EDUCATIONAL ENDOWMENTS AND THE FINANCIAL CRISIS:

SOCIAL COSTS AND SYSTEMIC RISKS IN THE SHADOW BANKING SYSTEM

A STUDY OF SIX NEW ENGLAND SCHOOLS

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EXECUTIVE SUMMARY

EDUCATIONAL ENDOWMENTS AND THE FINANCIAL CRISIS: SOCIAL COSTS AND SYSTEMIC RISKS IN THE SHADOW BANKING SYSTEM A STUDY OF SIX NEW ENGLAND SCHOOLS

Over the last two decades, wealthy colleges and universities placed an increasing share of their endowments into high-risk, high-return, largely illiquid investments. During the boom times, this so-called "Endowment Model of Investing" generated impressive financial returns. Then came the financial crisis, and in the space of a year, investment losses destroyed tens of billions in endowed wealth at colleges and universities, up to 30 percent of endowment value at some of the wealthiest schools.

Mounting endowment losses have been used by college administrations to justify some of the severest austerity measures in a quarter-century: deep budget cuts, diminished endowment payouts, staff layoffs, and other substantial reductions in force and benefits. The hardship caused by these measures has rippled out in the form of lasting job loss, stalled construction projects, and local business downturns in college communities that used to be secure havens of regional employment and economic resilience.

How did universities, once careful stewards of endowment income, get caught up in the Wall Street-driven financial meltdown? Did our higher education institutions, like America's big banks and financial companies, take ill-advised risks chasing speculative returns? *Educational Endowments and the Financial Crisis: Social Costs and Systemic Risks in the Shadow Banking System* looks at what happens—and who suffers—when universities embrace high-risk investing.

This report examines six privately endowed New England colleges and universities—Boston College, Boston University, Brandeis University, Dartmouth College, Harvard University and the Massachusetts Institute of Technology—as case studies for exploring deeper connections between educational endowments and their impact on our institutions, our communities, and our economy. Even after the crisis, these six schools control nearly $40 billion in endowment assets, more than 12 percent of the roughly $310 billion held in college and university endowments nationwide at the end of FY 2009. They are among the largest employers in their communities in the Boston metropolitan region and the Upper Valley of western New Hampshire and eastern Vermont.

Based on this sample and a review of trends in endowment management, the study's main findings include the following:

The risks of the Endowment Model of Investing have been greatly underestimated.

- **Investment risk-taking has jeopardized the security of endowment income.** For the past two centuries, endowment management has centered on protecting the principal of endowed gifts and generating reliable income. Investments were traditionally made in relatively transparent, liquid securities such as publicly traded equities, bonds, and money-market instruments. But in the last 25 years, many universities have followed the

path of schools such as Harvard and Yale and embraced a new model of investing that relies on radical diversification of endowment portfolios into illiquid, riskier asset classes: private equity and venture capital, hedge funds, and various "real assets," such as oil, gas, and other commodities, private real estate and timberland.

By taking on higher financial risk, endowment managers generated high returns for a time—but at the cost of intensifying colleges' exposure to the rampant volatility of the global capital markets. Resulting investment losses, endowment declines, and liquidity squeezes have jeopardized the very security of income that has traditionally defined what an endowment is.

- **Far from being innocent victims of the financial crisis, endowments helped enable it.** Much attention is rightly being paid to the role of for-profit financial institutions in provoking the recent financial crisis in the weakly regulated "shadow banking system." But the role of nonprofit institutional investors in heightening risk in the capital markets requires much closer scrutiny as well. Given the scale of capital under their control and the academic credibility they lend to high-risk investment strategies, the influence of college endowments on financial markets extends far beyond the ivory tower.

  By engaging in speculative trading tactics, using exotic derivatives, deploying leverage, and investing in opaque, illiquid, over-crowded asset classes such as commodities, hedge funds and private equity, endowments played a role in magnifying certain systemic risks in the capital markets. Illiquidity in particular forced endowments to sell what few liquid holdings they had into tumbling markets, magnifying volatile price declines even further. The widespread use of borrowed money amplified endowment losses just as it had magnified gains in the past.

  The seeming success and sophistication of the Endowment Model also encouraged other institutional investors and their advisers—smaller endowments, pension funds, foundations, investment consultants, and asset managers—to imitate these high-risk strategies and place more assets into the shadow banking system.

Wall Street's influence has undermined endowment stewardship.

Although administrators, trustees and endowment managers at colleges and universities have consistently blamed the financial crisis for their recent woes, endowments are hardly innocent victims.

- **Conflicts of interest on governing boards weaken independent oversight of investments.** College governing boards have failed to guarantee strong oversight of the Endowment Model by relying heavily upon trustees and committee members drawn from business and financial services, many from the alternative investment industry. The report begins to document the predominance of business and finance professionals on college boards and the numerous potential conflicts of interest that arise when the investment firms of trustees from the finance industry provide investment management services to the very institutions on whose boards they serve.

  To take only one example, Dartmouth's board has included more than half a dozen trustees whose firms have managed a total of well over $100 million in investments for the endowment, over the last five years. Even when there are not potential conflicts of interest, the oversight abilities of many trustees and investment committee members seem to have diminished because of their professional connections to the shadow banking system or their corporate directorships. By working in bailout banks, venture capital,

hedge funds, private equity, and other alternative asset management firms, many trustees may be de-sensitized to the risks associated with exotic, illiquid investments that they deem "normal" business activities.

- **The rise of the CIO has ratified a culture of risk-taking and excessive compensation.** The complexity of investments under the Endowment Model has spawned a new class of highly compensated investment officers on campus. Whereas a decade ago, only one of the schools in our study had a chief investment officer (CIO), today five out of six do. CIOs and investment officers from investment banks and consulting firms are now wooed by colleges with some of the highest compensation packages in the nonprofit sector. The increasingly intertwined worlds of higher education and high finance reflect how the culture of stewardship in nonprofit endowment management has been eroded by a Wall Street culture focused on profitable investment returns as if they were central to colleges' institutional missions.

The full costs of the Endowment Model of Investing are much greater than the short-term value of endowment declines.

Although they had little responsibility for endowment management or oversight, students, faculty, staff, alumni, and local communities are bearing the brunt of the Endowment Model's consequences: from widening pay inequity to demoralizing layoffs, hours and benefits cuts, and hiring and pay freezes; from program cuts to reduced student services; from construction delays and stalled economic development to forgone tax revenues. Because these six schools are among the very largest employers in their communities, the widening pay gap between over-compensated senior administrators and more modestly compensated staff not only distorts pay structures on campus but also deepens social inequality within surrounding communities.

By working in bailout banks, venture capital, hedge funds, private equity, and other alternative asset management firms, many trustees may be de-sensitized to the risks associated with exotic, illiquid investments that they deem "normal" business activities.

