

2019

The Yale Endowment



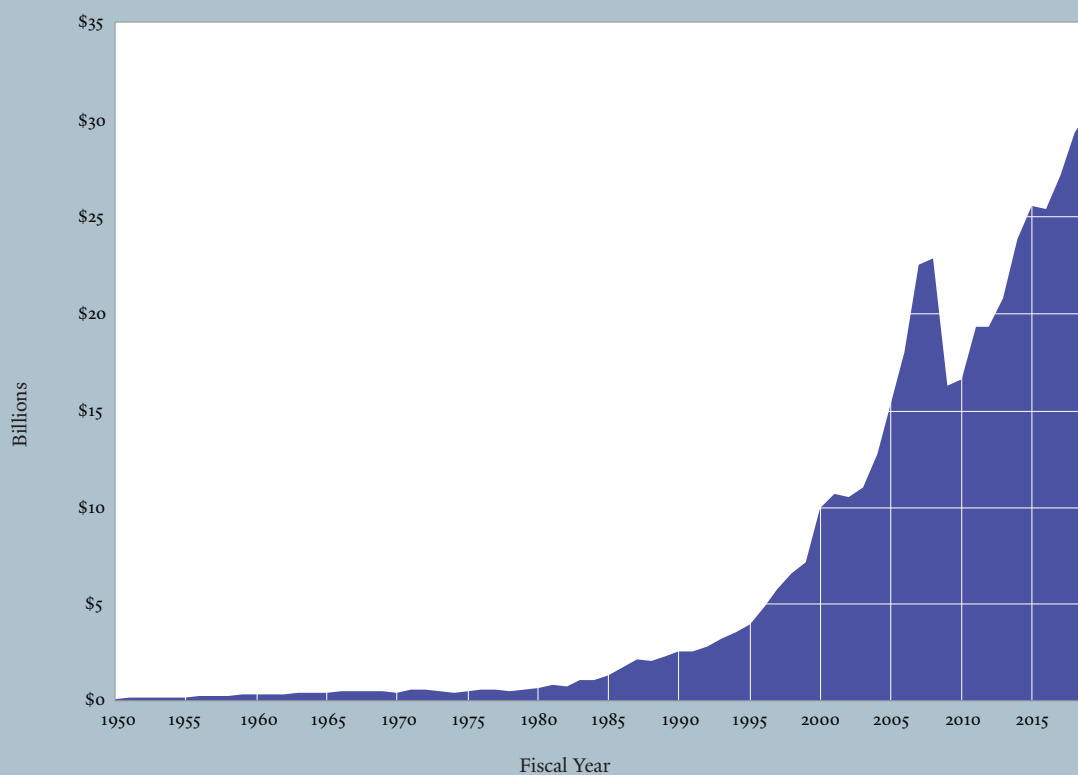
Endowment Highlights

Fiscal Year

	2019	2018	2017	2016	2015
Market Value (in millions)	\$30,314.8	\$29,351.1	\$27,176.1	\$25,408.6	\$25,572.1
Return	5.7%	12.3%	11.3%	3.4%	11.5%
Spending (in millions)	\$ 1,354.7	\$ 1,281.0	\$ 1,225.8	\$ 1,152.8	\$ 1,082.5
Operating Budget Revenues (in millions)	\$ 4,181.4	\$ 3,874.9	\$ 3,692.2	\$ 3,472.4	\$ 3,297.7
Endowment Percentage	32.4%	33.1%	33.2%	33.2%	32.8%

Asset Allocation (as of June 30)

Absolute Return	23.2%	26.1%	25.1%	22.1%	20.5%
Domestic Equity	2.7	3.5	3.9	4.0	3.9
Foreign Equity	13.7	15.3	15.2	14.9	14.7
Leveraged Buyouts	15.9	14.1	14.2	14.7	16.2
Natural Resources	4.9	7.0	7.8	7.9	6.7
Real Estate	10.1	10.3	10.9	13.0	14.0
Venture Capital	21.1	19.0	17.1	16.2	16.3
Cash & Fixed Income	8.4	4.7	5.8	7.2	7.7

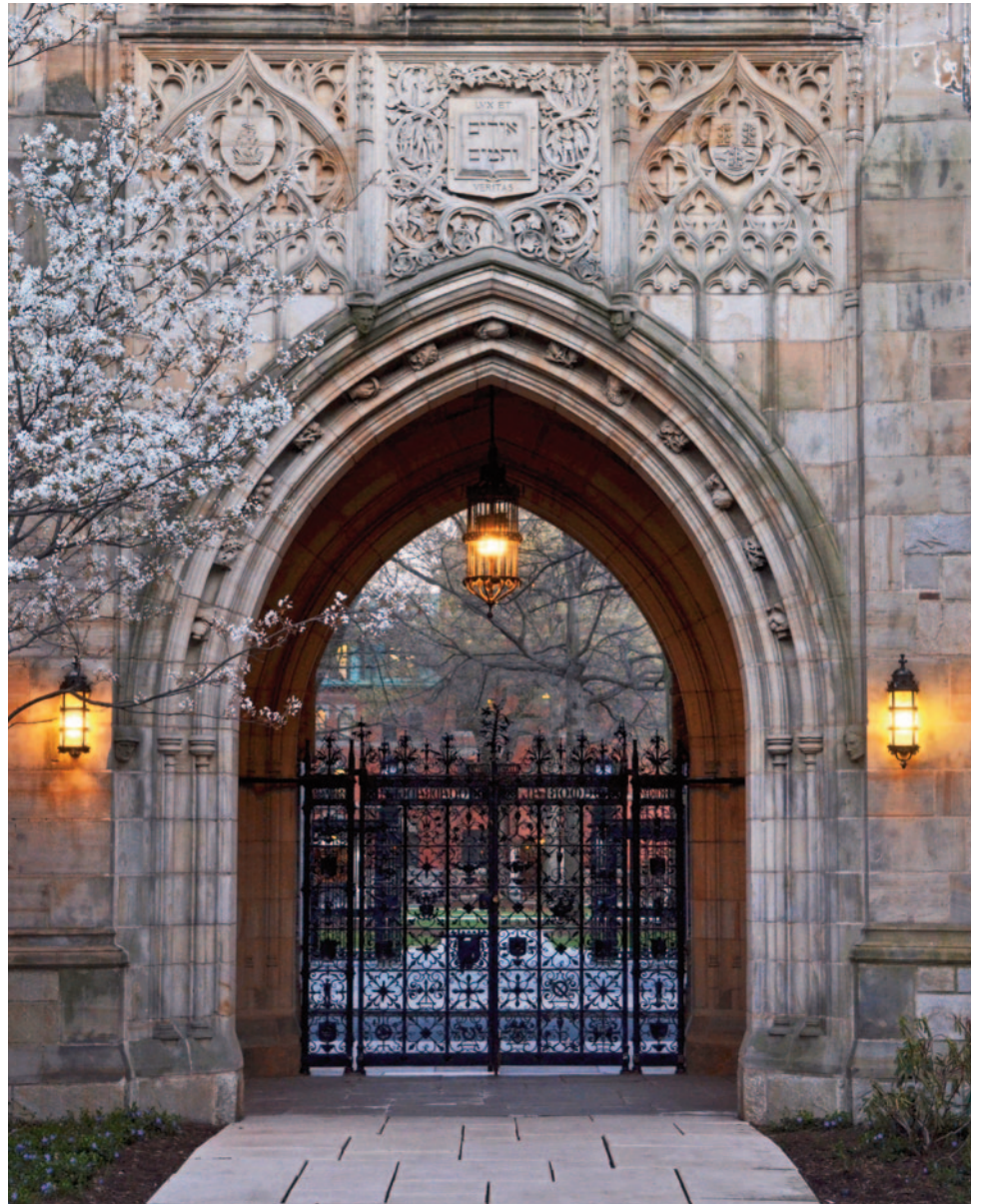


Contents

1.	Introduction	2
2.	The Yale Endowment	3
3.	Investment Policy	6
4.	Spending Policy	22
5.	Investment Performance	24
6.	Management and Oversight	27

Front cover:
Stairway in the Yale University Art Gallery's older wing, designed by Egerton Swartwout, B.A. 1891, and dating to 1926.

Right:
Harkness Memorial Gate, from inside Branford Court. Completed in 1922.



