

2004

The Yale Endowment



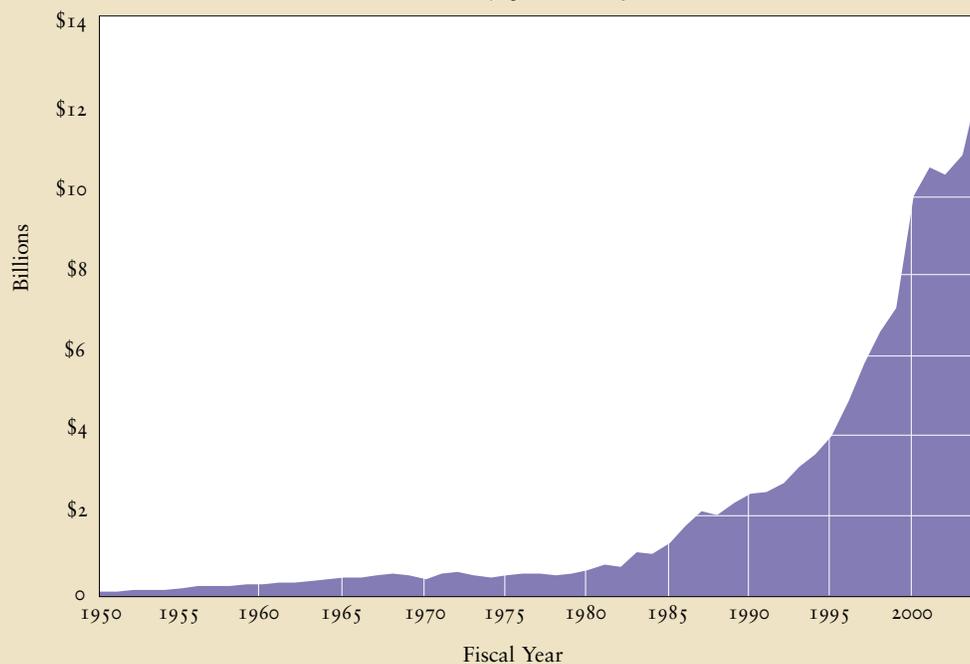
## Endowment Highlights

	Fiscal Year				
	2004	2003	2002	2001	2000
Market Value (in millions)	\$12,747.2	\$11,034.6	\$10,523.6	\$10,725.1	\$10,084.9
Return	19.4%	8.8%	0.7%	9.2%	41.0%
Spending (in millions)	\$ 502.0	\$ 470.1	\$ 409.3	\$ 337.5	\$ 280.8
Operating Budget Revenues (in millions)	1,630.8	1,553.7	1,466.6	1,352.9	1,263.5
Endowment Percentage	30.8%	30.3%	27.9%	24.9%	22.2%

### Asset Allocation (as of June 30)

Domestic Equity	14.8%	14.9%	15.4%	15.5%	14.2%
Absolute Return	26.1	25.1	26.5	22.9	19.5
Foreign Equity	14.8	14.6	12.8	10.6	9.0
Private Equity	14.5	14.9	14.4	18.2	25.0
Real Assets	18.8	20.9	20.5	16.8	14.9
Fixed Income	7.4	7.4	10.0	9.8	9.4
Cash	3.5	2.1	0.3	6.2	8.1

Endowment Market Value 1950–2004



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*Front cover:*  
A window in Sterling Memorial Library  
with a view of the Selin Courtyard

*Right:*  
Evening view of the Yale campus, facing west



## Introduction

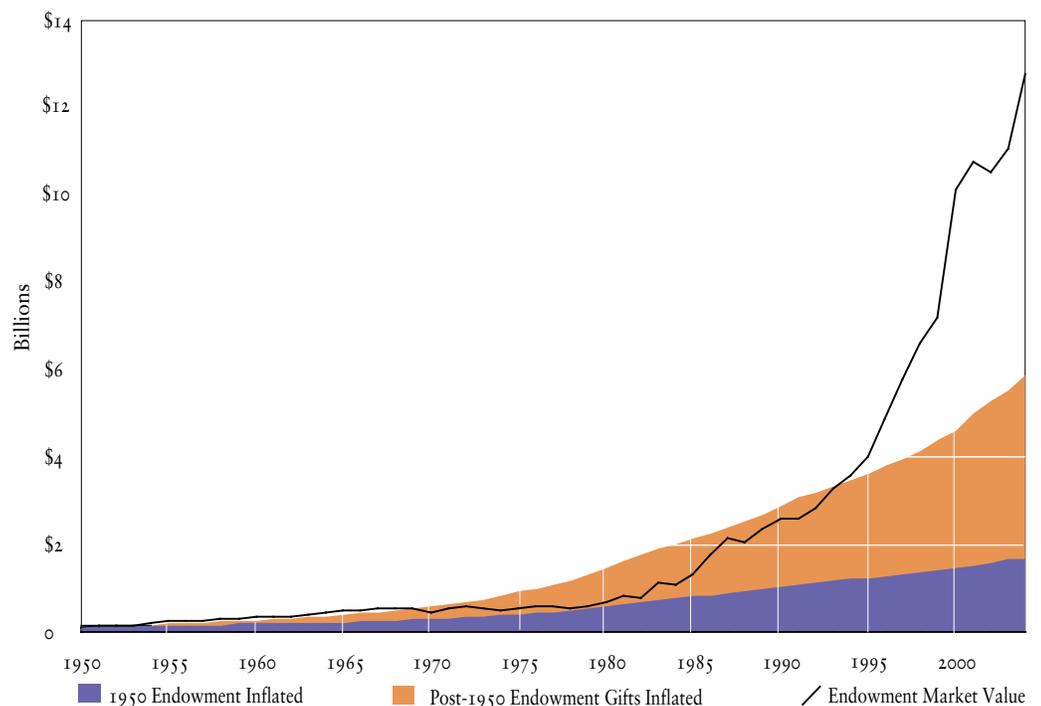
# I

Yale's Endowment produced extraordinarily strong results in fiscal year 2004, generating returns of 19.4 percent and producing dollar gains of \$2.1 billion. Every asset class, with the exception of bonds, contributed double-digit gains over the course of the year. Once again, Yale benefited from the Endowment's equity orientation, broad diversification, and active management.

Over the past ten years, the Endowment grew from \$3.5 billion to \$12.7 billion. With annual net investment returns of 16.8 percent, the Endowment's performance exceeded its benchmarks and outpaced institutional fund indices. The Yale Endowment's results over the past two decades are no less impressive, as investment returns of 16.1 percent per annum produced a 2004 Endowment value of more than ten times that of 1984. Yale's long-term record resulted from disciplined and diversified asset allocation policies, superior active management results, and strong capital market returns.

Spending from Endowment grew during the last decade from \$132 million to \$502 million, an annual growth rate of over 14 percent. On a relative basis, Endowment contributions expanded from 14 percent of total revenues in fiscal 1994 to 31 percent in fiscal 2004. Next year, spending will approximate \$562 million, or 32 percent of projected revenues. During the decade Yale's spending and investment policies provided handsome levels of cash flow to the operating budget for current scholars while preserving Endowment purchasing power for future generations.

Endowment Growth Outpaces Inflation 1950–2004



# 2

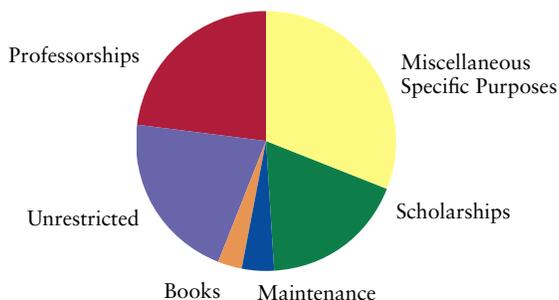
Totaling \$12.7 billion on June 30, 2004, the Yale Endowment is an investment pool composed of thousands of funds with a variety of designated purposes and restrictions. Approximately four-fifths of funds constitute true endowment, gifts restricted by donors to provide long-term funding for designated purposes. The remaining one-fifth represent quasi-endowment, monies which the Yale Corporation chooses to invest and treat as endowment.