- **Layoffs and reductions in force have wider negative economic impacts.** Layoffs and reductions in force as a result of endowment declines serve to magnify growing income gaps in disproportionate ways, contributing to regional unemployment and scarring communities economically in ways that are difficult to quantify. Nevertheless, the report provides conservative preliminary estimates of the regional economic impacts due to announced layoffs and positions eliminated:
  - nearly $135 million in lost annual economic activity in the Boston metropolitan region
  - more than $30 million in lost annual economic activity in the Upper Valley
- **Program cutbacks and stalled project plans negatively affect communities.** The sudden postponement of planned construction projects, most notably Harvard's ambitious Allston Initiative, translates into lost jobs, broken promises, and diminished opportunities for community economic development. Based solely on potential earnings from the anticipated jobs that fail to materialize from the Allston delays, the report conservatively estimates that more than $860 million in expected economic activity will be lost over the next three years. Longer delays will deepen community economic losses. Proposals to cut back educational programs and to close institutions such as the Rose Art Museum at Brandeis University have weakened community cultural development in less readily quantifiable, but no less important ways

- **Tax-exemption is costly to communities.**
  The public pays for colleges' tax-exempt status in multiple ways, supposedly in exchange for the public benefits that colleges provide. The tax revenue that cities, states and the federal government have forgone because of tax-exemption has allowed college endowments to accumulate considerable wealth.

  - **PILOTs and Forgone Property Tax Revenue**
    As major property holders in their communities, the six schools in our study own tax-exempt real estate worth more than $10.6 billion, yet collectively they made negotiated payments in lieu of taxes (PILOTs) totaling less than 5% of the $235 million in taxes they would owe if they did not have the privilege of their tax-exempt status. Some schools make no PILOTs whatsoever.

  - **Tax-Deductible Endowment Gifts and Gains**
    Gifts to endowment are tax-deductible to donors, and investment gains and income that endowments generate are tax-exempt. Endowment managers can therefore rapidly trade without considering the potential tax consequences of their investment decisions

  - **Indirect Arbitrage Using Tax-Exempt Debt**
    Tax-exempt bonds have allowed colleges to borrow at low interest rates while keeping their endowment assets fully invested in high-risk, high-return investments. Endowments pocket the difference in yields tax free, while investors in tax-exempt bonds also receive favorable tax treatment on income. Congressional leaders and the Congressional Budget Office are exploring how colleges benefit from this indirect tax arbitrage when they use tax-exempt bond proceeds for operating expenses in order to use other investments to chase higher rates of return. Because of the excessive levels of illiquidity in their investment portfolios, colleges have increasingly turned to the bond markets for cash.

From Systemic Risk to Sustainability

The Endowment Model of Investing is broken. Whatever long-term gains it may have produced for colleges and universities in the past must now be weighed more fully against its costs—to campuses, to communities, and to the wider financial system that has come under such severe stress. The financial crisis has revealed that the risks of the Endowment Model of Investing—of volatility and illiquidity—are much higher than previously understood, particularly when amplified by the use of leverage. This report analyzes those risks but also insists that a full understanding of the costs and consequences of the Endowment Model must go beyond narrow discussions of risks and returns merely at the level of the portfolio. As long-term investors, colleges and universities have an important stake in the sustainability of both the wider financial system and the broader economies in which they participate. Rather than contributing to systemic risk, endowments should therefore embrace their role as nonprofit stewards of sustainability. Rather than helping to finance the shadow banking system, endowments should provide models for transparency, accountability and investor responsibility.

By giving academic credibility and capital to these risky investment strategies, endowments have been as much contributors to the financial crisis as they were victims of it.

The aftermath of the financial crisis clearly calls for a transformation of the Endowment Model of Investing—not simply a return to a more "conservative" investment strategy. Instead, a more sustainable endowment model of investing is needed. Endowments need to foster greater resilience in times of crisis by investing in assets with greater liquidity and lower volatility, and a portion of excess returns generated during good times needs to be set aside in

rainy-day funds for the bad. But more fundamentally, endowments need to pursue "responsible returns" that remain true to their public purpose and nonprofit mission as tax-exempt institutions of higher learning. By integrating sustainability factors into investment decisions and becoming more active owners of their assets, endowments can begin to seize the opportunities of long-term responsible stewardship.

College and university endowments were among the first institutional investors to take their rights and responsibilities as corporate shareowners seriously. In the early 1970s, Harvard and Yale developed the first campus committees on investor responsibility, which developed some of the earliest ethical investment policies for endowments. Since then, they have made recommendations for how endowments should vote their proxies on shareholder resolutions related to social issues and provided models for similar governance structures at dozens of other schools. However, with the rise of the Endowment Model of Investing, its diversification into new asset classes beyond domestic public equities, and the increasing use of external investment managers, committees of investor responsibility designed for an earlier era have watched their relevance erode. Given the social costs of the Endowment Model of Investing, which this report only begins to document, it is high time for colleges and universities not only to reassess risk but also to reclaim this legacy of responsible institutional investment.

TABLE OF CONTENTS

Executive Summary 3

List of Figures 9

List of Tables 9

I. Introduction 11
Six New England Cases 13

II. Historical Emergence of the Endowment Model of Investing 17
From Gifts to Growth 18
From Growth to Globalization: Modern Portfolio Theory and the Demands of Diversification 19

III. Risks and Returns of the Endowment Model of Investing 21
Tax-Exemption, Trading, and Volatility 22
Liquidity and Leverage 23
Lock-ups and Liquidity Squeezes 25
Fully Invested: Public Financing and Indirect Tax Arbitrage 36

IV. Stewardship Crisis and the Culture of Risk 40
Board Composition and Conflicts 40
The Cult of the CIO and the Rise of Academic Finance Officers 45

V. Social Consequences and Costs 56
Workforce Compensation Trends 57
Economic Impact of Reductions in Force 60
Community Costs of Tax-Exemption 62
The Promise and Reality of Harvard's Allston Initiative 63

VI. From Systemic Risk to Sustainability 67

Endnotes 69

Appendices 78

Bibliography 89

LIST OF FIGURES

Figure 1 Decline in Endowment Value during Financial Crisis, 2008–2009 14
Figure 2 Historical Value of Endowments, 1990–2009 15
Figure 3 Harvard University Fair Value Hierarchy, 2009 26
Figure 4 MIT Asset Allocation, 2004–09 27
Figure 5 MIT Fair Value Hierarchy, 2009 28
Figure 6 Comparative Liquidity 29
Figure 7 Total Investments by Level 30
Figure 8 Boston College Fair Value Hierarchy 2009 31
Figure 9 Boston College Asset Allocation, 2005-09 31
Figure 10 Boston College Historical Endowment Values, 1990–2009 32
Figure 11 Brandeis Historical Endowment Values, 1990–2009 32
Figure 12 Brandeis University Fair Value Hierarchy, 2009 33
Figure 13 Brandeis University Asset Allocation, 2005-09 34
Figure 14 Boston University Fair Value Hierarchy 2009 34
Figure 15 Boston University Historical Endowment Values, 1990–2009 35
Figure 16 Boston University Asset Allocation, 2005–09 36
Figure 17 Total Outstanding Borrowings as of 2009 37
Figure 18 Debt as a Percent of Total Assets, FY 2009 38
Figure 19 Dartmouth College Fair Value Hierarchy, 2009 38
Figure 20 Share of Board Holding an MBA 42
Figure 21 Comparative Composition of Boards of Trustees 43
Figure 22 Dartmouth Historical Endowment Values, 1990–2009 48
Figure 23 Dartmouth College Asset Allocation, 2004–09 49
Figure 24 Harvard Historical Endowment Values, 1990–2009 50
Figure 25 Harvard Endowment Value and Annual Rate of Return 1978-2009 51
Figure 26 Harvard University Asset Allocation, 2005–09 54
Figure 27 Salary Comparison by School 59