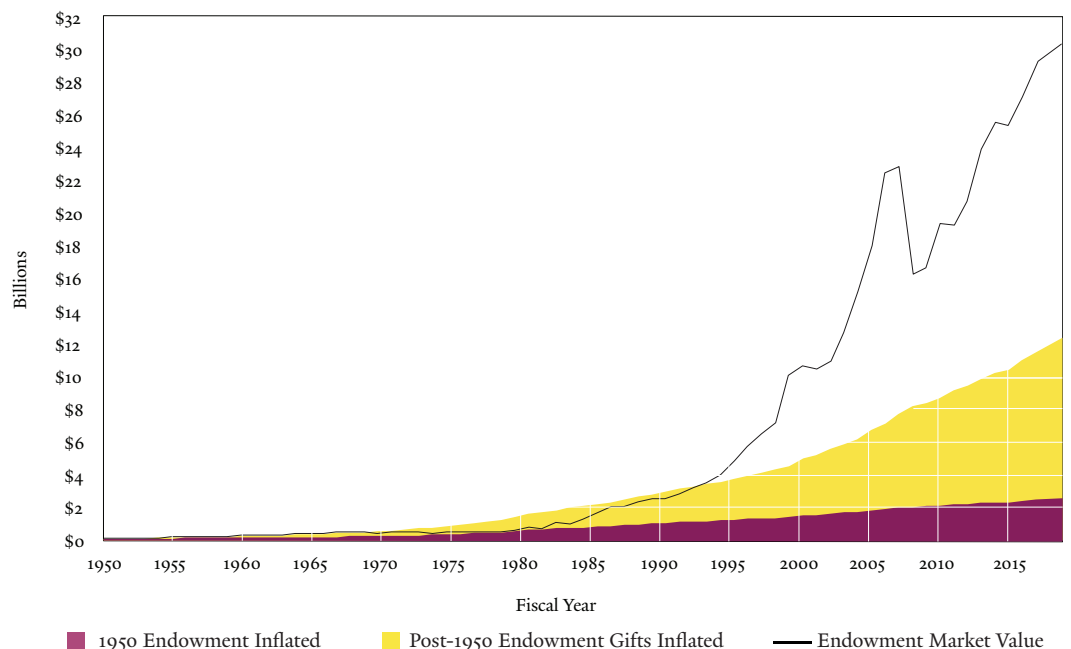
Introduction

1

Yale's Endowment generated a 5.7% return, net of fees, in fiscal 2019. Over the past ten years, the Endowment grew from \$16.3 billion to \$30.3 billion. With annual returns of 11.1% during the ten-year period, the Endowment's performance exceeded its benchmark and outpaced institutional fund indices. For four of the past ten years, Yale's ten-year record ranked first in the Cambridge Associates universe.

Spending from the Endowment grew during the last decade from \$1.2 billion to \$1.4 billion, an annual growth rate of 1.5%. Next year, spending will amount to \$1.4 billion, or 34% of projected revenues. Yale's spending and investment policies provide substantial levels of cash flow to the operating budget for current scholars, while preserving Endowment purchasing power for future generations.

Endowment Growth Outpaces Inflation 1950–2019



The Yale Endowment

2

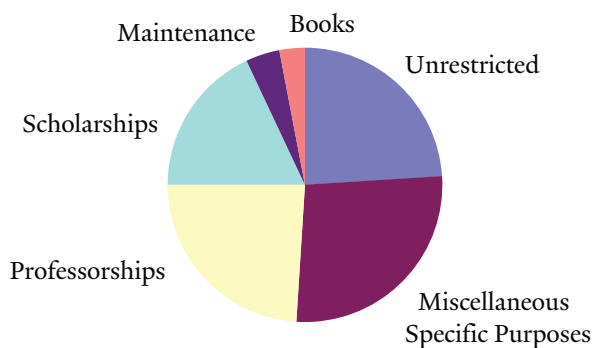
Totaling \$30.3 billion on June 30, 2019, the Yale Endowment contains thousands of funds with various purposes and restrictions. Approximately 82% of funds constitute true endowment, gifts restricted by donors to provide long-term funding for designated purposes. The remaining funds represent quasi-endowment, monies that 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 (24%); scholarships, fellowships and prizes (18%); maintenance (4%); books (3%); and miscellaneous specific purposes (27%). Twenty-four percent of funds are unrestricted. Eighteen percent of the Endowment benefits the overall University, with remaining funds focused on specific units, including the Faculty of Arts and Sciences (34%), the professional and arts schools (25%), the library (7%) and other entities (15%).*

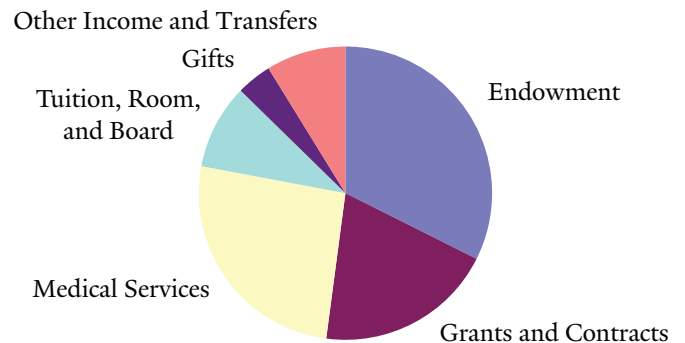
Although distinct in purpose or restriction, Endowment funds are commingled in an investment pool and tracked with unit accounting much like a large mutual fund. Endowment gifts of cash, securities or property are valued and exchanged for units that represent a claim on a portion of the total investment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

In fiscal 2019 the Endowment provided \$1.4 billion, or 32%, of the University's \$4.2 billion operating income. Other major sources of revenues were medical services of \$1.1 billion (26%); grants and contracts of \$824 million (20%); net tuition, room and board of \$392 million (9%); gifts of \$162 million (4%); and other income and transfers of \$368 million (9%).

Endowment Fund Allocation
Fiscal Year 2019



Operating Budget Revenue
Fiscal Year 2019



* Numbers do not sum to 100% due to rounding.

Diversification and Its Long-Term Benefits

Market return studies indicate that high levels of equity market exposure benefit long-term investors. However, the associated risks come through less clearly. Significant concentration in a single asset class poses risk to portfolio assets. Fortunately, diversification provides investors with a powerful risk management tool. By combining assets that vary in response to forces that drive markets, investors create more efficient portfolios. At a given risk level, properly diversified portfolios provide higher returns than less-well-diversified portfolios. Conversely, through appropriate diversification, a given level of returns can be achieved at lower risk. Harry Markowitz, known as the father of modern portfolio theory, maintains that portfolio diversification provides investors with a “free lunch,” since risk can be reduced without sacrificing expected return.

Yale’s Endowment pioneered diversification into alternative asset classes like absolute return, real assets and private equity. By the mid 1990s, Yale achieved most of the gains in portfolio efficiency available from a diversified, equity-oriented approach. Today the University boasts one of the most diversified institutional portfolios, with allocations to eight asset classes with weights ranging from 2.75% to 23%. Yale’s allocations of 2.75% to domestic equity and 7% to fixed income and cash cause only 9.75% of the University’s assets to be invested in traditional U.S. marketable securities. In contrast, the average endowment has one-third of assets in U.S. stocks, bonds and cash.

Portfolio diversification can be painful in the midst of a bull market. When investing in a single asset class produces great returns, market observers wonder about the benefits of creating a well-structured portfolio. Consider the stock market bubble at the turn of the millennium. In the five years ending June 30, 2000, the S&P 500 returned an amazing 23.8% per year, trouncing the performance of foreign developed

and foreign emerging markets, which returned 12.0% and 0.6%, respectively. During the same period, the median educational endowment returned 16.4%. Simply owning the S&P 500 would have generated a wealth multiple of 2.9 times, while the average endowment lagged with a multiple of 2.1 times.

By the late 1990s, many investors questioned the wisdom of owning any assets other than U.S. equities, especially high-flying technology stocks, asserting the inherent superiority of American companies and the inevitable dominance of high-tech businesses. Not surprisingly, U.S. equity markets eventually collapsed. When the bull market came to a halt in the spring of 2000, Yale was in a strong position to generate handsome returns. In particular, performance by

the absolute return and real assets portfolios, which lagged overall Endowment performance in the late 1990s, bolstered Endowment returns.

Just as roaring bull markets encourage diversification skeptics, so do acute financial panics. Based on the substantial decline in Yale’s Endowment during the 2008 financial crisis, some observers questioned the University’s diversified, equity-oriented approach. Particular criticism focused on the Yale model’s failure to protect the Endowment in the early months of the financial crisis. The criticism, while superficially true, falls short in two ways: 1) in a financial crisis (the market crash in 1987, the Long-Term Capital Management failure in 1998, the Internet bubble collapse in 2000 and the Great Financial Crisis in 2008) all risky assets fall in price as market par-



Harkness Tower.



Twin spires of the Sterling Law Building.

ticipants seek the safety of government bonds, leaving government bonds as the only diversifying asset that works; and 2) when evaluated over a reasonably long time frame, the opportunity costs of holding government bonds impose a significant drag on portfolio returns.

The fact that diversification among a variety of equity-oriented alternative investments sometimes fails to protect portfolios in the short run does not negate the value of diversification in

the long run. Consider an investor in Japanese equities in 1989. An undiversified portfolio invested in the Nikkei at the end of 1989 suffered a decline of 24% in local currency terms for the thirty years through June 30, 2019. Diversification matters.