Donors frequently specify a particular purpose for gifts, creating endowments to fund professorships, teaching, and lectureships (23 percent), scholarships, fellowships, and prizes (18 percent), maintenance (4 percent), books (3 percent), and miscellaneous specific purposes (31 percent). The remaining funds (21 percent) are unrestricted. Twenty-seven percent of the Endowment benefits the overall University, with remaining funds focused on specific units including the Faculty of Arts and Sciences (38 percent), the professional schools (21 percent), the library (8 percent), and other entities (6 percent).

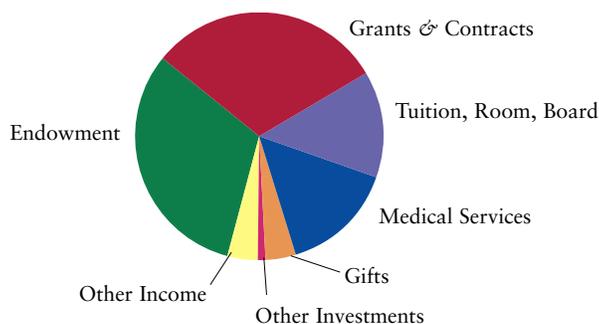
Although distinct in purpose or restriction, Endowment funds are commingled in an investment pool and tracked with unit accounting much like a large mutual fund. Endowment gifts of cash, securities, or property are valued and exchanged for units that represent a claim on a portion of the whole investment portfolio.

In fiscal 2004 the Endowment provided \$502 million, or 31 percent, of the University's \$1,631 million current fund income. Other major sources of revenues were grants and contracts of \$491 million (30 percent), medical services of \$250 million (15 percent), net tuition, room, and board of \$216 million (13 percent), gifts of \$76 million (5 percent), other investment income of \$21 million (1 percent), and other income of \$75 million (5 percent).

Endowment Fund Allocation  
Fiscal Year 2004



Operating Budget Revenue  
Fiscal Year 2004



# 3

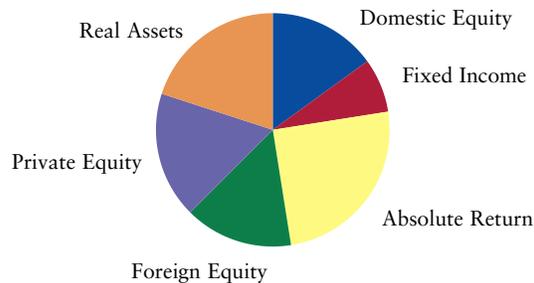
Yale’s portfolio is structured using a combination of academic theory and informed market judgment. The theoretical framework relies on mean-variance analysis, an approach developed by Nobel laureates James Tobin and Harry Markowitz. In fact, both Tobin and Markowitz conducted work on this important portfolio management tool at Yale’s Cowles Foundation. Using statistical techniques to combine expected returns, variances, and covariances of investment assets, Yale employs mean-variance analysis to estimate expected risk and return profiles of various asset allocation alternatives and to test the sensitivity of the results to changes in input assumptions.

Because investment management involves as much art as science, qualitative considerations play an extremely important role in portfolio decisions. The definition of an asset class is quite subjective, requiring precise distinctions where none exist. Returns and correlations are difficult to forecast. Historical data provide a guide, but must be modified to recognize structural changes and compensate for anomalous periods. Finally, quantitative measures have difficulty incorporating factors such as market liquidity or the influence of significant, low-probability events.

The combination of quantitative analysis and market judgment employed by Yale produces the following portfolio:

Asset Class	June 2004	Current Target
Domestic Equity	14.8%	15.0%
Fixed Income	7.4	7.5
Absolute Return	26.1	25.0
Foreign Equity	14.8	15.0
Private Equity	14.5	17.5
Real Assets	18.8	20.0
Cash	3.5	0.0

Yale Endowment Target Asset Allocation  
June 30, 2004



The target mix of assets produces an expected real (after inflation) long-term growth rate of 6.2 percent with a risk (standard deviation of returns) of 11.7 percent. Primarily because of shortfalls relative to the target in private equity holdings, the actual allocation produces a portfolio expected to grow at 5.8 percent with a risk of 11.0 percent. The University's measure of inflation is based on a basket of goods and services specific to higher education that tends to exceed the Consumer Price Index by approximately one percent.

The need to provide resources for current operations as well as preserve purchasing power of assets dictates investing for high returns, causing the Endowment to be biased toward equity. In addition, the University's vulnerability to inflation further directs the Endowment away from fixed income and toward equity instruments. Hence, 92.5 percent of the Endowment is targeted for investment in some form of equity, through holdings of domestic and international securities, real assets, and private equity.

Over the past two decades, Yale has reduced dramatically the Endowment's dependence on domestic marketable securities by reallocating assets to nontraditional asset classes. In 1984, more than three-quarters of the Endowment was committed to U.S. stocks, bonds, and cash. Today, target allocations call for 22.5 percent in domestic marketable securities, while the diversifying assets of foreign equity, private equity, absolute return strategies, and real assets dominate the Endowment, representing 77.5 percent of the target portfolio.

The heavy allocation to nontraditional asset classes stems from their return potential and diversifying power. Today's actual and target portfolios have significantly higher expected returns and lower volatility than the 1984 portfolio. Alternative assets, by their very nature, tend to be less efficiently priced than traditional marketable securities, providing an opportunity to exploit market inefficiencies through active management. The Endowment's long time horizon is well suited to exploiting illiquid, less efficient markets such as venture capital, leveraged buyouts, oil and gas, timber, and real estate.

## Asset Class Characteristics

Yale's six asset classes are defined by differences in their expected response to economic conditions, such as price inflation or changes in interest rates, and are weighted in the Endowment portfolio by considering risk-adjusted returns and correlations. The University combines these assets in such a way as to provide the highest expected return for a given level of risk.

### *Domestic Equity*

Finance theory predicts that equity holdings will generate returns superior to those of less risky assets such as bonds and cash. The predominant asset class in most endowments and other U.S. institutional portfolios, domestic equities represent a large, liquid, and heavily researched market. While the broad group of educational institutions invest 36.8 percent of assets in domestic equities, Yale's target allocation to this asset class is only 15.0 percent. The domestic equity portfolio has an expected real return of 6.0 percent with a standard deviation of 20.0 percent. The Wilshire 5000 Index serves as the portfolio benchmark.

Despite recognizing that the U.S. equity market is highly efficient, Yale elects to pursue active management strategies, aspiring to outperform market indices by a few percentage points annually. Because superior stock selection provides the most consistent and reliable opportunity for generating excess returns, the University favors managers with exceptional bottom-up fundamental research capabilities. Managers searching for out-of-favor securities often find stocks that are cheap in relation to current fundamental measures such as book value, earnings, or cash flow. Yale's managers tend to emphasize small-capitalization stocks, as they are less efficiently priced and offer greater opportunities to add value through active management. Recognizing the difficulty of outperforming the market on a consistent basis, Yale searches for managers with high integrity, sound investment philosophies, strong track records, superior organizations, and sustainable competitive advantages.

### *Fixed Income*

Fixed income assets generate stable flows of income, providing greater certainty of nominal cash flow than any other Endowment asset class. The bond portfolio has a low covariance with other asset classes, and provides a hedge against financial accidents or periods of unanticipated deflation. While educational institutions maintain a substantial allocation to fixed income instruments and cash, amounting to 20.7 percent, Yale's target allocation to fixed income constitutes only 7.5 percent of the Endowment. Bonds have an expected real return of 2.0 percent with risk of 10.0 percent. The Lehman Brothers U.S. Treasury Index serves as the portfolio benchmark.

Yale is not particularly attracted to fixed income assets, as they have the lowest historical and expected returns of the six asset classes that make up the Endowment. In addition, the government bond market is arguably the most efficiently priced asset class, offering few opportunities to add significant value through active management. Based on skepticism of active fixed income strategies and belief in the efficacy of a highly structured approach to bond portfolio management, the Investments Office chooses to manage Endowment bonds internally. In spite of an aversion to market timing strategies, credit risk, and call options, Yale manages to add value consistently in its management of the bond portfolio. Willingness to accept illiquidity leads to superior investment results without impairing the portfolio protection characteristics of high-quality fixed income.