LIST OF TABLES

Table 1 Endowment Values 2009 14
Table 2 Endowment Distribution 2009 15
Table 3 Yale University Endowment Asset Allocation 2000–2009 20
Table 4 Harvard Policy Portfolios, 1995–2010 26
Table 5 Divided Loyalties on Dartmouth's Board 41
Table 6 MIT Disclosed Trustee Conflicts of Interest, FY 2008 44
Table 7 Dartmouth 10 Highest Paid Administrators 47
Table 8 Harvard's 10 Highest Paid Administrators Since 2000 52
Table 9 Overall Employment Trends, 2005–2008 57
Table 10 Hourly Unionized Staff Wage Rates, 2000–2009 58
Table 11 Average Annual Increase in Compensation, 2000–2008 60
Table 12 Annual Regional Economic Impacts of Reductions in Force 61
Table 13 Tax Exempt Property and Pilot Payments 63
Table 14 Projected Employment Growth from Phase 1A of Harvard's Allston Development 65
Table 15 Allston Initiative Economic Impacts 66

I. INTRODUCTION

The so-called "Endowment Model of Investing" has been badly bruised by the financial crisis. Traditionally, educational institutions have used endowment funds to generate secure streams of income to support their institutional mission, often by investing in conventional ways, using transparent publicly traded securities, such as stocks, bonds, and highly liquid money-market instruments. Over the last quarter century, however, as financial markets have deregulated and globalized, endowments have shifted their focus from generating secure income to increasing total investment returns. By diversifying their investments into much higher-risk, higher-return, and largely illiquid investments often made in opaque capital markets, wealthy colleges and universities have become important investors in what economists and policymakers have described as the "shadow banking system," a weakly regulated, highly fragile global constellation of institutions deploying capital outside of the regulated banking system in ways that have magnified systemic risks in the financial system.[1]

In embracing higher risk, the Endowment Model generated impressive financial returns over the last two decades, often more than quintupling the size of the largest educational endowments. During the financial crisis, however, the very schools that developed this model, such as Harvard and Yale universities, experienced larger-than-average losses that have wreaked havoc on operational budgets, jeopardized the security of endowment income, compromised long-term planning, and provided a rationale for demoralizing staff reductions. Harvard, with the world's largest educational endowment, experienced investment returns of negative 27.3 percent during fiscal year 2009, and an endowment decline of more than $11 billion. Yale, whose Investments Office is led by the school's highly regarded chief investment officer David Swensen, returned negative 24.6 percent. Rounding out the nation's top-five wealthiest schools, Stanford, Princeton and the University of Texas System all posted similar declines, ranging from -27 to -23 percent. Sizeable investment losses at these five schools alone translated into the destruction of nearly $30 billion in endowment assets, declines worth roughly one-tenth of the total value of all college endowments combined.[2]

Despite the destabilizing effects of endowment performance during the financial crisis, few schools appear to be changing their investment strategies in any fundamental way. Instead, defenders of the Endowment Model—among them academics, endowment managers and investment consultants—continue to point to long-term outperformance as sufficient justification for staying the course. In this view, the long-term benefits of increased risk-taking would seem to outweigh short-term costs. Yale generated 13.4 percent annual returns over the last two decades, while Harvard generated 11.7 percent.[3] However, the costs of endowments' underperformance during the financial crisis include much more than the decline in value of the assets within the endowment portfolios themselves. Social costs in particular—from the tax-exemptions colleges receive on their investment gains, property and publicly financed debt to the economic impact of reductions in force and postponed construction—need to be taken into consideration. This paper provides a preliminary effort at documenting a much fuller understanding of the characteristics, costs and consequences of the Endowment Model of Investing.

Only recently have endowments begun to receive serious attention as economic institutions in their own right, by scholars and financial researchers seeking to understand the sources of their seeming success.[4] In this emerging literature, most writers—whether practitioners, journalists or academic researchers—focus almost exclusively on portfolio-level risk and return as if endowments were locked up in an ivory tower. Quite to the contrary, endowment assets are deeply intertwined with flows of funds across the global economy. Investment decisions and trading behavior of endowment managers can consequently have feedback effects upon financial markets themselves, particularly when increasing endowment capital crowds into alternative asset classes that lack sufficient scale to support such growing risk appetite. The Endowment Model is predicated upon precisely such a shift from investments in relatively transparent, liquid markets for publicly traded equities, bonds and money market instruments to largely illiquid "alternative investments," such as hedge funds, venture capital and other private equity, commodities, private real estate, and other "real assets." At the same time, the influence of the Endowment Model is not confined to the academy. Institutional investors such as pension funds, foundations, and other financial asset managers have increasingly developed imitative investment strategies taken directly from the Endowment Model's playbook, intensifying the crowding phenomenon that has magnified volatility, enhanced risk, and inflated asset-value bubbles in various corners of the capital markets.

Although administrators, trustees and endowment managers at colleges and universities have consistently blamed the financial crisis for their recent woes, endowments are hardly innocent victims. By pursuing these high-risk/high-return strategies, engaging in speculative trading practices, often with exotic derivative instruments, deploying publicly subsidized leverage, and over-allocating to opaque, illiquid, over-crowded alternative asset classes, colleges have joined other institutional investors in a shadow banking system that has magnified systemic risk across capital markets. By giving academic credibility and capital to these risky investment strategies, endowments have been as much contributors to the financial crisis as they were victims of it.[5]

However, those responsible for the management and governance of the Endowment Model of Investing—endowment managers, investment consultants, senior administrators, trustees, and investment committee members—rarely acknowledge responsibility for its costs. Instead, students, faculty, staff, alumni, and local communities bear the severest social and economic consequences of the Endowment Model. As economic institutions, colleges and their endowments directly and indirectly affect the wider economic and social environment in which they are situated. Severe endowment declines during the credit crunch have been used to justify deep budget cuts, diminished endowment payout rates, staff layoffs and other substantial reductions

in force and benefits, provoking heightened social stress on campus and in surrounding communities. College communities have often provided economic and social resilience during economic downturns, but the reductions in force and stalled construction projects accompanying endowment declines have fueled resentment and aggravated simmering town-gown tensions across the country.[6] Wealthy schools go to great lengths to stress the public benefits they generate for their neighborhoods and surrounding communities. Yet at the same time, their nonprofit, tax-exempt status affords colleges the opportunity to forgo substantial taxation, on their property holdings as well as on investment income and gains. Donations to colleges are tax deductible, and tax-exemption allows schools to borrow money in the bond markets at substantially discounted rates. The so-called payments in lieu of taxes, or PILOTs, schools frequently make to cities and states in which they do business pale in comparison to the tax revenue that the public forgoes because of colleges' tax-exempt status. And as we shall see, tax-exemption provides perverse incentives for endowments to view market volatility as a revenue-generating opportunity rather than as a risk to be mitigated. Even in good times, the Endowment Model's seeming success has also had the perverse effect of distorting pay structures and widening the inequality gap between excessively compensated investment officers and senior administrators, on one hand, and the far larger number of staff working for wages that have barely kept pace with inflation, on the other.