The University's discipline of sticking with a diversified portfolio has contributed to the Endowment's market-leading long-term record. For the thirty years ending June 30, 2019, Yale's portfolio generated an annual-

ized return of 12.6% with a standard deviation of 6.8%. Over the same period, the undiversified institutional standard of 60% stocks and 40% bonds produced an annualized return of 8.7% with a standard deviation of 9.0%. Yale's diversified portfolio produced significantly higher returns with lower risk.

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, both of whom 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 sensitivity of 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 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. Quantitative measures have difficulty incorporating factors such as market liquidity or the influence of significant, low-probability events. In spite of the operational challenges, the rigor required in conducting mean-variance analysis brings an important perspective to the asset allocation process.

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

Asset Class	June 2019 Actual	June 2019 Target
Absolute Return	23.2%	23.0%
Domestic Equity	2.7	2.75
Foreign Equity	13.7	13.75
Leveraged Buyouts	15.9	16.5
Natural Resources	4.9	5.5
Real Estate	10.1	10.0
Venture Capital	21.1	21.5
Cash & Fixed Income	8.4	7.0

At its June 2019 meeting, Yale's Investment Committee adopted changes to the University's policy portfolio allocations. The Committee approved increases in the venture capital target from 18% to 21.5%, in the leveraged buyout target from 15% to 16.5%, in the real estate target from 9.5% to 10% and in the cash and fixed income target from 6.5% to 7%. The Committee approved decreases in the absolute return target from 26% to 23%, in the foreign equity target from 15.5% to 13.75%, in the natural resources target from 6.5% to 5.5% and in the domestic equity target from 3% to 2.75%. Over the longer term, Yale seeks to allocate approximately one-half of the portfolio to the illiquid asset classes of leveraged buyouts, venture capital, real estate and natural resources.

Providing resources for current operations and preserving purchasing power of assets dictate investing for high returns, causing the Endowment to be biased toward equity. The University's vulnerability to inflation further directs the Endowment away from fixed income and toward equity instruments. Hence, more than 90% of the Endowment is targeted for investment in assets expected to produce equity-like returns, through holdings of domestic and international equities, absolute return strategies, real estate, natural resources, leveraged buyouts and venture capital.

Over the past three decades, Yale dramatically reduced the Endowment's dependence on domestic marketable securities by reallocating assets to nontraditional asset classes. In 1989, 65% of the Endowment was targeted to U.S. stocks and bonds. Today, target allocations call for 9.75% in domestic marketable securities and cash, while the diversifying assets of foreign equity, absolute return, real estate, natural resources, leveraged buyouts and venture capital dominate the Endowment, representing 90.25% 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 than the 1989 portfolio with similar volatility. 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 exploit illiquid, less efficient markets such as real estate, natural resources, leveraged buyouts and venture capital.



The new Yale Science Building, with 280,300 square feet of laboratory space for biology and related disciplines, opened in 2019.

Investment Committee

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.

A strong investment committee brings discipline to the endowment management process by thoroughly and thoughtfully vetting investment recommendations. It inspires investment staff to produce ever more carefully considered proposals. Throughout its history, Yale's Investment Committee has brought a valuable perspective to the investment operations of the University, fulfilling the responsibility to oversee the investment process, while empowering the investment staff to make sound and compelling proposals.

Since its 1975 establishment, the Investment Committee has been led by six chairs, each possessing good judgment and broad understanding of the financial markets. These leaders have overseen a governance process that encourages long-term, independent and contrarian thinking for Yale's Endowment.



Statue of Nathan Hale, Yale College Class of 1773, on Old Campus.

John Beckwith Madden

John Beckwith Madden was a Successor Trustee of Yale University and Chairman of the Yale Investment Committee from fiscal 1975 to fiscal 1987. Madden joined the Investment Committee at a tough financial time for the University; the Endowment had performed poorly for the previous decade. Madden brought order to the chaos and did so with his incredible sense of humor. During his time as Chairman, the Endowment performed spectacularly, increasing from \$500 million to \$2 billion. Those who knew Madden well remembered him passing around notes during meetings, usually with a witty comment or a hand-drawn cartoon to lighten intense situations.

Underlying Madden's humble intelligence and sense of humor was his dedication to connecting with others. As former Yale President A. Bartlett Giamatti noted, "He was a bridge builder—among those he knew, between institutions, between his sense of the past and his sense of the present, between deeply rooted principles and the busy, practical daily world. His instinct was to connect. He never lost his bearings and, therefore, he became one of those by whom others could always find their way. He was the connecting center for so many of us."

A renaissance man at heart, Madden was co-captain of Yale's football team, an all-American wrestler and captain of the lacrosse team. Outside the realm of athletics, Madden was a member of the Pundits, the Fence Club, the Aurelian Honor Society, the Undergraduate Athletic Association and the Class Council. A true scholar-athlete, Madden went on to win the Phi Beta Kappa key his junior year and became President of the society his senior year.

After graduating from Yale in 1941 with a B.A. in history, he enlisted in the U.S. Army, rising through the ranks to captain and serving in the field artillery in Hawaii, Italy and North Africa during World War II. Following his time in the army, he returned to Yale to pursue a graduate degree in history before



quitting after a few months due to lack of fulfillment. Madden joined Brown Brothers Harriman & Co. in 1946 and met his wife, Audrey Ritter, a year later. In 1949, Madden graduated with his M.B.A. from New York University and in the following years had three children.

Madden became a general partner at Brown Brothers Harriman at the age of thirty-five, one of the youngest partners in the firm's history. During his time at the firm, he was known for being generous with his time and guiding colleagues with a unique level of understanding. Madden possessed an uncanny ability to give good advice without suggesting that his path was the only way, especially when speaking with younger analysts at the firm. In 1968, Madden became a managing partner, and in 1983 he returned to the position of general partner, which he retained until his death in 1988.

Recognizing the value of community input, Madden was a trustee of the Boys' Club of New York, a member of the distribution committee of The New York Community Trust, a director of the James Foundation, a finance and investment committee member of the Maine Community Foundation and the

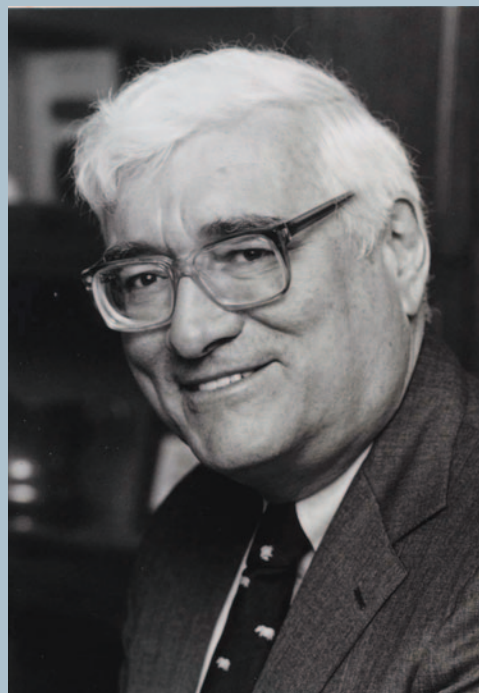
President of the board of trustees of the Packer Collegiate Institute, among other board positions. However, his greatest dedication, other than to his family and career, was to his alma mater. Madden cared deeply about Yale and its commitment to educating the next generation of scholars.

In his eulogy for Madden, Giamatti recalled, "I remember saying to him that Yale was a locomotive and he was the engineer and when he politely inquired how so, I explained that as Chairman of the Corporation Investment Committee, he sat at the throttle and as Chairman of the Corporation Budget Committee, he sat at the brake—and I remember wondering if he found the figure as winning as I did, when he replied, 'Angelo, your choo-choo can only go as fast as the spending rule.'"

At Yale, Madden is commemorated with an endowed Yale College scholarship through the John Beckwith Madden '41 Scholarship Fund. In addition, both the John B. Madden Head of Berkeley College and the John B. Madden Dean of Berkeley College are named through endowments in his honor.

Harold E. Woodsum

Harold E. “Ed” Woodsum was a Successor Trustee of Yale University from 1979 to 1988 and Chairman of the Yale Investment Committee in fiscal 1988. After graduating from Yale College in 1953 with a B.A. in history, Woodsum served two years in the U.S. Army. He then returned to New Haven to attend Yale Law School, joining White & Case after graduation as a specialist in corporate mergers and



acquisitions. In 1965, Woodsum co-founded Drummond Woodsum, one of Maine’s most respected law firms, where he practiced law for over twenty-five years.