## *Foreign Equity*

Investments in overseas markets give the Endowment exposure to the global economy, providing diversification along with opportunities to earn above-market returns through active management. Emerging markets, with their rapidly growing economies, are particularly intriguing, causing Yale to target one-half of its foreign portfolio to developing countries. Yale's foreign equity target allocation of 15.0 percent stands slightly below the overall educational institution allocation of 15.6 percent. Expected real returns for emerging equities are 8.0 percent with a risk level of 25.0 percent, while developed equities are expected to return 6.0 percent with risk of 20.0 percent. The portfolio is measured against a composite benchmark of 50 percent developed markets, measured by the Morgan Stanley Capital International (MSCI) Europe, Australasia, and Far East Index, and 50 percent emerging markets, measured by the MSCI Emerging Markets Index.

Yale's investment approach to foreign equities emphasizes active management designed to uncover attractive opportunities and exploit market inefficiencies. As in the domestic equity portfolio, Yale favors managers with strong bottom-up fundamental research capabilities. Capital allocation to individual managers takes into consideration the country allocation of the foreign equity portfolio, the degree of confidence Yale possesses in a manager, and the appropriate asset size for a particular strategy. In addition, Yale attempts to exploit compelling undervaluations in countries, sectors, and styles by allocating additional capital and, perhaps, by hiring new managers to take advantage of the opportunities.

# History of Yale's Spending Policy

Until the mid 1960s, the University limited the Endowment's annual contribution to the operating budget to investment yield—the interest, dividend, and rental income generated by the Endowment. In 1967, recognizing that simply spending yield could result in too high or too low a spending rate and could bias investment decisions toward securities with high yield but low appreciation potential, Yale adopted a "total return" spending policy. Under the total return policy, the University supported operations with current yield plus a prudent portion of the appreciation of Endowment market value.

Concurrent with the decision to employ a total return concept, Yale instituted a formal method, called the University Equation, to calculate the total amount that could responsibly be spent from the Endowment. The method set spending in a given year by adjusting the previous year's spending by the difference between the University's long-term investment return (measured over the prior twenty-year period) and the current percentage of the Endowment being spent. Higher long-term returns would lead to higher

annual spending, while lower long-term returns would lead to reduced spending. Unfortunately, the University Equation did not adjust rapidly enough to changes in Endowment market value. As a result, in the 1970s, when the rate of inflation increased and market returns dropped, the University spent an unsustainably high portion of the Endowment to support current operations.

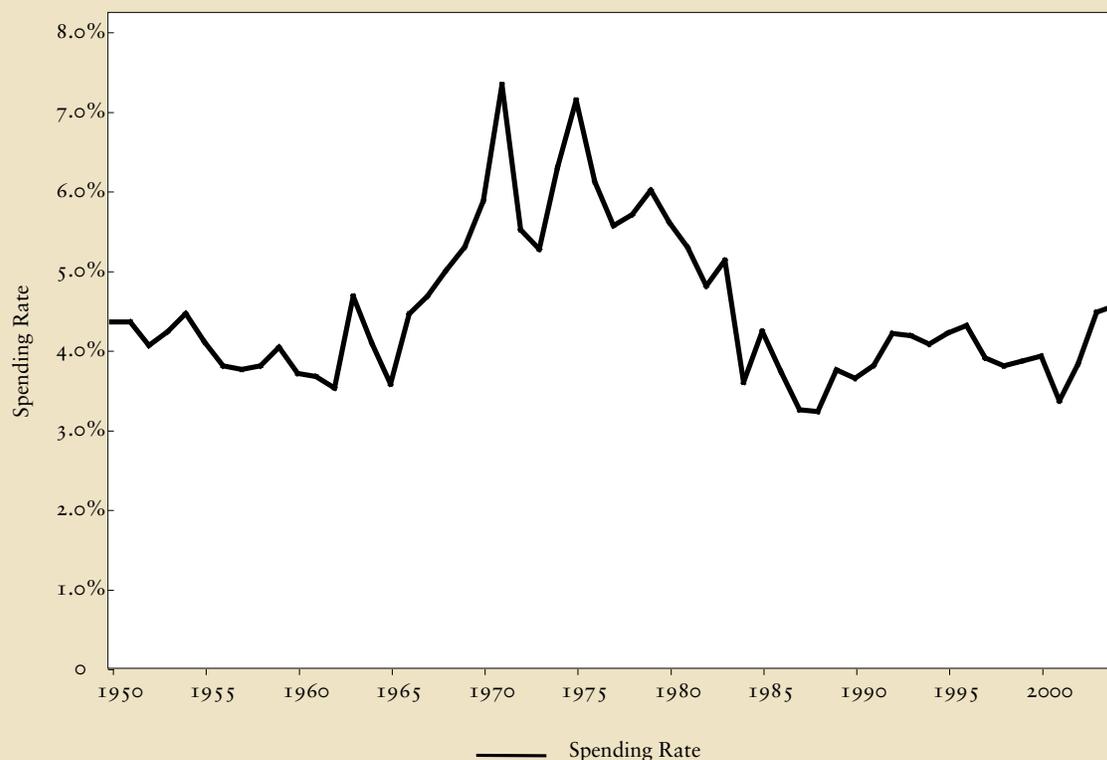
In 1977, recognizing that the rate of spending was eroding the real value of the Endowment, the Yale Corporation voted to cap spending at the existing level (adjusted for inflation) until the spending rate was brought in line with the expected real (after-inflation) return from the Endowment. The Endowment's expected real return was taken to be 4.5 percent, consistent with historical experience.

In 1982, upon bringing the spending level to an appropriate level, the Corporation adopted a spending rule that attempted to produce substantial income for current scholars and preserve purchasing power of the Endowment for future generations. Under the new rule, Endowment spending amounted to the weighted

average of 70 percent of the previous year's spending, adjusted for inflation, plus 30 percent of the targeted long-term spending rate of 4.5 percent applied to the previous year's Endowment's market value. The 70 percent weight on prior year spending promised budgetary stability, while the 30 percent weight on current market value provided purchasing power sensitivity.

Since 1982, the spending rule has been adjusted three times. In 1992 the Corporation authorized an increase in the long-term spending rate from 4.5 percent to 4.75 percent. In 1995, Yale adopted a further increase in the target rate to 5.0 percent. In 2004 the Corporation increased the spending rate to 5.25 percent and changed the smoothing rule from 70/30 to 80/20. The increase in spending rate resulted from improvement in Endowment portfolio characteristics. The change in weight assigned to budgetary stability stemmed from recognition that increased budgetary dependence on Endowment income required greater stability in flows of Endowment income to support operations.

Yale's Endowment Spending Rate 1950-2004



## *Absolute Return*

In July 1990, Yale became the first institutional investor to pursue absolute return strategies as a distinct asset class, beginning with a target allocation of 15 percent. Designed to provide significant diversification to the Endowment, absolute return investments seek to generate high long-term real returns by exploiting market inefficiencies. Approximately half of the portfolio is dedicated to event-driven strategies, which rely on a very specific corporate event, such as a merger, spin-off, or bankruptcy restructuring, to achieve a target price. The other half of the portfolio contains value-driven strategies, which involve hedged positions in assets or securities that diverge from underlying economic value. Today, the absolute return portfolio is targeted to be 25.0 percent of the Endowment. In contrast, the educational institutions allocate only 15.1 percent of assets to such strategies. Absolute return strategies are expected to generate real returns of 6.0 percent with risk levels of 10.0 percent for event-driven strategies and 15.0 percent for value-driven strategies.

Unlike traditional marketable securities, absolute return investments provide returns largely independent of overall market moves. Over the past ten years, the portfolio exceeded expectations, returning 12.2 percent per year with essentially no correlation to domestic stock and bond markets.

An important attribute of Yale's investment strategy concerns the alignment of interests between investors and investment managers. To that end, absolute return accounts are structured with performance-related incentive fees, hurdle rates, and clawback provisions. In addition, managers invest a significant portion of their net worth alongside Yale, enabling the University to avoid many of the pitfalls of the principal-agent relationship.

## *Private Equity*

Private equity offers extremely attractive long-term risk-adjusted return characteristics, stemming from the University's strong stable of value-added managers that exploit market inefficiencies. Yale's private equity investments include participations in venture capital and leveraged buyout partnerships. The University's target allocation to private equity of 17.5 percent and its actual allocation of 14.5 percent both far exceed the 5.5 percent actual allocation of educational institutions. In aggregate, the private equity portfolio is expected to generate real returns of 11.4 percent with risk of 29 percent.