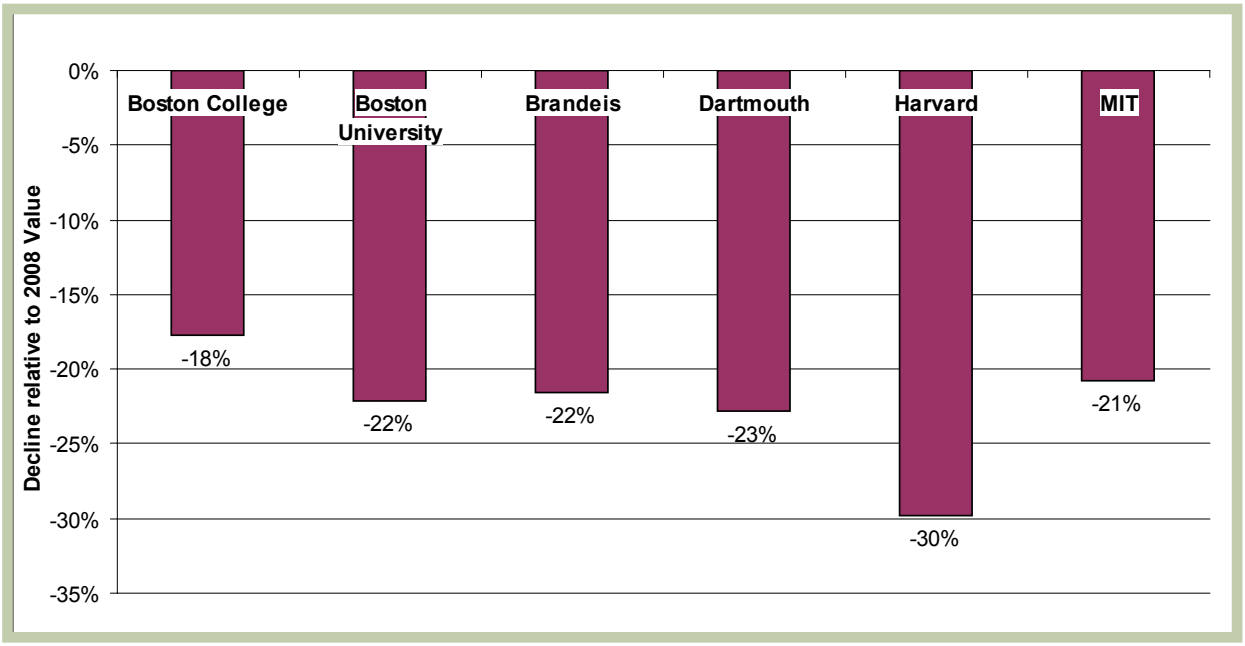
This paper, therefore, seeks to connect the practices in college endowment management with the wider social and economic impacts they generate—on campus, in their local communities, and more broadly in the globalized capital markets in which they fully invest. This broadened perspective casts badly needed light on the ways in which the Endowment Model of Investing has not only hurt endowment values over the short term, but also taken a much longer-term toll on the livelihood of those who find themselves in its orbit.

Six New England Cases

This study analyzes six privately endowed colleges and universities in New England as a set of case studies for exploring deeper connections between educational endowments and their wider social setting. The schools include Boston College, Boston University, Brandeis University, Dartmouth College, Harvard University and the Massachusetts Institute of Technology. Taken together, these six schools control nearly $40 billion in endowment assets, constituting more than 12 percent of the roughly $310 billion held in college and university endowments nationwide at the end of fiscal year 2009. In their local and regional economies, they are all major employers and property holders. Although each has largely embraced the Endowment Model of Investing, they have done so in quite different ways, with asymmetric impacts. In scale, scope and strategy, they therefore provide an instructive range of experiences during the crisis—from the aggressive and early risk-taking of Harvard University to the more imitative investment strategies at schools such as BU and Brandeis with considerably smaller endowments and far less reliance on endowment income for funding operations. Because Harvard has embodied such an influential application of the Endowment Model, it receives disproportionate attention in this study. Harvard highlights how terribly wrong the Endowment Model can go when pushed to certain extremes in a climate of leadership crisis. Its case provides an instructive cautionary tale and a useful comparison to the smaller schools in this study.

The costs of endowments' underperformance during the financial crisis include much more than the decline in value of the assets within the endowment portfolios themselves.

Figure 1 Decline in Endowment Value during Financial Crisis, 2008–2009



Source: 2009 NACUBO-Commonfund Study of Endowments; Tellus Institute analysis.

Although this study begins to provide a much more thoroughgoing accounting of the full costs of the Endowment Model of Investing, fuller accountability requires a much greater degree of transparency. Indeed, one of the greatest challenges in analyzing college finances and investments is the widespread lack of publicly available data about endowment matters. Basic information routinely disclosed by for-profit publicly traded corporations and investment companies—about portfolio holdings, external investment managers and advisers, compensation and fee arrangements, conflicts of interest, investment committee composition, and community impacts—is far too commonly withheld by nonprofit, tax-exempt colleges and universities. When reported, school-specific data are nonstandardized, inconsistent, incomplete and fragmentary, and scattered across municipal, state, SEC and IRS filings, incommensurable annual reports, and costly proprietary financial databases unavailable to the general public.

Within the constraints of existing transparency, Tellus Institute has managed to identify, aggregate, and analyze a variety of school-specific data on endowment growth, investment attributes, asset allocation, liquidity profiles, holdings, borrowings, property assessments, taxation, and PILOTs, and trends in management, governance, and compensation that help explain both characteristics and consequences of the Endowment Model of Investing. In section II, we first describe the forces shaping the historical emergence of the Endowment Model, as the source of endowment capital shifted from gifts to investment growth and as college investment strategy diversified more widely across asset classes into globalized financial markets and more deeply into alternatives. In section III, we then detail the chief risks associated with the Endowment Model, especially illiquidity and volatility, which can be amplified in more systemic ways when borrowed money is used, whether by endowment managers at the portfolio level, by external fund managers in hedge funds and private equity deals, or by schools more broadly when they tap cheap credit through tax-exempt bond markets.

