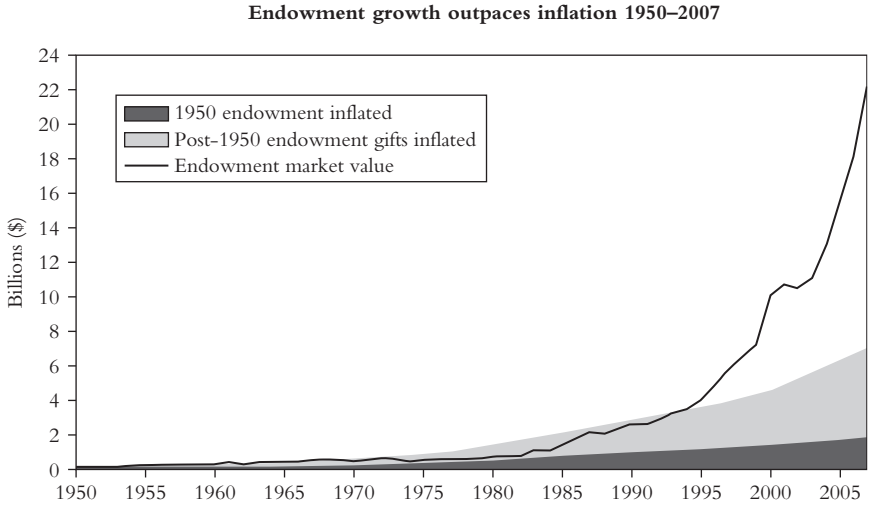


Figure 1.2 Yale Endowment vs. Inflation, 1950–2007, Fiscal Year Ending June 30th
SOURCE: Yale 2007 endowment report.

Figure 1.3 details an example of how the Yale endowment proceeds are spent. Yale endowment spending has grown from 12% of the operational budget in 1990 ($86 million) to 33% today ($684 million). If you think that is impressive, almost *half* of Princeton University's operating budget is funded from its endowment.

How Not to Run an Endowment

Harvard, Yale, and Princeton highlight the contributions a strong endowment can make to a university. To illustrate how poor management of endowment assets can hinder a university, here are a few examples of unwise decision making.

In the early 1970s, the University of Rochester had the third largest endowment after Harvard University and the University of Texas. Due to poor returns (including losing 40% in one year), it now ranks 39th. High on the list of unfortunate decisions were large allocations to stocks of local companies like Kodak and

How Not to Run an Endowment (*Continued*)

Xerox. The stocks performed poorly, and the school had to massively downsize its faculty and academic programs in the mid-1990s. (One of the top mistakes that individual investors make is investing all of their money in a local company or an employer's stock. You could get rich, but the risk will be very high—just ask former Enron and Bear Stearns employees.)

The risk in placing the entire endowment portfolio in a concentrated investment is also evident at Emory University, otherwise known as Coke University. We bet you can guess what stock it held almost all of its assets in.

Boston University is another example of excessive risk taking and conflicts of interest. BU had a venture capital subsidiary that invested in 1979 in the private biotech company Seragen, which was founded by scientists affiliated with BU. BU invested over $100 million in Seragen from 1979 until 1997. To contextualize the size of this single investment, the entire BU endowment in 1979 was only $142 million (in 1976 it was only $31 million). Seragen had an initial public offering in 1992, and by late 1997 the $100 million invested by BU was worth only about $4 million. However, by this time the endowment had grown to over $400 million, so while the loss was painful, it was not catastrophic. After overcoming poor performance in the equity bear market from 2000–2003, the endowment has recovered with over $1 billion in assets (Lerner, 2007).

The concentration question is often more acute in the foundation space where many of the assets are typically in the stock of the company that made the foundation possible. The Packard Foundation held nearly 90% of its assets in Hewlett-Packard stock. At the peak of the equity bull market the Packard Foundation was worth over $15 billion, but declined by two-thirds to $5 billion by 2003 and increased to around $6.5 billion at the end of 2007.