Yale's private equity program, one of the first of its kind, is regarded as among the best in the institutional investment community. The University is frequently cited as a role model by other investors pursuing this asset class. Since inception, private equity investments have generated a 30.6 percent annualized return to the University. The success of Yale's program led to a 1995 Harvard Business School case study—"Yale University Investments Office"—by Professors Josh Lerner and Jay Light. The popular case study was updated in 1997, 2000, and 2003.

Yale's private equity assets concentrate on partnerships with firms that emphasize a value-added approach to investing. Such firms work closely with portfolio companies to create fundamentally more valuable entities, relying only secondarily on financial engineering to generate returns. Investments are made with an eye toward long-term relationships—generally, a commitment is expected to be the first of several—and toward the close alignment of the interests of general and limited partners. Yale avoids funds sponsored by financial institutions because of the conflicts of interest and staff instability inherent in such situations.

## *Real Assets*

Real estate, oil and gas, and timberland share common characteristics: sensitivity to inflationary forces, high and visible current cash flow, and opportunity to exploit inefficiencies. Real asset investments provide attractive return prospects, excellent portfolio diversification, and a hedge against unanticipated inflation. Yale's 20.0 percent long-term policy allocation significantly exceeds the educational institution commitment of 6.3 percent. Expected real returns are 6.0 percent with risk of 15.0 percent.

The real assets portfolio plays a meaningful role in the Endowment as a powerful diversifying tool and a generator of strong returns. Real assets provide relative stability to the Endowment during periods of public market turmoil, at the price of an inability to keep pace during bull markets. Pricing inefficiencies in the asset class and opportunities to add value allow superior managers to generate excess returns over a market cycle. Since inception in 1978 the portfolio has returned 15.5 percent per annum.

The illiquid nature of real assets combined with the expensive and time-consuming process of completing transactions creates a high hurdle for casual investors. Real assets provide talented investment groups with the opportunity to generate strong returns through savvy acquisitions and managerial expertise. A critical component of Yale's investment strategy is to create strong, long-term partnerships between the Investments Office and its investment managers. In the last decade Yale played a critical role in the development and growth of more than a dozen organizations involved in the management of real assets.

## *Asset Allocations*

	Yale University	Educational Institutions
Domestic Equity	14.8%	36.8%
Fixed Income	7.4	17.5
Foreign Equity	14.8	15.6
Absolute Return	26.1	15.1
Private Equity	14.5	5.5
Real Assets	18.8	6.3
Cash	3.5	3.2

Data as of June 30, 2004.

# Monte Carlo Simulations

To assess the efficacy of various combinations of investment and spending policies, the Investments Office developed a model that uses simulations to evaluate the impact of a range of policy combinations on Yale's Endowment and operating budget. Using "Monte Carlo" techniques, the model employs random numbers to produce portfolio return patterns consistent with assumptions regarding asset class expected risk and return characteristics. The resulting path of simulated returns determines Endowment values and spending levels, based on the modeled investment and spending policies. Thousands of simulations provide a robust picture of the potential effectiveness of any given policy combination.

The two criteria used to analyze the results of various policies are: 1) the likelihood of a significant, sustained intermediate-term drop in Endowment support for the operating budget; and 2) the likelihood of a dramatic long-term reduction in Endowment purchasing power. A significant decline in support for the operating budget is defined as a real reduction of 10 percent over a five-year period. A dramatic decline in Endowment purchasing power is defined as a 50 percent drop over a fifty-year horizon.

The Monte Carlo simulations represent a substantial extension of (and improvement over) conventional mean-variance optimization techniques. Mean-variance analysis simply identifies a set of efficient portfolios, namely portfolios with the highest return for a given level of risk or portfolios with the lowest risk for a given level of return. The mean-variance framework provides no intuitive mechanism for portfolio choice and fails to incorporate the impact of spending policy. In contrast, by extending the analysis with Monte Carlo simulations, decision makers enjoy the opportunity to assess the trade-off between easily understood criteria: stable operating budget support (probability of losing 10 percent of Endowment spending) and purchasing power preservation (probability of losing 50 percent of Endowment purchasing power).

Monte Carlo simulations applied to the Endowment's current asset allocation and spending policies indicate a 22 percent chance of real spending falling by more than 10 percent over a five-year span. Although the Endowment's real growth rate is expected to outpace the 5.25 percent target spending rate, a roughly 10 percent chance exists that the purchasing power of the Endowment would drop by more than 50 percent after fifty years.

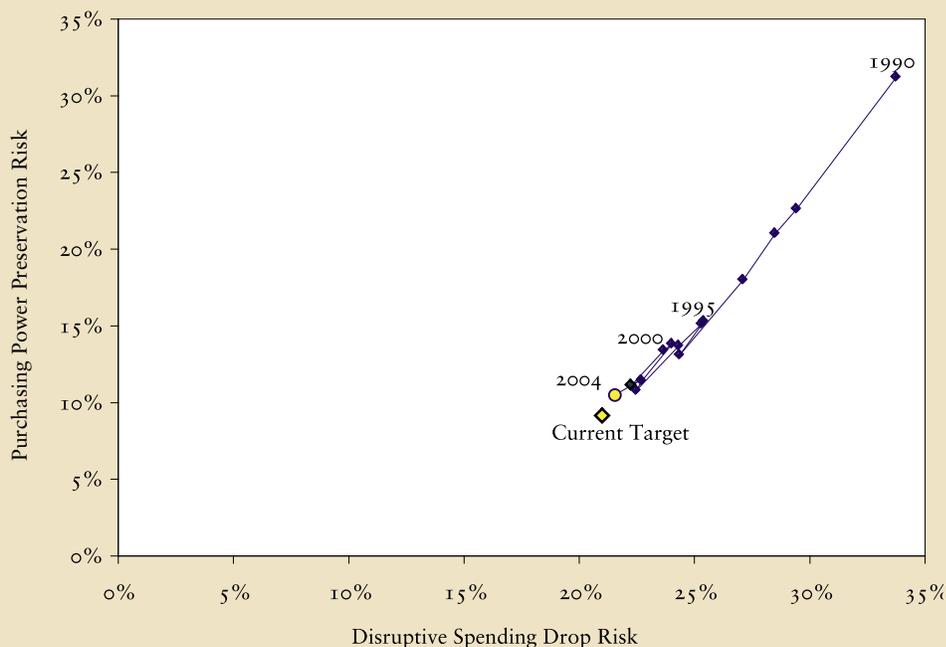
Using the metrics of stable operating budget support and purchasing power preservation, the Endowment demonstrated substantial improvement over the past fifteen years. As Yale allocated more of the Endowment to the alternative asset classes of absolute return, private equity, and real assets, risks plummeted for both a significant decline in spending and a dramatic reduction in Endowment purchasing power. In 1990, when alternative asset classes accounted for only 15 percent of the Endowment, Yale faced a 34 percent chance of real spending dropping by 10 percent over five years and a 31 percent chance of real Endowment values diminishing by 50 percent over fifty years. By 2000, when absolute return, private equity, and real assets accounted for nearly 60 percent of the

Endowment, disruptive spending drop risk fell to 24 percent and purchasing power impairment risk declined to 14 percent.

Investment and spending policies of other educational institutions provide more disturbing results. Using Monte Carlo simulations and the typical endowment spending rule (5 percent target rate applied to a three-year moving average of endowment value), the Investments Office estimates the average endowment faces a 37 percent chance of a 10 percent spending drop over five years and runs a 32 percent chance of losing half of its purchasing power over a fifty-year period.

After fifty years, the median ending purchasing power of the average endowment amounts to only 73 percent of its beginning purchasing power. In general, educational institutions spend at rates far too high to be supported by undiversified portfolios that contain too many low-return assets. Yale's simulations show relatively significant probabilities of circumstances that would be traumatic for educational institutions, highlighting the tenuous balance between protecting Endowment purchasing power and maintaining a steady and substantial stream of spending.

## Yale's Changes in Asset Allocation Dramatically Reduce Spending Volatility and Risk to Purchasing Power



## 2004 Change in Spending Policy

Yale changes spending policy infrequently. Since the concept of budgetary balance acquires real meaning only with a well-defined, faithfully implemented spending rule, changes in the rule should be few and far between. Yet Yale must ensure that its spending policy strikes an appropriate balance between the twin goals of stable, substantial support for the operating budget and maintenance of the Endowment's purchasing power. As a result, spending policy must be reviewed in light of structural changes in the Endowment's investment portfolio and in the operating budget's reliance on Endowment support.