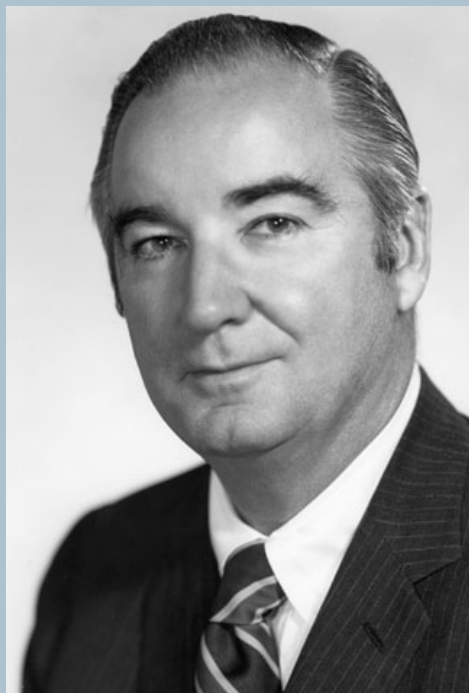
Woodsum was an influential member of the Yale community since his undergraduate years. As a star football player, he contributed

to Yale’s historic 41-14 victory over Harvard in 1952 and set a record for most touchdowns in a Yale college career. Returning to the athletic fold three decades later, Woodsum served as Yale’s Athletic Director from 1988 to 1994.

In addition to his service to Yale, Woodsum served as a board Chair of the University of New England and as a director and board Chair of the National Audubon Society and Maine Coast Heritage Trust.

Joseph H. Williams

Joseph H. “Joe” Williams was a Successor Trustee of Yale University from 1977 to 1989 and Chairman of the Yale Investment Committee in fiscal 1989. Williams graduated with a B.A. in history from Yale College in 1956 and subsequently served as an artillery officer in the U.S. Army for two years. After the army, he joined Williams Companies, a pipeline construction and telecommunications business,



as a pipeline timekeeper. Williams eventually served as Chairman and Chief Executive Officer of the Williams Companies, building the business into a multi-billion-dollar company.

While building a successful career, Williams

continued to support the University. An avid conservationist, Williams was a member of the Yale School of Forestry & Environmental Studies (now the Yale School of the Environment) Leadership Council as well as the Yale Institute for Biospheric Studies. Williams endowed the Joseph H. Williams Scholarship Fund at the Yale School of the Environment. The Alumni Association awarded Williams the Yale Medal in 1992, recognizing his commitment to the University. With his brother, David R. Williams, he established the Williams Brothers Chair of Management Studies in the Private Sector at the Yale School of Management.

Beyond Yale, Williams made a notable impact on both the economy and the environment. He served as Chairman of the Federal Reserve Bank of Kansas City and the Oklahoma Nature Conservancy. In 1998, he was inducted into the Oklahoma Hall of Fame for his efforts in commerce and conservation.

Richard J. Franke

Richard J. Franke was a Successor Trustee of Yale University from 1987 to 1999 and Chairman of the Yale Investment Committee from fiscal 1990 to fiscal 1999. Franke was the Chief Executive Officer of the John Nuveen Company in Chicago for twenty-two years, building a successful investment business that encouraged civic participation and philanthropy. Franke's lifelong interest in the humanities was



prompted by his studies at Yale, where he received a B.A. in history in 1953. He later earned an M.B.A. from Harvard.

Franke championed the value of a liberal arts education and the humanistic tradition at Yale and abroad. In 1988, Franke helped found the Chicago Humanities

Festival, which continues to bring together artists and critics from all over the world. In 1997, he was in the first cohort to receive the National Humanities Medal from President Clinton for "bringing the pleasure of art and ideas to the people of the great city of Chicago."

Franke continues to serve Yale and its educational mission. He received the Yale Club of Chicago's William McCormick Blair Distinguished Service Award in 1996, a Doctor of Humane Letters from Yale in 2001 and the Yale Medal in 2012. Through his and his wife Barbara Franke's support, the Franke Program in Science and the Humanities fosters communication, mutual understanding, collaborative research and teaching among diverse scientific and humanistic disciplines. In addition, Franke established the Franke Fellowship in the Humanities as well as the Franke Visiting Scholars and Artists Fund at the Whitney Humanities Center. A number of spaces at Yale have been named after Franke, including the Franke Fellows' Lounge in Pauli Murray College, the Franke Study Room in Bass Library and the Franke Family Digital Humanities Laboratory.

Charles D. Ellis

Charles D. "Charley" Ellis was a Successor Trustee of Yale University from 1997 to 2008 and Chairman of the Yale Investment Committee from fiscal 2000 to fiscal 2008. Prior to being named to the Yale Corporation, Ellis was a non-trustee member of the Investment Committee beginning in 1993. Ellis received his B.A. in art history from Yale in 1959. He went on to earn an M.B.A. (with distinction) from



Harvard Business School and later received a PH.D. in financial economics from New York University.

For thirty years, Ellis was managing partner of Greenwich Associates, a strategy consulting firm he founded in 1972. Ellis is an author of numerous books on

investment management, including *Winning the Loser's Game*, *The Elements of Investing* and *The Index Revolution*. As a longtime advocate for index investing through funds, Ellis has argued that avoiding mistakes, rather than looking to beat the market, is the best recipe for long-term sustainable investment success. Ellis served for two years as Chair of the Institute of Chartered Financial Analysts.

Ellis's commitment to education is relentless, having taught advanced investment management courses at both Harvard Business School and the Yale School of Management. The Yale SOM dining hall, Charley's Place, and SOM innovation fund are named after Ellis in honor of his long record of support for the school. He chairs the Dean's Leadership Council at the Yale School of Nursing and the Whitehead Institute for Biomedical Research at MIT. In 2009, Ellis was awarded the Yale Medal, recognizing outstanding individual service to the University.

Douglas A. Warner, III

Douglas A. “Sandy” Warner, III has served as a Successor Trustee of Yale University and Chairman of the Yale Investment Committee since fiscal 2009. Warner is retired Chairman of the Board of J.P. Morgan Chase and former co-Chair of the firm’s Executive Committee, its senior policy-making management group.

Warner was Chairman of the Board, President and Chief Executive Officer of J.P. Morgan before its merger with the Chase Manhattan Corporation in December 2000. Warner became head of J.P. Morgan on January 1, 1995, and served as President and Chief Operating Officer, as well as a Morgan director, from January 1990 until the end of 1994.

Warner was born in Cincinnati, Ohio. After graduating from Yale in 1968 with a B.A. in economics, he joined Morgan’s management training program and, during the next fifteen years, held positions of growing responsibility in a variety of Morgan’s banking areas. In 1983, he was posted to London as Assistant General Manager and Head of Banking, and in 1986, became General Manager of the London office and Morgan’s Senior Officer in the United Kingdom. In 1987, he returned to New York to take charge of Corporate Finance in the Americas, and then of the worldwide Corporate Finance group, one of Morgan’s major business divisions.

Warner is a former Director of General Electric, Anheuser-Busch and Motorola. He was Chairman of the Board of Managers and the Board of Overseers of Memorial Sloan-Kettering Cancer Center from 1997 until December 2018. Warner is past President of the International Monetary

Conference and the Federal Reserve Board’s Federal Advisory Council.



Prior to being named a Successor Trustee in 2008, Warner was a non-trustee member of two Yale Corporation committees, serving on the Investment Committee beginning in fiscal 2002 and on the School of Medicine Ad Hoc Committee from 2001 to

2007. Warner created the Douglas A. Warner III Professorship of Economics and supported Warner Gate at Benjamin Franklin College and Warner House, home of the Yale Graduate School of Arts and Sciences.



Carving from Sterling Law Building.



Collegiate Gothic ornamentation,
Grace Hopper College.

Asset Class Characteristics

Yale's eight asset classes are defined by differences in their expected response to economic conditions, such as economic growth, price inflation or changes in interest rates, with weights in the Endowment portfolio determined by risk-adjusted returns and correlations. The University combines the asset classes in such a way as to provide the highest expected return for a given level of risk, subject to fundamental diversification and liquidity constraints.

In fiscal 2019, the University updated its asset allocation framework to incorporate excess returns into Yale's mean-variance analysis methodology. The capital markets assumptions detailed for each asset class below incorporate assumptions about the University's ability to add value through active management.

Absolute Return

In July 1990, Yale became the first institutional investor to define absolute return strategies as a distinct asset class, beginning with a target allocation of 15.0%. Designed to provide significant diversification to the Endowment, absolute return investments are expected to generate high long-term real returns by exploiting market inefficiencies. The portfolio is invested in two broad categories: event-driven strategies and value-driven strategies. Event-driven strategies rely on a specific corporate event, such as a merger, spin-off or bankruptcy restructuring, to achieve a target price. Value-driven strategies involve hedged positions in assets or securities with prices that diverge from their underlying economic value. Today, the absolute return portfolio is targeted to be 23.0% of the Endowment, above the average educational institution's allocation of 20.6% to such strategies. Absolute return strategies are expected to generate a real return of 3.5% with risk of 7.0%. The Barclays 9 to 12 Month Treasury Index serves as the portfolio benchmark.

Absolute return investments have historically provided returns largely independent of overall market moves. Over the past twenty years, the portfolio exceeded expectations, returning 8.8% per year with low correlation to domestic stock and bond markets.