Table 1 Endowment Values 2009

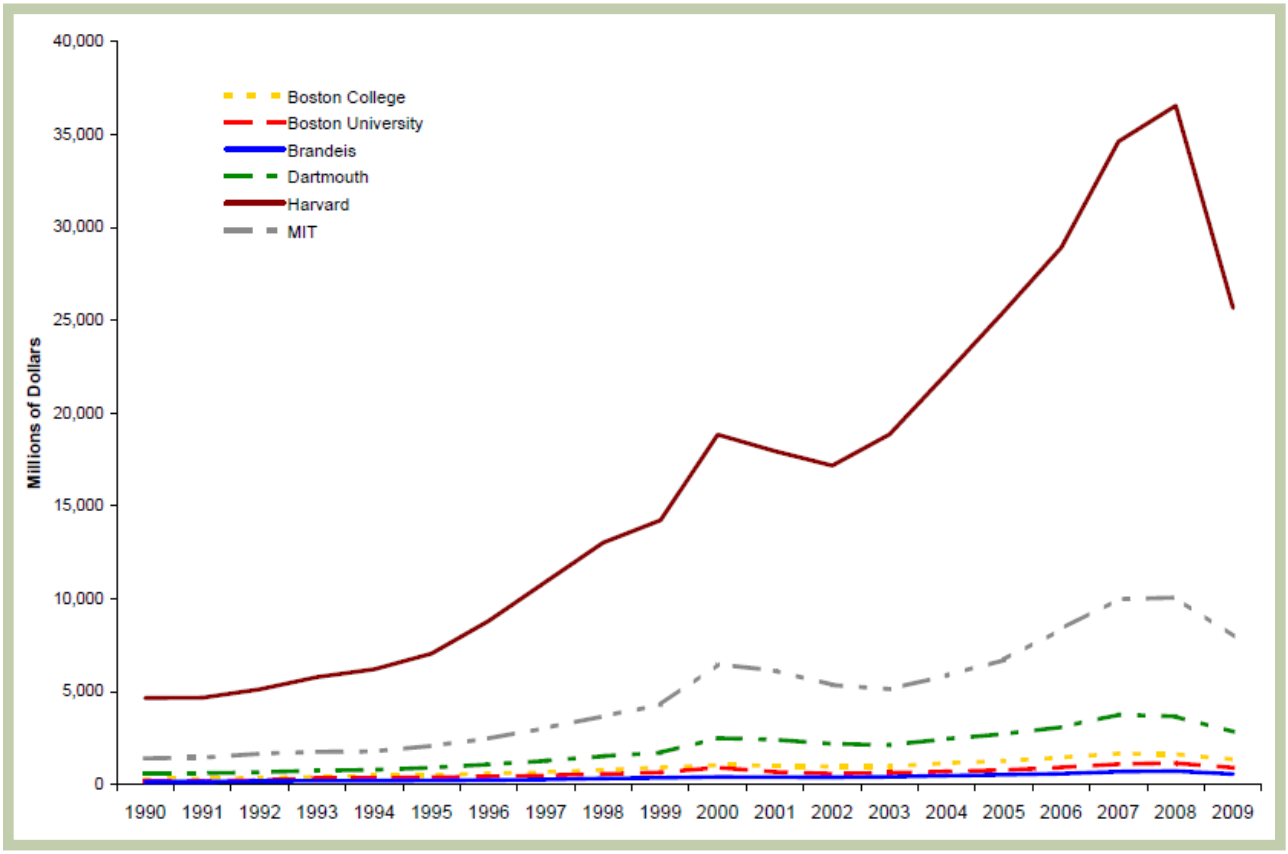
Endowment Values Fiscal Year 2009	
Boston College	$ 1,340,700,000
Boston University	$ 892,139,000
Brandeis University	$ 558,516,000
Dartmouth College	$ 2,824,894,000
Harvard University	$ 25,662,055,000
MIT	$ 7,982,000,000

Source: 2009 NACUBO-Commonfund Study of Endowments

We next turn in the fourth section to the crisis in stewardship that has shaped the culture of risk-taking in higher education. Deep-seated problems in management and governance, especially related to weak endowment oversight, potential trustee conflicts of interest and excessive executive compensation, emerge as important issues that require deeper investigation. We have found that the composition of college boards is dominated by trustees with business and finance backgrounds, and striking numbers of trustees work with investment firms that manage endowment assets for the schools on whose boards they sit. Even when there are not such potential conflicts of interest, the oversight abilities of many trustees and investment committee members seem to have diminished because of their professional connections to the shadow banking system or their corporate directorships. By working in bailout banks, venture capital, hedge funds, private equity, and other alternative asset management firms, many trustees may be de-sensitized to the risks associated with exotic, illiquid investments that they deem "normal" business activities.

As endowment management has become more opaque, the need for day-to-day professional investment management, segregated from typical college treasury functions, has also grown considerably over the last two decades. New highly compensated executive officers in academic administration, such as the chief investment officer (CIO) and the executive vice president, have consequently emerged to play these more specialized financial roles. We analyze this rise of the CIO and the broader cultural shift in endowment management associated with it, from an ethic of prudent stewardship to a much more competitive Wall Street culture. Competition

Figure 2 Historical Value of Endowments, 1990–2009



Source: NACUBO

among schools for "star" CIOs and investment officers has accompanied destabilizing levels of turnover in endowment management, as investment officers seek ever larger pay packages from other schools or leave academia for private asset management.