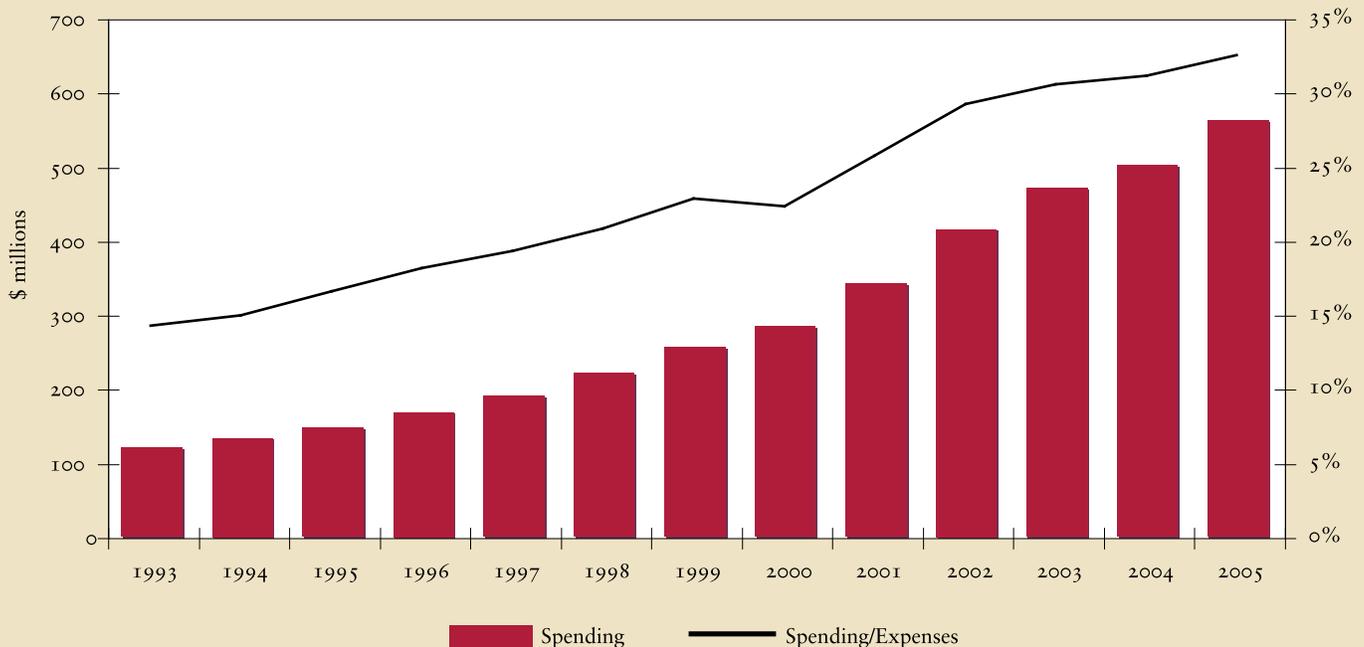
In the twenty-two years following the inception of Yale's modern spending rule in 1982, the University changed its spending policy three times. In 1992 the Yale Corporation authorized an increase in the long-term spending rate from 4.5 percent to 4.75 percent. In 1995 the spending rate was increased again, this time to 5.0 percent. These spending rate increases were supported by changes in the Endowment's investment portfolio. Starting in the early 1980s with a traditional portfolio that consisted primarily of domestic stocks and bonds,

Yale transformed the Endowment into a well-diversified, equity-oriented portfolio with superior risk and return characteristics. As the portfolio improved, Yale increased its payout rate accordingly.

In October 2004 the Yale Corporation authorized the third change in spending policy, voting to increase the spending rate from 5.0 percent to 5.25 percent and to change the smoothing rule from 70/30 (i.e., a 70 percent weight on last year's actual Endowment spending and 30 percent weight on the current year's target Endowment spending) to 80/20. Like the spending rate increases in 1992 and 1995, the 2004 spending rate increase stemmed from changes in the Endowment's asset allocation that boosted expected return and lowered expected volatility. In fact, Yale's portfolio attributes improved sufficiently between 1995 and 2004 so that the 2004 Endowment with the higher spending rate exhibited approximately the same risk of purchasing power degradation as did the 1995 Endowment with the lower spending rate.

Along with the modification in the spending rate, Yale changed the smoothing rule to reflect the growing importance of Endowment spending to the operating budget. In fiscal 1986, spending from Endowment amounted to a mere 10 percent of revenues. By 2004, spending amounted to approximately 31 percent of University revenues. While the actual impact of a drop in Endowment value depends on the recent history of returns, all else equal, a decline today would have more than three times the impact on the budget as would a comparable decline in 1986. By increasing the weighting on last year's spending, Yale increases the spending rule's ability to act as a shock absorber and dampens the volatility of the flow of funds to the operating budget.

Endowment Supports 32 Percent of the Fiscal 2005 Budget



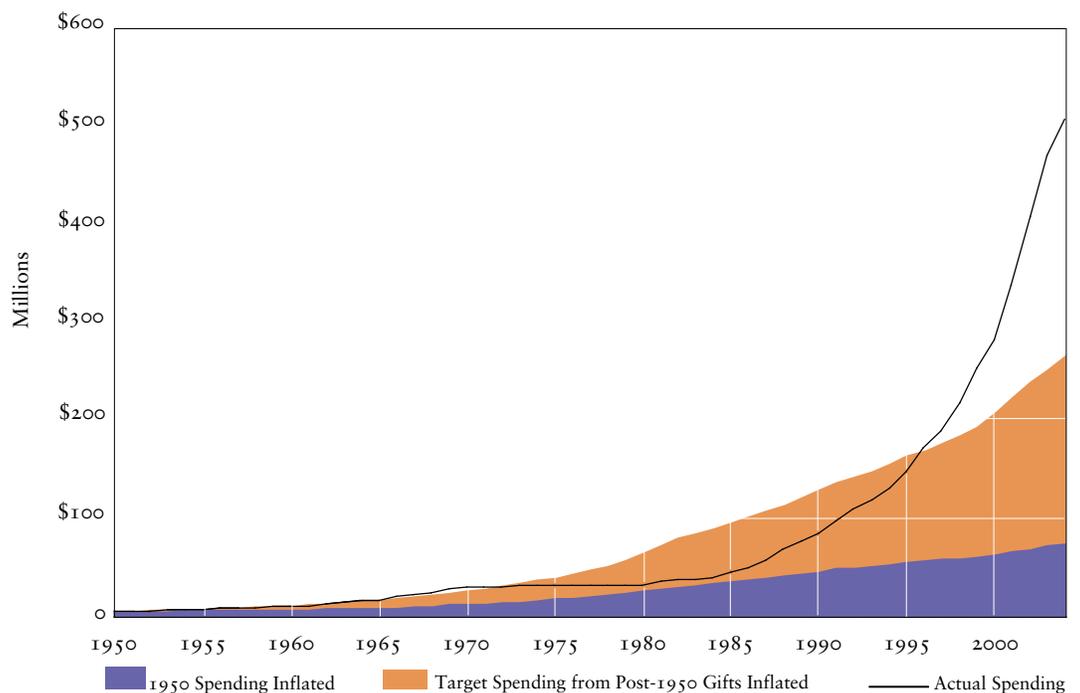
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The spending rule is at the heart of fiscal discipline for an endowed institution. Spending policies define an institution’s compromise between the conflicting goals of providing substantial, sustainable support for current operations and preserving purchasing power of Endowment assets. The spending rule must be clearly defined and consistently applied for the concept of budget balance to have meaning.

Yale’s policy is designed to meet two competing objectives. The first goal is to release substantial current income to the operating budget in a stable stream, since large fluctuations in revenues are difficult to accommodate through changes in University activities or programs. The second goal is to protect the value of Endowment assets against inflation, allowing programs to be supported at today’s level far into the future.

Yale’s spending rule attempts to achieve these two objectives by using a long-term spending rate of 5.25 percent combined with a smoothing rule that adjusts spending gradually to changes in Endowment market value. The amount released under the spending rule is based on a weighted average of prior spending adjusted for inflation (80 percent weight) and the amount that would have been spent using 5.25 percent of current Endowment market value (20 percent weight).