Domestic Equity

Equity owners reasonably expect to receive returns superior to those produced by less risky assets such as bonds and cash. The predominant asset class in most U.S. institutional portfolios, domestic equity represents a large, liquid and heavily researched market. While the average educational institution invests 20.8% of assets in domestic equities, Yale's target allocation to this asset class is only 2.75%. The domestic equity portfolio has an expected real return of 6.0% with a standard deviation of 17.0%. 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 the market index by a few percentage points, net of fees, annually. Because superior stock selection provides the most consistent and reliable opportunity for generating attractive 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 fundamental measures, such as asset value, future earnings or cash flow. Yale's domestic equity portfolio has posted returns of 11.4% per year over the past twenty years.

Foreign Equity

Foreign equity investments give the Endowment exposure to the global economy, providing diversification and the opportunity to earn outsized returns through active management. Yale allocates 5.75% of its portfolio to foreign developed markets and 8.0% to emerging markets. Yale's foreign equity target allocation of 13.75% stands below the average endowment's allocation of 21.9%. Expected real returns for emerging equities are 11.0% with a risk level of 23.0%, while developed equities are expected to return 8.0% with risk of 20.0%. The portfolio is benchmarked against a composite of developed markets, measured by the MSCI Europe, Australasia and Far East (EAFE) Investable Market Index, and emerging markets, measured by a blend of the MSCI Emerging Markets Investable Market Index and the MSCI China A Share Investable Market 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 fundamental research capabilities. Capital allocation to individual managers takes into consideration the country allocation of the foreign equity portfolio, the degree of confidence that Yale possesses in a manager and the appropriate size for a particular strategy. In addition, Yale attempts to exploit mispricings in countries, sectors and styles by allocating capital to the most compelling opportunities. Twenty-year returns for Yale's foreign equity portfolio stand at 14.7% per year.

Leveraged Buyouts

Leveraged buyouts offer extremely attractive long-term risk-adjusted returns, stemming from the University's strong stable of managers that exploit market inefficiencies. The University's target allocation to leveraged buyouts of 16.5% far exceeds the 7.1% actual allocation of the average educational institution. The leveraged buyout portfolio is expected to generate real returns of 8.3% with risk of 21.2%.

Yale's leveraged buyout strategy emphasizes partnerships with firms that pursue 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. Over the past twenty years, the leveraged buyout program has earned 12.6% per annum.

Natural Resources

Equity investments in natural resources – oil and gas, timberland and agriculture – share common risk and return characteristics: protection against unanticipated inflation, high and visible current cash flow and opportunities to exploit inefficiencies. At the portfolio level, natural resource investments provide attractive return prospects and significant diversification. Yale has a 5.5% policy allocation to natural resources with expected real returns of 8.5% and risk of 24.0%. Yale's policy allocation is below the 7.7% natural resources allocation of the average endowment.

Superior operators have demonstrated the ability to generate excess returns through market cycles. Over the past twenty years, Yale's natural resources portfolio has generated an impressive 14.7% per annum.

Real Estate

Investments in real estate provide material diversification to the Endowment. A steady flow of income with equity upside creates a natural hedge against unanticipated inflation without sacrificing expected return. Yale's 10.0% policy allocation significantly exceeds the average endowment's commitment of 3.4%. Expected real returns are 5.5% with risk of 16.0%.

While real estate markets sometimes produce dramatically cyclical returns, pricing inefficiencies in the asset class and opportunities to add value allow superior managers to generate excess returns over long time horizons. Twenty-year returns for the portfolio stand at 9.0% per annum.

Venture Capital

Venture capital investments produce compelling option-like returns, as the University's premier venture managers provide exposure to innovative start-up companies from an early stage. Yale's target venture capital allocation of 21.5% exceeds the 6.6% actual allocation of the average educational institution. The venture capital portfolio is expected to generate real returns of 12.3% with risk of 37.8%.

Yale's venture capital 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. Yale's venture capital managers field strong, cohesive and hungry teams with proven ability to identify opportunities and support talented entrepreneurs. The University's venture capital portfolio contains an unparalleled set of manager relationships, significant market knowledge and an extensive network. Over the past twenty years, the venture capital program has earned an outstanding 241.3% per annum.*

* Returns reported for manager performance in marketable equities and absolute return are time-weighted returns, because the University determines cash flows to and from the asset classes. Returns reported for leveraged buyouts, venture capital, real estate and natural resources are dollar-weighted internal rates of return, because the managers of illiquid asset classes determine when to buy and sell assets.

Yale's 241.3% venture capital return over the past twenty years is heavily influenced by large distribu-

tions during the internet boom. Since such a calculation assumes reinvestment of proceeds from the portfolio during the period at the same rate of return for the rest of the period, it is inappropriate to compound the 241.3% return over the twenty-year time horizon. For reference, the twenty-year time-weighted return of Yale's venture capital portfolio is 20.2%. The other illiquid asset classes are not subject to similarly large distortions.

Cash and Fixed Income

Fixed income assets generate stable flows of income, providing more certain nominal cash flow than any other Endowment asset class. The fixed income portfolio exhibits a low covariance with other asset classes and serves as a hedge against financial accidents or periods of unanticipated deflation. While the typical educational institution’s allocation to fixed income and cash instruments is 11.9%, Yale’s target allocation to fixed income and cash is 7.0%. Bonds have an expected real return of 0.0% with risk of 3.0%. The Barclays Capital 6 to 12 Month U.S. Treasury Index serves as the portfolio benchmark.

Yale is not particularly attracted to fixed income assets, as they have the lowest expected returns of the eight asset classes that make up the Endowment. In addition, the government bond market is the most efficiently priced asset class, offering no 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. Over the past twenty years, the fixed income portfolio has generated returns of 3.8% per annum.

Asset Allocations
as of June 30, 2019

	Yale University	Educational Institution Mean
Absolute Return	23.2%	20.6%
Domestic Equity	2.7	20.8
Foreign Equity	13.7	21.9
Leveraged Buyouts	15.9	7.1
Natural Resources	4.9	7.7
Real Estate	10.1	3.4
Venture Capital	21.1	6.6
Cash & Fixed Income	8.4	11.9



Silliman College courtyard.

Board of Trustees

The Yale Corporation, or board of trustees, is the University's principal governing body. As fiduciaries, the trustees ensure that Yale's academic and administrative activities are guided by sound policies and practices, are equipped with adequate resources and are designed to further Yale's mission. In this work, they balance the needs of today's faculty and students with those of future generations.

The Corporation has sixteen trustees: ten appointed Successor Trustees, each limited to two six-year terms; and six elected Alumni Fellows, chosen by alumni for staggered six-year terms, with the possibility of one six-year extension. Successor Trustees and Alumni Fellows carry the same responsibilities and duties. The President of the University chairs the board. In addition, the Governor and Lieutenant Governor of Connecticut are board members *ex officio*. The Corporation has thirteen standing committees with responsibilities outlined in the by-laws.

The Corporation convenes in person several times a year to review and discuss issues with Yale's academic and administrative leaders and to vote on matters such as faculty and senior leadership appointments, the conferral of degrees, major building projects, and operating and capital budgets. During and between meetings, trustees consider issues of strategic importance, offer guidance and gather information that supports the stewardship of the University.

Past and current Chairmen Charles Ellis and Douglas Warner served as non-trustee members of the Yale Investment Committee prior to joining the Yale Corporation. Several other non-trustee Investment Committee members have gone on to serve as trustees of the Yale Corporation.



Window, Trumbull College.

Frederick P. Rose

Frederick P. Rose was a member of the Yale Investment Committee from fiscal 1983 to fiscal 1994 and a Successor Trustee of Yale University from 1989 to 1994. Rose received a B.C.E. in civil engineering from Yale in 1944.

As a Yale undergraduate, Rose played on several of Jonathan Edwards College's intramural athletic teams and was a member of the Yale Glee Club. After graduating, Rose served for



three years during World War II as a lieutenant in the U.S. Navy, assigned to the Seabees in the Pacific Theatre.

In 1946, Rose joined Rose Associates, the real estate firm that his father and his uncle had started twenty years earlier. Under Rose's leadership, the company built scores of major projects in

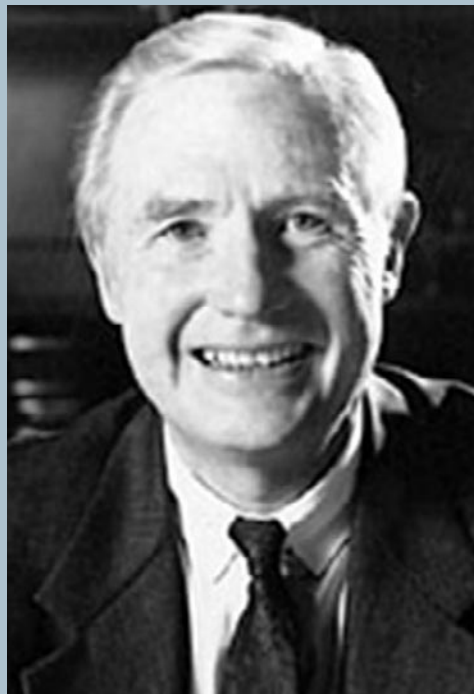
New York City. Rose was particularly proud of building two towers that won awards for design: the Bankers Trust Building at 280 Park Avenue and a forty-story apartment building at 45 East 89th Street.