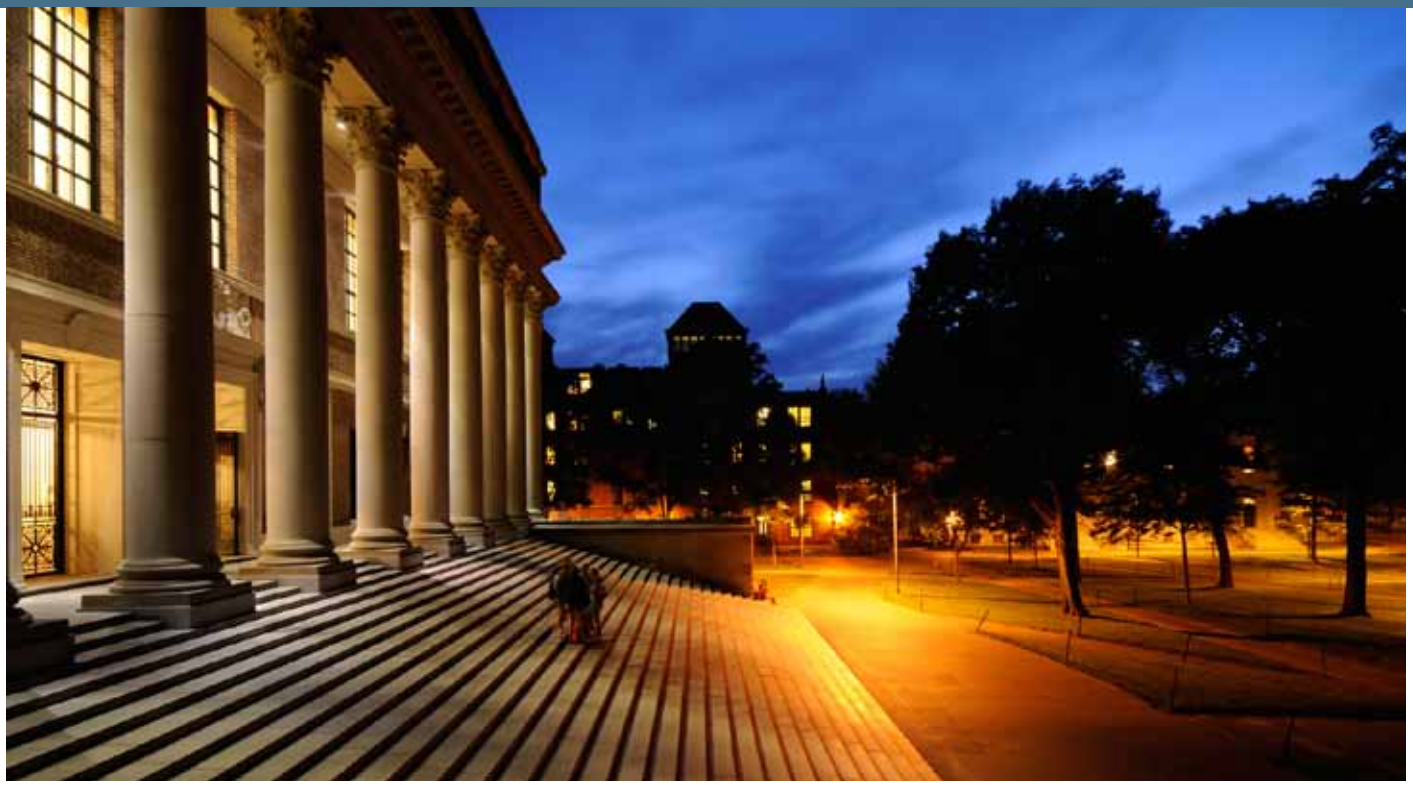
The fifth section examines the wider economic and social effects of the Endowment Model of Investing. We first analyze equity issues related to campus staffing and compensation trends over the last decade and observe widening pay disparities among senior administrators, faculty and staff. Increasing distributions to operating budget due to endowment growth have therefore been unevenly distributed among campus employees, distorting pay structures by excessively rewarding those at the top responsible for the Endowment Model's implementation. Because the six colleges analyzed here are among the largest employers in their communities, distorted pay structures on campus contribute directly to growing social inequality in the Boston metropolitan region and the Upper Valley. At the same time, the costs communities and states must pay in forgone tax revenue due to the nonprofit, tax-exempt status of colleges become higher during periods of economic stress.

We therefore begin to analyze the fiscal impacts of the privileged tax treatment the colleges are accorded through publicly financed debt and concessionary property taxes. We also provide estimates of the economic impacts of workforce reductions and project delays attributed to endowment declines, as they ripple through college communities and regional economies. As preliminary, conservative estimations of these various costs, we calculate more than $220 million in forgone annual property tax revenues in affected communities, approximately $135 million in annual economic losses in the Boston metropolitan area and $30 million in annual economic losses in the Upper Valley from announced layoffs and eliminated positions, and more than $860 million in lost local economic development from a mere three-year delay of Harvard's stalled Allston Initiative in Boston. Over a three-year time horizon, we therefore estimate a minimum of $1.35 billion in economic losses to the affected regions in which these six schools operate, due to the austerity measures taken in light of endowment volatility during the financial crisis. As schools go forward with additional reductions in force and programmatic cutbacks, these preliminary estimates must be adjusted accordingly. The longer-term impacts of these short-term economic losses are more difficult to project and quantify, but the sheer magnitude of these preliminary estimates should make abundantly clear that one-year endowment declines can not only destroy billions of dollars in endowment portfolio values but also affect the livelihoods of thousands of families and impose billions of dollars in costs upon the communities in which colleges operate.

Table 2 Endowment Distribution 2009

School	Endowment Distribution as Percentage of Operating Revenues	Distribution Rate from Endowment
Boston College	11.6%	4.4%
Boston University	2.7%	3.6%
Brandeis University	14.1%	6.2%
Dartmouth College	32.4%	6.2%
Harvard University	38.0%	4.0%
MIT	21.0%	5.5%

Source: Each school's Annual Financial Statements FY 2009; Tellus Institute analysis.
Note: Some schools do not distinguish endowment income from total investment income.



II. HISTORICAL EMERGENCE OF THE ENDOWMENT MODEL OF INVESTING

Although endowments have a centuries-long history, the origins of what today is known as the Endowment Model of Investing remain relatively recent, stretching back only over the last quarter century. Originally, endowments were simply gifts of property bestowed upon an institution to provide it with a source of secure income. Additional gifts constituted the primary source of their growth, and colleges' tax-exempt status allowed donors to give generously while getting generous tax deductions for their gifts. For educational institutions, the role of tax-deductible gift-giving remains an extremely important source of endowment funds, as any college fundraising or development officer can attest; but since the 1970s, finance has superseded fundraising as the main vehicle for the growth of endowments.[7]

Endowment funds have long been invested in a variety of instruments. During the early American republic most endowment funds used mortgages, promissory notes, and real estate as investments of choice until 1830, when the Supreme Court of Massachusetts established guidelines for managing endowments according to the so-called "prudent man" rule in a precedent-setting case involving Harvard College. A trustee's fiduciary duty in the governance of a trust, the court declared in *Harvard College v. Amory*, was based on "how men of prudence, discretion and intelligence manage their own affairs, not in regard to speculation, but in regard to the permanent disposition of their funds, considering the probable income, as well as the probable safety of the capital to be invested."[8] Although common stock might meet the objectives of prudence, fiduciary duty as understood at that time demanded that trustees avoid speculative investments in order to pursue income and preserve capital. The rise of fixed-income securities such as Treasury notes and corporate bonds over the 19th century resonated with the prudent-man rule, leading many endowments to shift the majority of their investments into secured bonds, while maintaining up to a third of their portfolio in real estate and mortgages. The Roaring '20s, however, made high-yielding corporate stock too tempting to avoid, and despite the Wall Street crash of 1929 and the Great Depression that followed, endowments such as

Harvard and Princeton proceeded to add to their corporate stock holdings, with more than 45 percent of their portfolios allocated to equities by the eve of World War II, often at the expense of real estate and mortgages. Following the war, endowments continued to increase their public equity investments, and by the late 1960s the traditional "60/40 endowment" allocation—that is, 60 percent in corporate stocks and 40 percent in bonds—was becoming a commonplace target for colleges and universities.[9]

From Gifts to Growth

It was precisely at this time—at the height of postwar prosperity—that a small, but influential group of financiers, lawyers, academics, endowment trustees, and philanthropic foundation officials began to push for a much more aggressive approach to the management of endowment funds. With support from the Ford Foundation, J. Peter Williamson, a professor of finance at Dartmouth College, and John F. Meck, the vice president and chairman of Dartmouth's Investment Committee, traveled around the country to pay visits to the finance officers at more than 30 college campuses in order to conduct research for one of the most comprehensive studies to date on the management of endowment funds. The data they gathered provided the basis for the so-called "Barker Report," one in a series of decisive publications on educational endowment management sponsored by the Ford Foundation in the late 1960s and early 1970s.[10] Named after Wall Street financier Robert R. Barker, who chaired the Ford Foundation's Advisory Committee on Endowment Management, the Barker Report advocated that endowment trustees shift their investment objectives from securing income to maximizing long-term total return. Emphasizing total return required reconceiving endowment "income" to include not only the actual yield generated from interest and dividends but also the unrealized capital gains from any appreciation in the principal value of securities held in the endowment. Worried that endowments' conservative investments in income-producing securities had missed out on the postwar economic boom, the Barker Report's authors encouraged endowment trustees to cast aside their risk-averse fears of short-term volatility and to embrace growth. They lauded professional asset managers for pursuing growth in a disciplined way and encouraged delegating investment authority to external managers who could seize investment opportunities unavailable to finance officers on campus.