Spending Growth vs. Inflation 1950–2004



The spending rule has two implications. First, by incorporating the previous year's spending the rule eliminates large fluctuations, enabling the University to plan for its operating budget needs. Over the last twenty years, annual changes in spending have been less than a third as volatile as annual changes in Endowment value. Second, by adjusting spending toward the long-term rate of 5.25 percent of Endowment, the rule ensures that spending levels will be sensitive to fluctuating Endowment levels, providing stability in long-term purchasing power.

Spending from the Endowment increased at a hearty pace during the past decade despite the conservative nature of Yale's spending policy, with distributions rising from \$132 million in fiscal 1994 to \$502 million in fiscal 2004. Consequently, Endowment spending plays an ever-greater role in the budget, having risen from 14 percent of expenditures in 1994 to 31 percent in 2004.



Tower in Timothy Dwight College

## Investment Performance

# 5

### *Performance by Asset Class*

Yale has produced excellent investment returns. Over the ten-year period ending June 30, 2004, the Endowment earned an annualized 16.8 percent return, net of fees, placing it in the top one percent of large institutional investors. Endowment outperformance is attributable to sound asset allocation policy and superior active management.

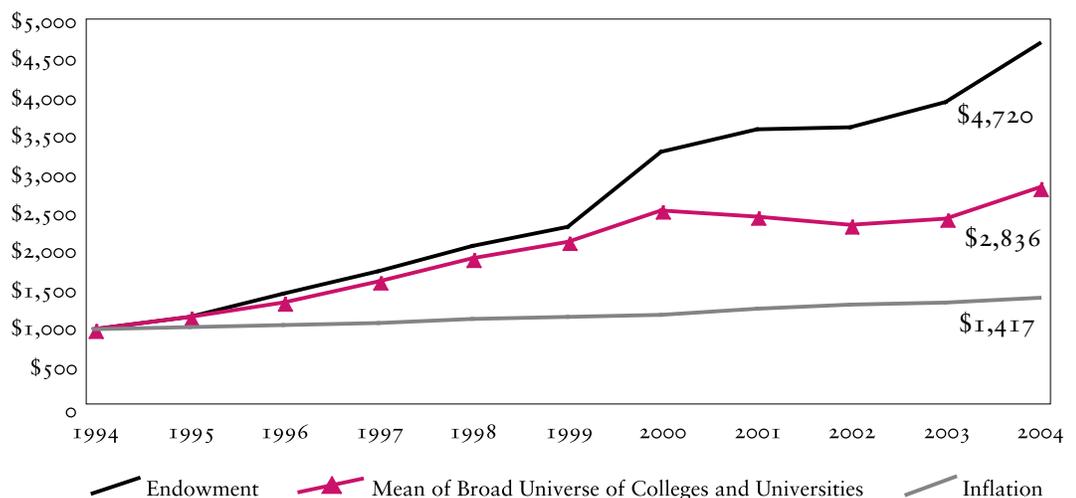
Yale's long-term superior performance relative to its peers and benchmarks created substantial wealth for the University. Over the ten years ending June 30, 2004, Yale added \$5.4 billion relative to its composite benchmark and an estimated \$5.6 billion relative to the average return of a broad universe of college and university endowments.

Yale's long-term asset class performance continues to be outstanding. In the past ten years every asset class posted superior returns, in almost every case significantly outperforming benchmark levels.

For the decade ending June 30, 2004, the domestic equity portfolio returned an annualized 17.0 percent, outperforming the Wilshire 5000 by 5.5 percent per year and the Russell Median Manager return by 5.3 percent per year. Yale's active managers have added value to benchmark returns primarily through stock selection.

Yale's internally managed fixed income portfolio earned an annualized 7.8 percent over the past decade, exceeding the Lehman Brothers U.S. Treasury Index by 0.7 percent per year and the Russell Median Manager return by 0.6 percent per year. By making astute security selection decisions and accepting illiquidity, the Endowment benefited from excess returns without incurring material credit or option risk.

Over the past decade, the absolute return portfolio produced an annualized 12.2 percent, exceeding its passive benchmark of the One-Year Constant Maturity Treasury plus 6 percent by 1.2 percent per year and matching its active benchmark of hedge fund manager



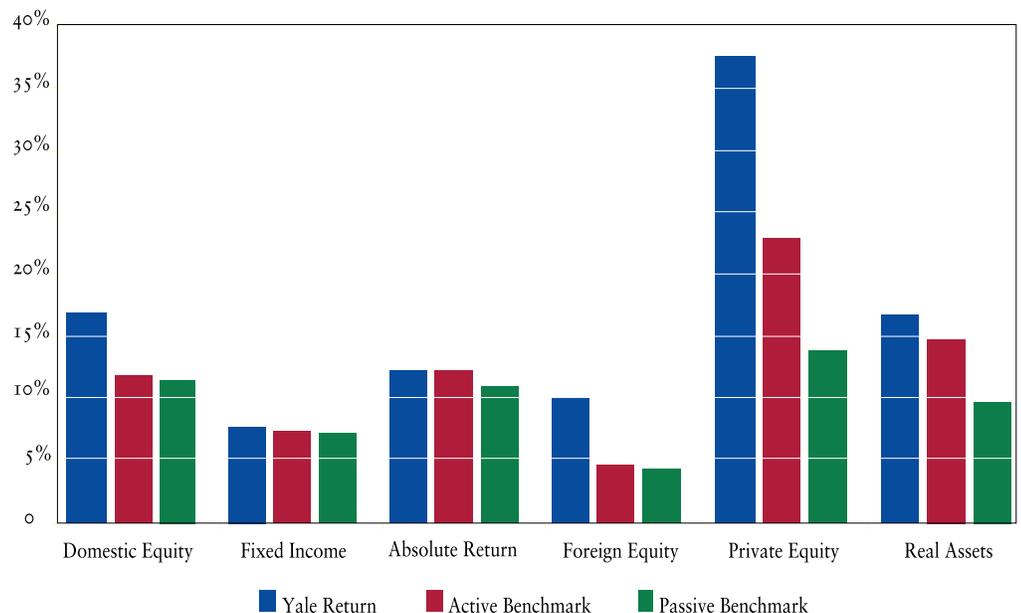
returns. For the ten-year period, absolute return results exhibited essentially no correlation to traditional marketable securities.

The foreign equity portfolio generated an annual return of 10.1 percent over the ten-year period, outperforming its composite benchmark by 5.9 percent per year and the Russell Median Manager return by 5.4 percent per year. The portfolio's excess return is due to effective security selection and country allocation by active managers.

Results from Yale's non-marketable assets demonstrate the value of superior active management. Private equity earned 37.6 percent annually over the last ten years, outperforming the return of a pool of private equity managers compiled by Cambridge Associates by 14.7 percent per year. Since inception in 1973, the private equity program has earned an astounding 30.6 percent per annum.

Real assets generated a 16.8 percent annualized return over the ten-year period, outperforming an active benchmark of real assets manager returns by 2.1 percent per year. Yale's outperformance is due to the successful exploitation of market inefficiencies and timely pursuit of contrarian investment strategies.

### Asset Class Returns Relative to Benchmarks 1994–2004



**Active Benchmarks**

*Domestic Equity:* Frank Russell Median Manager, U.S. Equity  
*Fixed Income:* Frank Russell Median Manager, Fixed Income  
*Absolute Return:* CSFB Composite  
*Foreign Equity:* Frank Russell Median Manager Composite, Foreign Equity  
*Private Equity:* Cambridge Associates Composite  
*Real Assets:* NCREIF and Cambridge Associates Composite

**Passive Benchmarks**

*Domestic Equity:* Wilshire 5000  
*Fixed Income:* Lehman Brothers U.S. Treasury Index  
*Absolute Return:* 1-year Constant Maturity Treasury +6%  
*Foreign Equity:* 50% MSCI EAFE Index, 50% MSCI EM Index  
*Private Equity:* University Inflation +10%  
*Real Assets:* University Inflation +6%

# Yale Corporation Investment Committee

The Yale Investment Committee plays an integral part in the management of the Endowment. With ultimate authority over the University's investment policy, the eleven-member committee consists of the President of the University, members of the Yale Corporation, and leaders from the corporate, financial, and non-profit sectors. Yale's Investment Committee also plays a critical role in spending policy deliberations.