Rose was a guiding force behind the creation of the Yale Alumni Association (YAA) and was the first chair of its Board of Governors from 1972 to 1974. He was a member of the University Council from 1976 to 1981. Rose received the Yale Medal for outstanding service to the University in 1976 and the Medal of Honor from the Yale Science and Engineering Society in 1991. Rose supported endowed professorships in history and science, as well as a fellowship fund in support of Judaic Studies. He is commemorated by the Rose Walk connecting Cross Campus, Wall Street and Elm Street and the Frederick P. Rose Teaching Laboratory at the Malone Center. Yale awarded him an honorary Doctor of Humane Letters degree during the 1998 Commencement ceremonies. His citation began, "Builder and philanthropist, you have left your mark indelibly on your university and your city."

John J. Lee, Jr.

John J. Lee, Jr. was a member of the Yale Investment Committee from fiscal 1986 to fiscal 1999 and an Alumni Trustee of Yale University from 1993 to 1999.

Lee was an accomplished Yale athlete, a business leader and an exemplary supporter of Yale University. As a basketball player, Lee scored 1,493 points in 73 games and led the team to its first Ivy League Championship, all while earn-



ing his B.E. in chemical engineering in 1958. Dubbed the "next great Ivy League scholar-athlete" by *Sports Illustrated*, Lee earned All-America honors and was drafted by the New York Knicks. Choosing scholarship over professional basketball, Lee continued his education at

Yale and earned his M.Eng. in chemical engineering.

Over the course of his career, Lee led several energy and manufacturing companies. He was Chief Executive Officer of the Barber Oil Corporation and Phibro Resource Corporation. He then served as an executive at Tosco Corporation, a multibillion-dollar energy company, before leading Hexcel Corporation, a manufacturer of aerospace and military composites.

Lee's contributions to Yale rivaled his success in business, leading the University to honor him with the Yale Medal and the Yale Distinguished Alumni award. Lee created the John J. Lee Professorship in engineering and funded the Lee Family Classroom at the Yale Center for Engineering Innovation and Design. In 1996, the court where Yale basketball, volleyball and gymnastics events are held was named the John J. Lee Amphitheater.

G. Leonard Baker

G. Leonard “Len” Baker was a member of the Yale Investment Committee from fiscal 1990 to fiscal 1995 and fiscal 1997 to fiscal 2015. Baker was a Successor Trustee of Yale University from 2000 to 2012. Baker received a B.A. in mathematics from Yale in 1964 and an M.B.A. from Stanford in 1966.

Baker has been a Partner of Sutter Hill Ventures since 1973. He has been an active investor in a number of industries, including



entertainment media, semiconductors and semiconductor equipment, biotechnology, medical equipment and software.

Currently, Baker serves on the board of Corcept Therapeutics, a public biopharmaceutical company. He is responsible for Sutter Hill’s investment in

Chengwei Ventures, a venture capital firm in Shanghai that Sutter Hill helped start in 1999, and in Golden Gate Capital, a private equity firm in San Francisco that Sutter Hill helped found in 2000.

Baker is a member of the Investment Board for the Government of Singapore Investment Corporation and serves on the board of the Stanford Management Company, the organization that manages the endowment of Stanford University. He is an advisor to the Packard Foundation Investment Committee and Alta Advisers, a London family office. Baker is a board member of the Environmental Defense Fund and a Trustee of the Berklee College of Music.

At Yale, Baker created the G. Leonard Baker, Jr. and Mary Anne Nyburg Baker Scholarship Fund and supported the Nyburg Baker Court at Benjamin Franklin College, the Class of 1964 Gate at Benjamin Franklin College and the Baker Classroom at the Yale School of Management.

William I. Miller

Will Miller was a member of the Yale Investment Committee from fiscal 1995 to fiscal 2011 and an Alumni Trustee of Yale University from 2005 to 2011. Miller received a B.A. in English from Yale in 1978 and an M.B.A. from Stanford University in 1981, graduating as an Arjay Miller Scholar.

Since 2011, Miller has served as the President of the Wallace Foundation, a philanthropy whose mission is to foster



improvements in learning and enrichment for marginalized youth and the vitality of the arts for everyone.

Before joining Wallace, Miller enjoyed a long career at Irwin Management, a privately owned investment management firm, and Irwin Financial Corporation, a publicly

held financial services company. At Irwin Management, he was President and Chief Executive Officer from 1983 to 1990 and Chairman from 1990 to 2011. At Irwin Financial, Miller served as Chairman and Chief Executive Officer from 1990 to 2009.

Miller’s other roles have included chairing The Taft School’s governing board, serving as co-Chair of the Central Indiana Partnership, being a founding member of the Community Education Coalition of Columbus and serving on the boards of Cummins, Inc. and three mutual funds managed by Capital Group. In 2008, he was elected to the American Academy of Arts and Sciences. His achievements and experiences reflect a lifelong passion for educational improvement, civic revitalization and community service.

In honor of his father, Miller and his sisters created the J. Irwin Miller Endowment Fund at the Yale School of Architecture.

Joshua Bekenstein

Joshua Bekenstein was a member of the Yale Investment Committee from fiscal 2001 to fiscal 2013 and has been a Successor Trustee of Yale University since 2013. Bekenstein received a B.A. in economics from Yale in 1980 and an M.B.A. from Harvard Business School in 1984.

Bekenstein is a co-Chairman of Bain Capital and has many years of experience both as a senior executive of a large



investment firm and as a director of companies in various business sectors. Bekenstein helped found Bain Capital, which has grown from its inception in 1984 into a private alternative asset management firm with more than 1,000 employees in ten offices in seven countries. Prior to join-

ing Bain Capital, he spent several years doing strategic consulting at Bain & Company.

Bekenstein serves on the boards of Bright Horizons Family Solutions, BRP (Bombardier Recreational Products), Canada Goose, Dealer Tire, Dollarama, Michaels Stores and Varsity Brands. Philanthropically, Bekenstein chairs the board of the Dana-Farber Cancer Institute and is a member of the board of trustees of the Environmental Defense Fund and New Profit. At Yale, Bekenstein has served on the School of Management Board of Advisors and as an at-large member of the University Council, co-Chair of the Yale Tomorrow Campaign and a member of the Yale Development Council. Bekenstein endowed the Anita and Joshua Bekenstein '80 B.A. Director of the Broad Center and funded the Bekenstein Atrium, both at the Yale School of Management. In addition, he supported Bekenstein Court at Pauli Murray College.

Ann Miura-Ko

Ann Miura-Ko was a member of the Yale Investment Committee from fiscal 2016 to fiscal 2019 and has been an Alumni Trustee of Yale University since 2019. She has served on Yale's School of Engineering & Applied Science Leadership Council. Miura-Ko received a B.S. in electrical engineering from Yale in 1998 and a PH.D. in math modeling of computer security from Stanford in 2010.



Miura-Ko is a co-founding partner at Floodgate, a seed-stage venture capital firm. Known for her visionary investments, she was one of the first investors in Lyft, Refinery29 and Xamarin. Beyond her expertise in marketplaces and consumer applications, Miura-Ko is also well known for her

highly technical investments, work that has earned her repeat appearances on the *Forbes* Midas List and *The New York Times* list of top twenty venture capitalists worldwide. Prior to co-founding Floodgate, she worked at Charles River Ventures and McKinsey & Company.

At Stanford University, Miura-Ko is a lecturer in engineering, teaching on topics from blockchain to intelligent growth for start-ups. In addition, she is a co-Director of the competitive Stanford Mayfield Fellows Program, which helps train undergraduates to become technology leaders. Miura-Ko is a co-founding member of AllRaise, an organization dedicated to increasing the success and prevalence of female funders and founders. She co-leads AllRaise's Founders for Change, a group of more than 900 venture-backed founders committed to improving diversity and inclusion within their companies.

Miura-Ko created the Ann Miura-Ko and Albert Ko Scholarship Fund for Yale College.

4

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 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.

The Endowment spending policy, which allocates Endowment earnings to operations, balances the competing objectives of providing a stable flow of income to the operating budget and protecting the real value of the Endowment. The spending policy manages the trade-off between these two objectives by combining a long-term spending rate target with a smoothing rule, which adjusts spending in any given year gradually in response to changes in Endowment market value.