Because the Barker Report confined itself to marketable securities, its strategic approach remained a far cry from the Endowment Model of Investing that would arise in the later era of David Swensen and Jack Meyer. The model for pursuing long-term total return at the time was not Harvard or Yale, but rather the University of Rochester, which had set growth as its investment objective and generated 14.4 percent annual average returns during the decade from 1959 to 1968, outpacing both the report's sample of endowments and the average returns of leading funds balancing stocks and bonds. Nevertheless, by downplaying the importance of risk and volatility and de-emphasizing liquidity, the Barker Report and the other Ford Foundation reports on educational endowment management helped lay the intellectual foundations for a new paradigm of higher-risk, higher-return investment management strategies for nonprofit endowments. The reports and their contributors, especially Barker, Meck, Williamson, William L. Cary, Columbia University law professor and former chairman of the Securities and Exchange Commission under Presidents Kennedy and Johnson, and attorney Craig Bright, also spawned the development of new institutions and legal norms embodying total-return maximization. Among them were the National Association for College and University Business Officers (NACUBO), originally headquartered at Dartmouth, the Common Fund for Nonprofit Organizations, a not-for-profit organization launched with Ford Foundation seed funding to provide joint investment management of endowment funds, and the 1972 Uniform Management of Institutional Funds Act (UMIFA), which codified many of the recommendations of the

Ford Foundation reports into new, more flexible standards of fiduciary duty that opened the door to riskier investment strategies.[11]

From Growth to Globalization: Modern Portfolio Theory and the Demands of Diversification

As colleges increasingly turned to professional investment management and abandoned their traditional focus on secure endowment income in order to pursue growth and total return, professional asset managers were increasingly turning to the tenets of Modern Portfolio Theory for tools and techniques to generate higher risk-adjusted investment returns. Although a thorough discussion of Modern Portfolio Theory is beyond the scope of the current study, its basic elements, as elaborated by the likes of Harry Markowitz, Eugene Fama, Sidney Alexander, William Sharpe, James Tobin, Fischer Black, and Myron Scholes, provided an essential intellectual framework for the development of the modern Endowment Model of Investing.[12] One of the most important aspects of Modern Portfolio Theory is the simple proposition that risk and return are highly correlated, and that with greater risk come higher returns.

Modern Portfolio Theory provides a framework for managing risk at the portfolio level, primarily through diversification. Diversifying involves investing in a diverse array of classes of assets, under the assumption that each asset class has its own risk/return profile that is broadly uncorrelated to the profiles of other asset classes. Although the boundaries of asset classes can be somewhat imprecise and fluid, the practitioners of the Endowment Model of Investing make broad distinctions between traditional asset classes such as cash, or cash equivalents, fixed income (traditionally bonds), and publicly traded equities (traditionally stocks), on one hand, and nontraditional, or "alternative," asset classes, such as private equity and venture capital, hedge funds, and "real assets," from commodities to real estate, on the other hand. Within asset classes, diversification involves gaining broad exposure to representative markets, wherever and whatever they may be. As financial markets have globalized over the last quarter century, diversified investors have widened their geographic exposure accordingly, investing not only in international markets but also increasingly in high-risk "emerging markets," that is, poorer countries where markets have yet to consolidate in stable ways. Because of their fundamentally long-term investment horizon, endowments seemed to have a much higher tolerance for risk precisely because they could weather short-term volatility in pursuit of higher long-term returns.

At the same time, with the development of quantitative techniques for meaningfully pricing option contracts and other derivatives, notably in the Black-Scholes Model (1973), other markets emerged for trading increasingly complex derivative securities. Diversified investors saw in derivatives the promise of controlling their increasing portfolio risk through hedging strategies. David Swensen, who received his Ph.D. in economics from Yale University under James Tobin's mentorship, explicitly applied many of the theoretical insights of Modern Portfolio Theory to endowment management when he returned to Yale to head its Investments Office in 1985. As it happens, Swensen had gone straight to Wall Street to work following his doctoral studies at Yale, first at Salomon Brothers and then at Lehman Brothers, where he was involved in developing derivatives, including one of the first currency exchange-rate swaps. At the time of his return to New Haven, Yale's portfolio included a fairly traditional endowment mixture of equities (65 percent) and bonds (25 percent), with 80 percent invested in domestic markets. Working closely with Yale's Investment Committee, Swensen gradually led the endowment's redesign to a much more radically diversified allocation across asset classes, including increasing exposure to alternative investments, such as "absolute return" hedging strategies, venture capital and private equity, and "real assets," mainly private real estate, commodities and timberland.

The portfolio's later evolution over the last decade can be seen in Table 3, with fixed income and cash allocations reduced to less than 5 percent of the portfolio, domestic equities reduced to 7.5 percent, and the largest allocations going to real assets (now targeted at a staggering 37 percent), private equity, targeted at more than a quarter of the portfolio, and hedge funds using absolute return strategies targeted at 15 percent. Swensen embraced these nontraditional investments because, as Yale's endowment report notes, "[a]lternative 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 report goes on to note that the Yale "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."[13] Although alternative investments in opaque markets carry much higher risks than most traditional asset classes, the premium paid for that risk is ultimately what endowments are banking on over the long haul. Modern Portfolio Theory provided Swensen's team with the belief that their pursuit of higher returns also produced relatively lower volatility, but the financial crisis has revealed that the portfolio's exposure to illiquid assets posed significantly greater short-term risks than expected. At the end of fiscal year 2008, on the eve of the meltdown to follow in September, the Yale endowment's target allocation carried an expected rate of return of 6.4 percent after inflation with a risk of 12.7 percent, measured by the Yale Investments Office as a standard deviation of returns.[14] Yale's investment return of negative 24.6 percent during fiscal year 2009 therefore fell beyond two standard deviations from the model's mean expectation, that is, well beyond a 95-percent probability in a "normal" distribution. Although such volatility was by no means unimaginable, it was highly improbable. Yale's loss was, for David Swensen's mean-variance model, a Black Swan.[15]

Table 3 Yale University Endowment Asset Allocation 2000–2009

Asset Class	2000 Target	2009 Target	2009 Actual
Absolute Return	22.5%	15.0%	24.3%
Domestic Equity	15.0	7.5	7.5
Fixed Income	10.0	4.0	4.0
Foreign Equity	10.0	10.0	9.8
Private Equity	25.0	26.0	24.3
Real Assets	17.5	37.0	32.0
Cash	0.0	0.5	-1.9

Source: Yale University, Yale Endowment Reports, 2000, 2009.