Investment Committee meetings follow a regular cycle. In the fall the Committee reviews the previous fiscal year's investment results, at levels ranging from the overall Endowment to

individual asset classes to specific investment managers. In the winter and spring the Committee focuses attention on a single asset class or a particular investment opportunity. In the summer the Committee engages in a review of the University's policy portfolio.

Since beginning its oversight of the Endowment in 1975, the Investment Committee has brought together remarkable men and women from various backgrounds, united in their support of the mission of the University. The diversity of the Committee serves as a source of strength in the management of the Endowment. Corporate executives, investment

managers, educators, and non-profit leaders provide disparate viewpoints and specialized knowledge that inform the decision-making process. Healthy debate and discussion set the stage for consensus decisions. As Hume noted, "Truth springs from argument amongst friends."

By challenging the Investments Office staff to operate at the highest level, the Investment Committee plays a critical role in Yale's investment process. A sounding board as well as an oversight body, the Investment Committee has been an important driver of the exemplary investment performance achieved by the University.



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## Management and Oversight

# 6

Since 1975, the Yale Corporation Investment Committee has been responsible for oversight of the Endowment, incorporating senior-level investment experience into portfolio policy formulation. The Investment Committee consists of at least three Fellows of the Corporation and other persons who have particular investment expertise. The Committee meets quarterly, at which time members review asset allocation policies, Endowment performance, and strategies proposed by Investments Office staff. The Committee approves guidelines for investment of the Endowment portfolio, specifying investment objectives, spending policy, and approaches for the investment of each asset category. Eleven individuals currently sit on the Committee.

### *Investment Committee*

Charles D. Ellis '59, Chairman  
*Former Managing Partner  
Greenwich Associates*

G. Leonard Baker '64  
*Managing Director  
Sutter Hill Ventures*

Joshua Bekenstein '80  
*Managing Director  
Bain Capital*

Roland W. Betts '68  
*Chairman  
Chelsea Piers Management*

James Leitner '75  
*President  
Falcon Investment Management*

Richard C. Levin '74 PH.D.  
*President  
Yale University*

Henry F. McCance '64  
*President  
Greylock Management*

Jane L. Mendillo '80, '84 MBA  
*Chief Investment Officer  
Wellesley College*

William I. Miller '78  
*Chairman  
Irwin Financial Corporation*

Theodore P. Shen '66  
*Former Chairman  
DLJ Capital Markets*

Douglas A. Warner III '68  
*Former Chairman of the Board  
J.P. Morgan Chase*

The Investments Office manages the Endowment and other University financial assets, and defines and implements the University's borrowing strategies. Headed by the Chief Investment Officer, the Office currently consists of sixteen professionals.

## *Investments Office*

David F. Swensen '80 PH.D.  
*Chief Investment Officer*

Randy Kim '98, '04 MBA  
*Senior Associate*

Dean J. Takahashi '80, '83 MPPM  
*Senior Director*

Robert F. Wallace '02  
*Senior Associate*

Seth D. Alexander '95  
*Director*

Celeste P. Benson  
*Senior Portfolio Manager*

Alexander C. Banker  
*Director*

Shuba V. Raghavan  
*Senior Research Associate*

Alan S. Forman  
*Director*

David B. Slifka '01  
*Senior Financial Analyst*

Timothy R. Sullivan '86  
*Director*

Jay L. Kang '02  
*Senior Financial Analyst*

Kenneth R. Miller '71  
*Associate General Counsel*

Daniel G. Kilpatrick '03  
*Financial Analyst*

Michael E. Finnerty  
*Associate Director*

Carrie A. Abildgaard  
*Financial Analyst*



Windows in Berkeley College

## Endowed Funds for Prizes

At University Commencement, hundreds of graduates come away with more than a coveted Yale diploma. To recognize exceptional performance in academics, athletics, community service, and other extracurricular fields of endeavor, Yale awards a vast array of prizes. The University bestows so many prizes, in fact, that it takes a series of ceremonies throughout Commencement weekend to confer them.

Yale's Endowment provides financial support for many of the awards, whether they take the form of a book, a stipend, cash, or a certificate. Endowed funds earmarked for specific awards have existed for nearly two centuries.

### Early Prizes and the Role of Oratory

In 1823, David C. DeForest of New Haven, one of Yale's most generous nineteenth-century donors, established a scholarship and a prize that still bear his name. Ranking as the longest-standing Yale award, the David C. DeForest Prize goes each year to the senior "who shall write and pronounce an English Oration in the best manner."

Despite the role of oratory and debating in U.S. presidential campaigns, none of the Yale-educated U.S. presidential candidates won the DeForest Prize. Instead, the best-known DeForest winners include: presidential advisers William P. Bundy (1939) and McGeorge Bundy (1940); Bay of Pigs negotiator Henry D. Harfield, Jr. (1934); and two Yale academics, H. Bradford Westerfield (1947), the Damon Wells Professor Emeritus of International



David C. DeForest



Justice Potter Stewart (standing, third from left), on the Supreme Court, 1962.



Henry J. TenEyck

Studies and Political Science, and Stephen Kellert (1985), the Tweedy/Ordway Professor of Social Ecology.

Prominent names populate the list of winners for another of Yale's early awards, created in 1843 by the Isaac H. Townsend Fund in honor of a Yale law professor. The Townsend Prize, bestowed for oratory, honored U.S. Supreme Court Justice Potter Stewart (1937), U.S. Senator David L. Boren of Oklahoma (1963), and U.S. Senator John F. Kerry of Massachusetts (1966).

An oratorical prize at the Law School, the John Fletcher Caskey Prize, lists among its winners U.S. Senator John C. Danforth (1963), civil rights leader and Chief Judge of the Third Circuit Court of Appeals A. Leon Higginbotham, Jr. (1952), and New York City Mayor John V. Lindsay (1948). Senator Arlen Specter won the

Law School's John Currier Gallagher Prize in 1956 for excellence in the preparation of cases. In 1941, Charles L. Black, Jr., the attorney who argued *Brown v. Board of Education* in 1954, was honored in the Gallagher Prize competition.

Attorney General Edwin Meese won the Thacher Memorial Prize in 1951-53 for "prowess in extemporaneous debate," as did Yale President Kingman Brewster (1941) and frequent prizewinners William P. Bundy (1939), McGeorge Bundy (1940), columnist and author William F. Buckley, Jr. (1948, 1949), John F. Kerry (1964-66), and author and columnist David Frum (1981).

Among several awards for oratory and debating, Senator Kerry won first place in the Henry J. TenEyck, B.A. 1879 Prize competition in 1965; this



Kingman Brewster

award, created by Members of the Kingsley Trust Association (Scroll and Key Society of Yale College), recognizes distinguished work by juniors.

Honorees include poet Stephen Vincent Benet (1918), William F. Buckley, Jr. (1949), and legal scholar and author Deborah Rhode (1973).

Former Senator Gary Hart took the Law School's Colby Townsend Memorial Prize in 1963 for "the best honors work done by a second-year student in the School of Law."

Recognizing distinction in public service, the Frank Miner Patterson Prize went in 1964 to U.S. Senator Joseph I. Lieberman.

### The Arts and Humanities

Yale awards more prizes in the arts and humanities than in any other category.

Attorney General John D. Ashcroft won the John Addison Porter Prize in American History in 1964 during his senior year at Yale. John E. Pepper, Jr., former CEO of Procter and Gamble,



John Addison Porter

now Yale Vice President for Finance and Administration, received the prize in 1960.

An interdepartmental honor, the John Addison Porter University Prize, rewards the "best work of scholarship—presented in such literary form as to make the product of general human interest." George W. Pierson, later a noted Yale historian, received the prize in 1933. Other winners include: distinguished drama critic and scholar Eric R. Bentley (1941); authors Hugh Kenner (1950) and Richard D. Ellmann (1947); noted critic and Sterling



Mary E. Miller

Professor of the Humanities Harold Bloom (1956); School of Management professor and author William H. Goetzmann (1957); and Sterling Professor of History Jonathan D. Spence (1965). The Porter Prize was established by the Kingsley Trust Association (Scroll and Key Society of Yale College).