The target spending rate approved by the Yale Corporation currently stands at 5.25%. According to the smoothing rule, Endowment spending in a given year sums to 80% of the previous year's spending and 20% of the targeted long-term spending rate applied to the market value at the start of the prior year. The spending amount determined by the formula is adjusted for inflation and an allowance for taxes, subject to the constraint that the calculated rate is at least 4.0% and not more than 6.5% of the Endowment's inflation-adjusted market value at the start of the



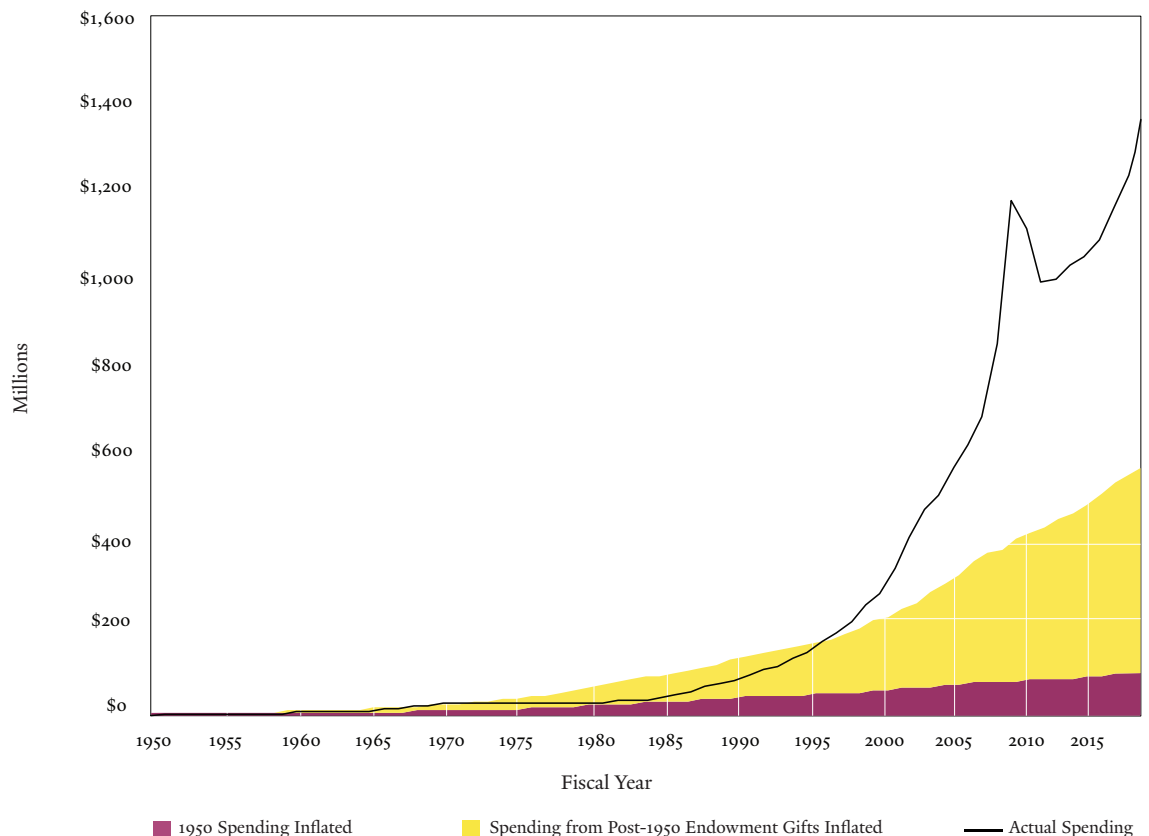
View toward Bass Tower, with Pauli Murray College at right, Benjamin Franklin College at left. Yale's two new residential colleges opened in 2017.

prior year. The smoothing rule and the diversified nature of the Endowment are designed to mitigate the impact of short-term market volatility on the flow of funds to support Yale's operations.

The spending rule has two implications. First, by incorporating the prior year's spending, the rule eliminates large fluctuations, enabling the University to plan for its operating budget needs. Over the last twenty years, the standard deviation of annual changes in actual spending has been approximately 70% of the standard deviation of Endowment returns. Second, by adjusting spending toward the long-term target spending level, the rule ensures that spending will be sensitive to fluctuating Endowment market values, providing stability in long-term purchasing power.

Distributions to the operating budget rose from \$1.2 billion in fiscal 2009 to \$1.4 billion in fiscal 2019. The University projects spending of \$1.4 billion from the Endowment in fiscal 2020, representing approximately 34% of revenues.

Spending Growth Surpasses Inflation 1950–2019



Investment Performance

5

Performance by Asset Class

Yale has produced excellent long-term investment returns. Over the ten-year period ending June 30, 2019, the Endowment earned an annualized 11.1% return, net of fees, placing Yale in the top 4% of colleges and universities. Over the same period, domestic stocks returned 14.7% and domestic bonds returned 3.9%. Endowment outperformance stems from sound asset allocation policy and superior active management.

Yale's long-term superior performance relative to its peers and benchmarks creates substantial wealth for the University. Over the ten years ending June 30, 2019, Yale added \$7.1 billion relative to the average return of a broad universe of college and university endowments and \$3.8 billion relative to its passive benchmark.

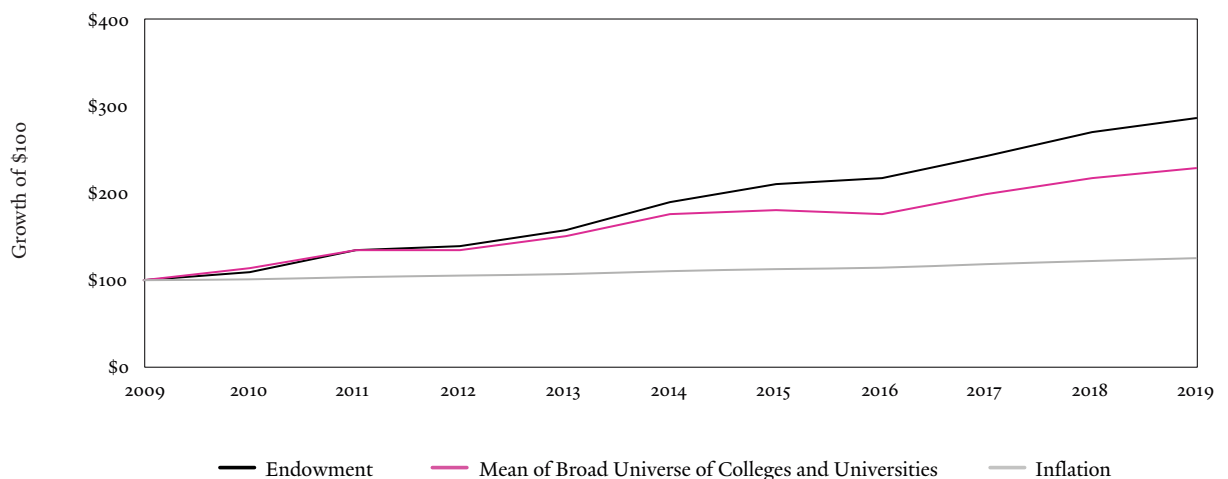
Yale's long-term asset class performance continues to be outstanding. In the past ten years, nearly every asset class posted superior returns, outperforming benchmark levels.

Over the past decade, the absolute return portfolio produced an annualized 6.4% return, exceeding the passive Barclays 9 to 12 Month U.S. Treasury Index by 5.6% per year and besting its active benchmark by 2.8% per year. For the ten-year period, absolute return results exhibited little correlation to traditional marketable securities.

The domestic equity portfolio returned an annualized 15.5% for the ten years ending June 30, 2019, outperforming the Wilshire 5000 Index by 0.9% per year and the BNY Median Manager return, net of estimated fees, by 1.8% per year. Yale's active managers have added value to benchmark returns primarily through stock selection.

The foreign equity portfolio generated an annual return of 16.0% over the ten-year period, outperforming its composite passive benchmark by 9.9% per year and the BNY Median Manager return, net of estimated fees, by 9.0% per year. The portfolio's excess return is due to effective security selection by active managers and astute country allocation.

Yale's Performance Exceeds Peer Results
June 30, 2009 to June 30, 2019, 2009 = \$100



Leveraged buyouts generated an annualized 16.1% return over the decade, outperforming the composite passive benchmark by 3.8% per year and the pool of buyout managers compiled by Cambridge Associates by 0.8% per year.

Yale's natural resources portfolio produced an annualized return of 5.7% over the past decade, surpassing its composite passive benchmark by 4.3% per year and outperforming the Cambridge Associates natural resources manager pool by 1.0% per year.

Real estate generated an 8.0% annualized return over the ten-year period, underperforming the MSCI U.S. REIT Index by 6.1% per year and the pool of Cambridge Associates real estate managers by 2.0% per year.