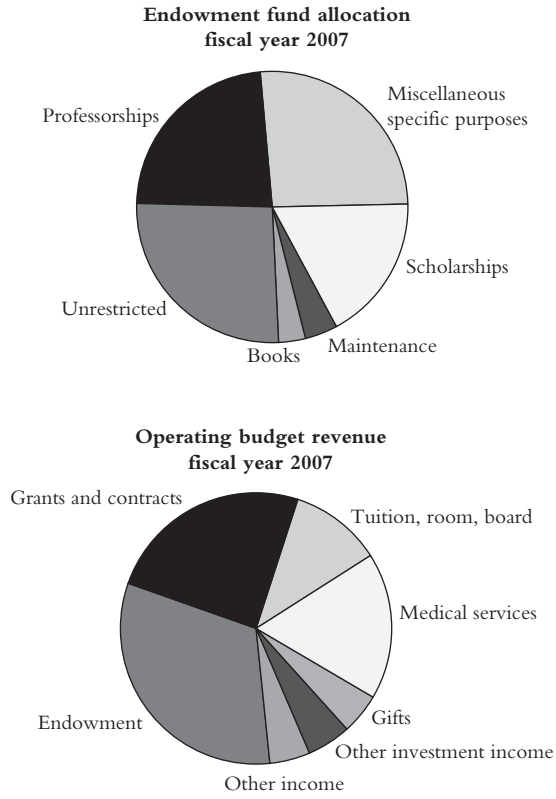


Figure 1.3 Yale Endowment Contribution to Operating Budget
SOURCE: 2007 Yale endowment report.

Size Matters . . .

The U.S. endowments manage a lot of money (Table 1.1). The endowments that manage more than $1 billion—what we refer to as the Super Endowments—manage a collective $293 billion.[4] While the 76 Super Endowments make up about 10% of the total 785 endowments, the Super Endowments represent over 70% of all the assets under management.

[4]We will also refer to the "dollar-weighted endowments" as "Super Endowments" as they are very similar. The categories for "average endowment" and "equal-weighted endowment" will be used interchangeably.

Table 1.1 Endowment Assets by Size

Endowment Assets	Number of Institutions	Percent of Total Institutions	Total Dollars (billions)	Percent of Total Dollars	Endowment per FTE Student
Greater than $1 Billion	76	9.7%	$293.3	71.3%	$149,986
$500 Million to $1 Billion	65	8.3	45.8	11.1	45,384
$100 Million to $500 Million	232	29.6	54.1	13.2	27,337
$50 Million to $100 Million	156	19.9	11.3	2.7	11,639
$25 Million to $50 Million	126	16.1	4.7	1.1	6,682
Less than $25 Million	130	16.6	1.9	0.5	3,011
Full Sample	**785**	**100.0%**	**$411.2**	**100.0%**	**$56,766**

Source: 2007 NACUBO Endowment Study.

The two largest endowments at the end of 2008 were Harvard with $36.5 billion and Yale with $22.8 billion.

You may be thinking $36 billion is *a lot* of money, but keep in mind that the biggest pension fund, the California Public Employees' Retirement System (CalPERS), manages over $250 billion. The largest mutual fund, the Vanguard 500 Index fund, manages over $120 billion, and both Fidelity and Barclays Global have over $1.5 *trillion* under management.

The average size of an endowment was about $100 million in 1992 versus over $500 million today. Table 1.2 is a list of the top 20 endowments by size for the end of the 2007 endowment fiscal year (usually June 30th).[5] The 2008 NACUBO update was not available at the time of publication.

[5]A note to U.K. readers: Start donating to your alma maters! Only Cambridge and Oxford would rank in the top 20 biggest endowments, and then less than 15th. No other U.K. university would fall in the top 150. As an acknowledgment of the importance of the endowment investing office, Yale's David Swensen is now a consultant to Cambridge and both endowments hired their first chief investment officers this past year.