The Donald Annis Prize, recognizing "that student who has made the best record in English and German during Freshman and Sophomore years," honored individuals who became well-known writers and scholars, including Yale History Professor George W. Pierson (1924–25), Yale College Dean Richard H. Brodhead (1967), and author and *New Yorker* magazine contributor Elizabeth R. Kolbert (1983).

Novelist Louis S. Auchincloss in 1937 won the Henry W. Scott Prize, which is awarded each year, in the form of a book, for excellence in modern languages (mainly French and German).

The John Hersey Prize, endowed in 1985 by students of the late author, goes "to a senior or junior for a body of journalistic work reflecting the spirit and ideals of John Hersey: engagement with moral and social issues, responsible reportage and consciousness of craftsmanship." Winners include David M. Halbfinger (1990) and Motoko Rich (1991), both *New York Times* reporters, and an author on current events, Jacob Weisberg (1985).

History of Art graduate students aspire to the Frances Blanshard Fellowship Prize for scholarly distinction. Winners include feminist author Naomi Wolf (1981), Vincent

Scully Professor of the History of Art Mary E. Miller (1981), and Holcombe T. Green Curator of American Paintings and Sculpture Helen A. Cooper (1986).

Since its inception in 1981, the Louis Sudler Prize in the Performing and Creative Arts recognized Yale students who have pursued active and successful artistic careers, from filmmaker Jennie M. Livingston (1983) to violinist Haldan Dai Tung Martinson (1994). The prize takes its name from Louis Sudler, B.A. 1925, who was a generous supporter of arts programs at the University. The Thorndike Oliver Acting Award recognized the achievements of well-known actors Walter S. (Stacy) Keach, Jr. (1964), Meryl Streep (1975), and Mark Lynn Baker (1979).

### Prizes in a Range of Disciplines

In the nineteenth century, Yale's prizes emphasized oratory. Since the early twentieth century, as the Yale curriculum expanded into new fields, so have the subjects for prizes.

The George Beckwith Medal, established with an endowed fund in 1926, commemorates the publisher of *Beckwith's Almanac* and recognizes the undergraduate most proficient in some branch of astronomy or mathematics. The 1981 prize was won by Charles E. Bailyn, the Thomas E. Donnelley Professor and Chair of the Yale Astronomy department.

For more than a century, Yale honored students for "excellence in biological and geological studies" by conferring the William R. Belknap Prize, established in 1872 by a graduate of the Sheffield Scientific School. The 1937 Belknap laureate, entrepreneur



Paul R. Krugman

and philanthropist Perry Richardson Bass, of Fort Worth, Texas, fathered four sons who also attended Yale. His gifts to the University include funding for the Nancy Lee and Perry R. Bass Center for Molecular and Structural Biology. The 1987 winners of the Belknap Prize included Miranda S. Fram, who became a prominent geologist at the University of California (Davis), and Daniel R. Feikin, an epidemiologist with the Centers for Disease Control, whose studies of SARS have attracted considerable attention.

The Charles Heber Dickerman Memorial Prize for the best senior essay in economics was awarded to Princeton economist and *New York Times*



Benjamin Scharps

columnist Paul R. Krugman (1974) and author and professor of management Jeffrey A. Rosensweig (1979). The prize also went to a series of non-economists, including sculptor Daniel J. Cline (1978), Harvard surgeon and transplant specialist Hugh D. Auchincloss, Jr. (1971), and Federal Judge Guido Calabresi (1953).

The Law School awards the Benjamin Scharps Prize to “a member of the third-year class for the most meritorious essay or research on some legal subject designated by the faculty, under prescribed regulations.” The list of winners includes Victor S. Navasky (1959), author and editor of *The Nation*, and David Boies (1966), an attorney noted for work ranging from the Microsoft antitrust lawsuit to *Bush v. Gore*.

The versatility of Yale students becomes apparent in the list of recipients of the Benjamin F. Barge

Mathematical Prize, whose ranks include Edward B. Rothstein (1970, 1971), the author and music critic of *The New York Times*. The prize, endowed by Benjamin F. Barge, a graduate of the class of 1857, has also been awarded to Robert S. Rubin (1950), former managing director of Smith Barney; robotics expert Hillel J. Chiel (1972); mathematician and author Jonathan D. Rogawski (1974); and video game creator Nathaniel Glasser (1982, 1983).

#### Prizes for High Scholarship or Character

The Alpheus Henry Snow Award ranks among the most important “prizes for high scholarship or character” that are awarded annually as a traditional part of Class Day ceremonies. Honoring Mr. Snow, B.A. 1879, the prize recognizes “the senior who, through the combination of intellectual achievement, character, and personality, shall be adjudged by the faculty to have done most for Yale by inspiring classmates with an admiration for scholarship.”

Winners of the Snow Award have gone on to distinguished careers in a variety of fields. A world-of-letters sampling includes: authors Francis Otto Matthiessen (1923), Jan G. Deutsch (1955), and Andre Schiffrin (1957); literary agent Arthur M. Klebanoff (1969); and *New Republic* editor Peter A. Beinart (1993). From government, the prize winners include presidential



McGeorge Bundy

advisers Eugene V. Rostow (1933) and McGeorge Bundy (1940) as well as N. Strobbridge (Strobe) Talbott III (1968), former deputy secretary of state, now president of the Brookings Institution. Snow laureates headed Columbia University Law School (Lance M. Liebman, 1962) and the New York Parks Commission (August Heckscher, 1936). Snow honoree Gaylord Donnelley (1931) was a conservationist and philanthropist affiliated with the Yale School of Forestry & Environmental Studies; Maynard Mack (1932) became a Yale faculty member and literary historian; John E. Ecklund, Jr. (1938) left his mark as the Yale



The McKim Prize recognizes a graduating senior or seniors majoring in political science, economics, history, or a related field, who have shown marked improvement in their academic standing in upperclass years and who have made a significant contribution in one or more activities outside the classroom. Adam Schemp, Annette Saunooke, and Allison Phinney shared the award at the 2003 Class Day ceremonies.

Treasurer in the 1960s and 1970s; and Cord Meyer, Jr. (1942) gained renown as a CIA operative and author.

The Hart Lyman Prize recognizes “a junior for character and achievement.” Kurt L. Schmoke, mayor of Baltimore and a Yale Corporation member in the 1990s, won the Lyman Award in 1970.



Kurt L. Schmoke

### Prize Winners and Yale’s Endowment

The annals of Yale student prize winners contain the names of several members of the Yale Corporation Investment Committee, past and present. Former Committee Chairman John Madden, who was Managing Partner of Brown Brothers Harriman and Company, had the distinction of winning two undergraduate prizes, the Alpheus Henry Snow Award in 1941 and the Hart Lyman Prize in 1940.

In 1956, H. Edward Woodsum received the Law School’s C. LaRue Munson Prize, which was endowed in 1921 by Mr. Munson, an 1875 graduate of the school, to recognize “excellence in the investigation, preparation, and (where permitted) presentation of cases.” The Isaac Townsend Prize was awarded in 1963 to former Investment Committee member and later U.S. Senator David Boren, and in 1959 to current Committee Chairman Charles D. Ellis.

Two other current Committee members received distinguished awards: G. Leonard Baker won the Benjamin F. Barge Mathematical Prize in 1961 and again in 1962, and Joshua Bekenstein



John Madden

received the F. Wilder Bellamy, Jr., Memorial Prize in 1979. Among staff members, Chief Investment Officer David F. Swensen was awarded a Berkeley Master’s Prize in 1980 and Robert F. Wallace received the E. Francis Riggs Memorial Prize in 1999 for outstanding performance in Special Courses in the Humanities for Freshmen.

Opposite: Architectural detail, Branford College

#### Sources

Much of the material in this publication is drawn from memoranda produced by the Investments Office for the Yale Corporation Investment Committee. Other material comes from Yale’s financial records, Reports of the Treasurer, and Reports of the President.

#### Pages 6–11

Educational institution asset allocations from Cambridge Associates.

#### Page 16

The Endowment’s annual return for the ten years ending June 30, 2004 ranks in the top one percent of institutional funds as measured by the SEI Large Plan Universe.

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Painting of David C. DeForest by Samuel F. B. Morse, Yale University Art Gallery, gift of Mrs. Pastora Jacoba DeForest Griffin

#### Page 22 (bottom right)

Photo of P. Krugman by Dan Deitch

Pages 21–23 (except where indicated above)  
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