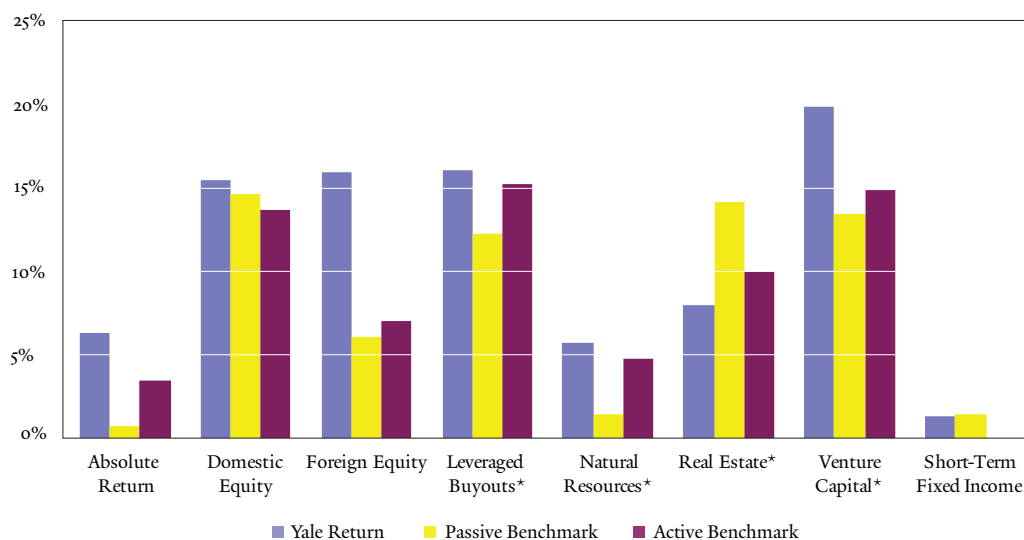
The venture capital portfolio earned an annualized return of 20.0% for the ten years ending June 30, 2019, exceeding its composite passive benchmark by 6.4% per year and the Cambridge Associates venture capital manager pool by 5.0% per year.

Yale's internally managed fixed income portfolio earned an annualized 1.4% over the past decade, modestly underperforming the passive index.



Betts House, on upper Prospect Street, houses administrative offices.

Most Yale Asset Class Results Beat Benchmarks July 1, 2009 to June 30, 2019



* Yale Returns and Active Benchmarks are dollar-weighted.

Passive Benchmarks

Absolute Return: Barclays 9-12 Month U.S. Treasury Index

Domestic Equity: Wilshire 5000 Index

Foreign Equity: Blend of MSCI EAFE Investable Market Index, MSCI Emerging Markets Investable Market Index, MSCI China A Share Investable Market Index

Leveraged Buyouts: Blend of Russell 2000, MSCI ACWI ex-U.S. Small-Cap Index

Natural Resources: Blend of Custom Timber REIT Basket, S&P O&G Exploration & Production Index, Euromoney Global Mining Index, Custom Agriculture REIT Basket

Real Estate: MSCI U.S. REIT Index

Venture Capital: Blend of Russell 2000 Technology Index, NASDAQ Biotechnology Index, MSCI China Small-Cap Index, MSCI India Small-Cap Index

Fixed Income: Barclays Capital 6-12 Month U.S. Treasury Index (Barclays 1-3 Year Treasury from October 2013 to June 2018, Barclays 1-5 Year Treasury from July 2009 to September 2013)

Active Benchmarks

Absolute Return: Credit Suisse and Inverse Wilshire 5000 Composite

Domestic Equity: BNY Median Manager, U.S. Equity, with fee adjustment of 78 basis points per annum

Foreign Equity: BNY Median Manager Composite, Foreign Equity, with fee adjustment of 81 basis points per annum for developed equity and 97 basis points per annum for emerging equity

Leveraged Buyouts: Cambridge Associates Global Leveraged Buyouts

Natural Resources: Cambridge Associates Natural Resources

Real Estate: Cambridge Associates Real Estate

Venture Capital: Cambridge Associates Global Venture Capital



Skinner House, 46 Hillhouse Avenue.

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.

Investment Committee

Douglas A. Warner, III '68
Chairman
Former Chairman
J.P. Morgan Chase & Co.

Francis Biondi '87
Managing Member
King Street Capital Management

Michael J. Cavanagh '88
Senior Executive Vice President and CFO
Comcast Corporation

Anne Glover '78 MPPM
CEO and Co-Founder
Amadeus Capital Partners

Charles W. Goodyear IV '80
President
Goodyear Investment Company

Ben Inker '92
Partner
GMO

Peter Salovey '86 PH.D.
President
Yale University

John Shrewsberry '92 MPPM
Senior Executive Vice President and CFO
Wells Fargo & Company

Carter Simonds '99
Former Managing Director
Blue Ridge Capital

Josh L. Steiner '87
Senior Advisor
Bloomberg L.P.

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 thirty professionals.

Investments Office

David F. Swensen '80 PH.D., '14 L.H.D.
Chief Investment Officer

Peter N. Steinwachs
Associate General Counsel

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

Amy M. Chivetta
Associate Director

Carrie A. Abildgaard
Director

Timothy H. Hillas '13
Associate Director

Alexander C. Banker
Director

Daniel J. Otto '12
Associate Director

Alan S. Forman
Director

Celeste P. Benson
Senior Portfolio Manager

R. Alexander Hetherington '06
Director

Michael Knight
Senior Business Associate

Lisa M. Howie '00, '08 M.B.A.
Director

Bertan Akin
Senior Performance Associate

Matthew S. T. Mendelsohn '07
Director

John T. Ryan '14
Senior Associate

John V. Ricotta '08
Director

Laura W. Bass '15
Senior Investment Analyst

Timothy R. Sullivan '86
Director

Ahmed L. Sarhan '16
Senior Investment Analyst

Xinchen Wang '09
Director

Jordi M. Bofill '19
Investment Analyst

Stephanie S. Chan '97
Senior Associate General Counsel

Cody A. Clements '19
Investment Analyst

Deborah S. Chung
Senior Associate General Counsel

Claire D. Goldsmith '18
Investment Analyst

Lauren Caplan
Associate General Counsel

Nicholas A. Gomez '18
Investment Analyst

Sohail S. Ramirez '10 J.D.
Associate General Counsel

Ilana M. Kamber '18
Investment Analyst



Courtyard at 320 York Street.

Sources

Financial and Investment Information

Educational institution asset allocations and returns from Cambridge Associates.

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.

Investment Committee

American Association of Individual Investors, Charles Ellis. Accessed at www.aaii.com/authors/show/charles-ellis.

Brady, Paula. "50 Years Ago, A Calamity in Cambridge Left Harvard Smarting." *Yale Daily News*, November 21, 2002.

The New York Community Trust. *John Beckwith Madden, 1919-1988*.

Oklahoma Hall of Fame, Member Archives, Joseph H. Williams. Accessed at www.oklahomahof.com/member-archives/w/williams-joseph-h-1988.

Swensen, David F. *Pioneering Portfolio Management*. New York: Simon & Schuster, Inc., 2009.

Tulsa Historical Society and Museum, Hall of Fame, Joseph H. Williams. Accessed at www.tulsaehistory.org/halloffame/joseph-h-williams.

Valeriani, Dick. "Olivar Brings New Brand of Football to Yale Squad." *Columbia Spectator*, October 10, 1952.

Voices of Oklahoma, Interview with Joseph H. Williams. Accessed at www.voicesofoklahoma.com/interview/williams-joseph-h.

Yale School of Management.

Yale University Investments Office.

Yale University Office of Public Affairs & Communications.

Yale University, The Franke Program in Science and the Humanities.

Board of Trustees

The Ivy League, 2019 Legends, John J. Lee. Accessed at www.ivyleague.com/news/2019/1/16/general-john-j-lee-yale.aspx.

Litsky, Frank. "John Lee, 64, an Athlete at Yale Who Chose Industry Over Knicks." *The New York Times*, May 8, 2001.

Pacia, Raymond. "Miller Adds Expertise to Yale Body." *Yale Daily News*, September 1, 2005.

Swensen, David F. *Pioneering Portfolio Management*. New York: Simon & Schuster, Inc., 2009.

The Wallace Foundation.

Yale University Board of Trustees.

Yale University Office of Public Affairs & Communications.

Photo Credits

Front and back covers, pp. 1, 4, 5, 8, 12 (below), 13–18, 20, 22, inside back cover: Michael Marsland, Yale Office of Public Affairs & Communications (OPAC).

Portraits of individuals, pp. 9–12, 19–22: courtesy of Manuscripts & Archives, Yale University Library; OPAC; Jonathan F. P. Rose; Yale Office of Development; The Wallace Foundation.

Photos pp. 25, 26: Thomas Strong.

Yale Science Building photo, p. 7: Jeff Goldberg ESTO, for Pelli Clarke Pelli Architects.

Design

Strong Cohen, LLC.

Back cover: High Street archway, adjoining the Yale University Art Gallery.