Table 1.2 Top 20 Endowments by Size

Rank	Institution	State	2007 Endowment Funds ($000)
1	Harvard University	MA	$34,634,906
2	Yale University	CT	22,530,200
3	Stanford University	CA	17,164,836
4	Princeton University	NJ	15,787,200
5	University of Texas system	TX	15,613,672
6	MIT	MA	9,980,410
7	Columbia University	NY	7,149,803
8	University of Michigan	MI	7,089,830
9	University of Pennsylvania	PA	6,635,187
10	Texas A&M system	TX	6,590,300
11	Northwestern University	IL	6,503,292
12	University of California	CA	6,439,436
13	University of Chicago	IL	6,204,189
14	University of Notre Dame	IN	5,976,973
15	Duke University	NC	5,910,280
16	Washington University	MO	5,567,843
17	Emory University	GA	5,561,743
18	Cornell University	NY	5,424,733
19	Rice University	TX	4,669,544
20	University of Virginia	VA	4,370,209

Source: 2007 NACUBO Endowment Study.

The average endowment has about $57,000 of assets per student. Compare that figure with the average of $150,000 for the Super Endowments (and over $400,000 for the private Super Endowments), and you can easily see why the schools with larger endowments have a competitive advantage. Princeton has the highest endowment per student ratio for undergraduate schools overall with over $2 million per student. Virginia Military Institute has the highest for public undergraduate schools with $312,000 per student, and The Rockefeller University has the highest for graduate schools with an astonishing $8 million per student.

Grinnell College, a small college in Iowa, now boasts the third largest endowment among liberal arts colleges, and it is in the top 10 overall for endowment assets per student. Grinnell has none other than Warren Buffett to thank—he is a lifetime trustee and advised the endowment to buy a small TV station in Dayton, Ohio for $12.9 million in 1976. Eight years later the endowment sold the station for $50 million, effectively doubling the size of the endowment. Another brilliant move for Grinnell was an early investment in Intel (Intel co-founder Robert Noyce is a Grinnell alum).

. . . and So Does Performance

Now that we have established that the endowments manage a lot of money, how do they perform as a group? Table 1.3 details the 1- to 10-year performance for the Super Endowments versus the average endowment (equal weighted). Over the past 10 years the Super Endowments have returned more than the smaller endowments, 11.1% per year versus 8.4% for the average endowment. Also included in the table are indexes for U.S. stocks (S&P 500), bonds (Lehman Aggregate), inflation (CPI-U), and university inflation (HEPI).[6]

Table 1.3 Rates of Return by Endowment Size

Investment Pool Assets	1-year	3-year	5-year	10-year
Number of Endowments	726	683	636	499
Super Endowments	21.5%	16.8%	14.4%	11.7%
Average Endowment	17.2	12.4	11.1	8.6
S&P 500	20.6	11.7	10.7	7.1
Lehman Bond Aggregate	6.1	4.0	4.5	6.0
CPI-U	2.7	3.2	3.0	2.8
HEPI	3.4	4.0	3.9	3.9

Source: 2007 NACUBO Endowment Study.

[6]CPI-U is a proxy for inflation (data are seasonally adjusted). HEPI is the Higher Education Price Index, an inflation index designed specifically for higher education. It measures the average relative level of prices in a fixed basket of goods and services purchased by colleges and universities each year through current fund educational and general expenditures, excluding research.

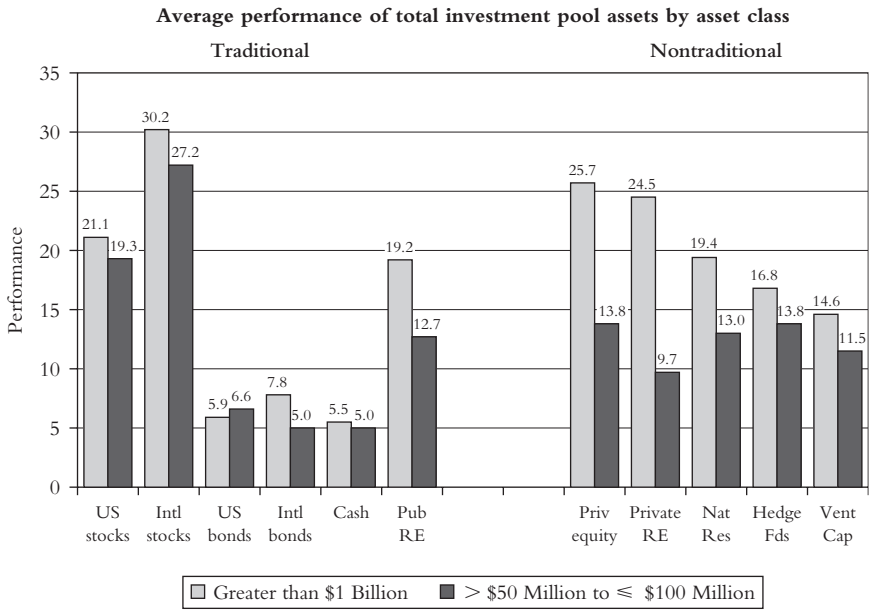
Table 1.4 Endowment Returns by Year and Size for 2000–2007

	2007	2006	2005	2004	2003	2002	2001	2000
Super Endowments	21.5%	15.3%	13.9%	17.4%	4.7%	−4.2%	−2.7%	23.8%
Average Endowment	17.2	10.7	9.3	15.1	3.0	−6.0	−3.6	13.0

Source: 2007 NACUBO Endowment Study.

Not only do the Super Endowments outperform, but they do so consistently every year. Table 1.4 shows that the Super Endowments have outperformed the average endowment every year since 2000.

Figure 1.4 shows how the Super Endowments consistently outperform in every asset class as well. Granted, the large endowments have achieved this advantage partially because of their strong returns, so



Note: Rates of return are equal-weighted within each investment pool size category.

Figure 1.4 Endowment Returns by Asset Class and Size, Fiscal Year Ending June 30th

Source: 2007 NACUBO Endowment Study.

there is a bit of the chicken and egg effect. However, because the big endowments outperform every year and in every asset class, there must be more to the story.

So far we have determined that big is better, but why? Figure 1.5 shows the average asset allocation for the Super Endowments and the average endowment. The target asset allocation for an endowment is referred to as the Policy Portfolio. The salient conclusion is that compared with the smaller endowments, the Super Endowments have:

- Fewer stocks (equities).
- Fewer bonds (fixed income).

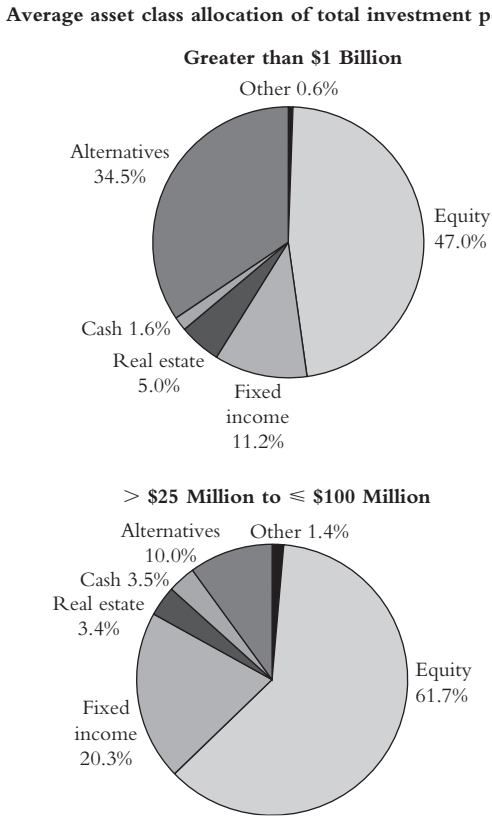


Figure 1.5 Endowment Asset Allocations by Size
SOURCE: 2007 NACUBO Endowment Study. Commodities, oil and gas partnerships, and timber are included in the alternatives allocation.

Table 1.5 Changes in Endowment Asset Allocations over Time

Asset Class	1998 Allocation	2007 Allocation	Percent Change
Equity	63.5%	57.6%	−9.3%
Fixed Income	25.6	18.6	−27.3
Real Estate	2.1	3.5	66.7
Cash	4.3	3.5	−18.6
Hedge Funds	2.8	10.6	278.6
Private Equity	0.4	2.3	475.0
Venture Capital	0.7	0.9	28.6
Natural Resources	0.2	1.6	700.0
Other	0.4	1.4	250.0

Source: 2007 NACUBO Endowment Study.

- More real assets (real estate, timber, and commodities).
- More alternatives (hedge funds, private equity, and venture capital).

The trend of all endowments from a traditional allocation toward a more unconventional portfolio has happened over time, and can be seen in Table 1.5 as endowments have decreased their allocation in stocks and bonds while increasing their allocations to real assets and alternatives. Much of this shift has occurred as a response to the great success of the Super Endowments. It is difficult for the smaller endowments to hire and pay for an investing staff, and many have found that outsourcing their management to an investment firm like Investure, Morgan Creek, or Makena Capital makes sense.

Active Management over Passive

So far we have found that the large endowments perform better and they have less traditional portfolios. The Super Endowments are also more active in the management of their funds than smaller endowments. The term active management refers to security selection and market timing rather than a buy-and-hold indexing approach. An academic paper has shown that the more active endowments

perform better, and that their active security selection skills—not asset allocation—is the most important factor in determining the *relative* performance between endowments (Brown, 2007).[7] The Super Endowments actively manage almost all of their investments at approximately 95%.

We will examine the methods the Super Endowments utilize to actively manage their portfolios in the upcoming chapters.

The Super Endowments also have a few advantages versus the smaller ones:

- **Pricing advantage**—If an endowment is considering allocating a large chunk of cash to an outside fund, the endowment will likely have leverage in negotiating down external management fees.
- **Loyal alumni**—Many alumni remain loyal to their alma mater. The managers who go on to manage top tier funds may offer favorable terms or keep their funds open to their alma mater's endowment when closed to normal investors. Long-standing relationships guarantee a "seat at the table."
- **Dedicated staff**—Even though their salaries are less than what the endowment managers and analysts would make in the hedge fund industry, the Super Endowments are large enough to employ a staff dedicated to managing the endowment, a luxury the small endowments do not have.
- **Relationships**—The Super Endowments have had dedicated investment offices operating for decades. The relationships and industry knowledge that have been developed over the years are important sources of excess return.

In short, the Super Endowments have several advantages over their small endowment counterparts, including superior active management, access to better internal and external management talent, pricing leverage, and other common advantages of scale. While the majority of

[7]This finding is consistent with evidence on pension and mutual funds, which finds that passive asset allocation is the most important determinant of the level and variation of endowment returns over time, but it is the active management that is the most important factor in determining a fund's *relative* standing within the group. (Brinson, Hood, and Beebower (1986), and Ibbotson and Kaplan (2000)).

the Ivy League universities have similar Policy Portfolio allocations, we will focus on the two largest as case studies in the next two chapters.

Summary

- Endowment assets under management are large and growing.
- Endowments have several advantages over the investing public: They are tax-exempt, have long-term time horizons, and have few investment restrictions.
- A large and strongly performing endowment gives the school a huge competitive advantage, and contributes substantial amounts to the school's operating budget.
- Poor management of the endowment can be detrimental to the operations and survival of a university.
- The biggest endowments, known as the Super Endowments, perform better than the smaller endowments, and do so year in and year out in every asset class.
- The Super Endowments employ a less traditional asset allocation—more real assets and alternatives, and fewer U.S. stocks and bonds.
- The Super Endowments utilize their active asset management capabilities (market timing and security selection), relationships, and pricing leverage to outperform the smaller endowments.