III. RISKS AND RETURNS OF THE ENDOWMENT MODEL OF INVESTING

Diversified asset allocation into these forms of alternative investments has become the hallmark of the Endowment Model of Investing. The "Yale model," as it has been elaborated by David Swensen over the last 25 years, was one of the earliest to integrate Modern Portfolio Theory into endowment management in a rigorous way, but Yale was by no means alone in this endeavor. As we shall see below, Harvard's endowment, first under Walter Cabot in the late 1970s and 1980s and much more concertedly under Jack Meyer during the 1990s, developed very similar diversification and hedging strategies, using alternative assets and complex derivatives. What has made the Yale model distinctive is Swensen's preference to outsource most of the asset management to external managers, with whom he famously negotiates exceptionally favorable terms for the university.[16] With the exception of its relatively small allocation to fixed income, which is managed in house, the Yale Investments Office serves more as a manager of managers, monitoring their performance and refining the portfolio's asset allocation, on a very active basis. Since the 1970s, by contrast, Harvard has managed most of its endowment through an affiliated investment management firm, Harvard Management Co. Rather than outsource its portfolio management, Harvard created its very own trading floor and incubated a constellation of separately incorporated investment companies—giving its investment operations the look and feel of a sophisticated hedge-fund complex. Only with Meyer's recent departure and the exodus of many of his star managers and traders to outside firms has Harvard evolved into a de-facto "hybrid model," mixing internal and external management.[17]

Regardless of differences in structure or organization, America's wealthiest endowments provided a new model for other endowments and institutional investors to emulate because their exposure to high-risk alternatives generated enviable long-term returns. And as Modern Portfolio Theory implied and Swensen repeatedly stressed in his annual report on the Yale endowment, they appeared to be beating their benchmarks with less volatility. Because endowments such as Harvard and Yale had limited their exposure to domestic public equities, they

managed to avoid the worst damage done by the tech bubble's bursting in 2000. Institutional investors that had suffered from their exposure to U.S. domestic equities during the tech run-up found in the Endowment Model a potential way to avoid the negative effects of another major market correction and the promise of winning back their losses. Consequently, as one observer noted even before the financial crisis was unleashed, "U.S. College and University endowments rushed headlong into hedge funds and other alternatives when the [1990s] bull market ended."[18] Along with pension funds, investment banks and other institutional investors, endowments using alternative investments helped to capitalize what numerous scholars have described as a "shadow banking system."[19] It took the financial crisis for many of those responsible for these strategies to take a fuller measure of the risks they were taking by plunging into alternative investments, without adequate regulation or transparency. The Endowment Model of Investing failed to control volatility, and its leading exemplars generated performance far worse during the crisis than investors that focused on security of income over growth.[20] Although there are numerous risks embedded in the Endowment Model, we focus primarily on volatility, illiquidity in hedge funds and private equity, and the ways that leverage and lack of transparency can magnify risks both to endowment portfolios and in the capital markets. As Harvard's Chief Financial Officer Daniel Shore and Treasurer James Rothenberg noted in their most recent financial report, "Like many other institutions, we have been reminded during the past year about the volatility of markets and the need to pay close attention to managing financial risk."[21]

The specific nature of risk depends very much on the asset class to which it is correlated. Within real assets, such as oil and gas, for example, colleges have become increasingly involved in commodities futures markets even though endowments themselves are not physical commodity traders. Instead, endowments invest in commodity derivatives as an extension of diversification strategies and asset allocation policies; commodities are viewed as a class of assets "uncorrelated" with other asset classes in which endowments invest. However, in the words of one vocal critic, the involvement of endowments in the commodities markets had transformed them into "index speculators," who were distorting short-term price-discovery mechanisms that link the futures and spot markets.[22] Whether the relatively recent entry of diversifying institutional investors into commodities futures markets contributed to the inflationary pressures on commodity prices that occurred from 2002 to 2008 is the subject of considerable debate, but it is clear that the trading volumes of futures contracts and of derivatives on unregulated over-the-counter (OTC) markets increased substantially during this period.[23] Without greater transparency on OTC and other markets exempt from oversight by the Commodity Futures Trading Commission, it is difficult to analyze the degree of systemic risk posed to commodities markets by the flood of institutional investment into them over the last decade. Nevertheless, it is widely acknowledged that endowments joined pension funds, sovereign wealth funds, and hedge funds in crowding into what had historically been relatively small trading markets during a moment of historic price volatility.[24] Many endowments were using derivatives to place bets precisely on those price movements. This is simply one example where the involvement of endowments and other institutional investors in markets where they have not traditionally invested can create unexpected spillover risks within those markets themselves—in the guise of portfolio risk management.

Tax-Exemption, Trading, and Volatility

As long-term investors, few endowments would consider themselves to be speculators, but in many ways the Endowment Model of Investing encourages speculative behavior that can generate and magnify certain forms of risk. Volatility is a clear example. In order to take advantage of occasional mispricing among asset classes within financial markets, the Endowment

Model's "disciplined diversification" demands active rebalancing of portfolio asset allocations back to their policy targets. Swensen himself has described how colleges' tax-exempt status actually gives endowments a special advantage when it comes to rebalancing because, unlike taxpaying individuals or businesses, they can engage in "frequent trading without adverse tax consequences associated with realized gains."[25] What Swensen likes to call "real-time rebalancing"—and Yale has been known to rebalance its portfolio on a daily basis at times—provides a routine trading technique for regularly harvesting gains. When prices fluctuate widely in turbulent markets and assets become mispriced in more exceptional ways, real-time rebalancing strategies can pay their biggest dividends for endowments. As Swensen observes, "in markets characterized by excess volatility rebalancing holds the potential to boost returns."[26] In other words, the Endowment Model of Investing profits from market volatility, and the public subsidy of tax-exemption actually encourages endowments to trade much more actively, at a greater frequency, velocity and scale, than the average taxpaying investor could ever manage to do. In a perverse way, market stability is thus not in the interests of tax-exempt nonprofits following the Endowment Model even though rebalancing is often understood to be a stabilizing force. "Frequent rebalancing activity," as Swensen puts it, "allows investors to maintain a consistent risk profile and to exploit return-generating opportunities created by excess security price volatility."[27] In pursuing financial returns and mitigating risk within their portfolios, endowments have found little reason to be concerned about broader risks posed to the markets in which they pursue investment opportunities.

At Harvard Management Co., Jack Meyer and his team of traders profited greatly from volatility and magnified Harvard's gains by using borrowed money, known as "leverage," at debt-to-equity ratios reported to be as high as 15 to 1.[28] When Meyer left Harvard in 2005 to launch one of the largest hedge funds in history, taking $500 million in Harvard endowment assets along to manage, the first year of activity at his new firm Convexity Capital Management LLC was widely regarded as a disappointment, and his fund's underperformance was attributed at the time to the relative lack of volatility during a recovering bull market.[29] A gradually increasing market provides conditions in which average market investors—and the economy as a whole—generally benefit, but financial market stability is not how traders such as Meyer generate market-beating returns. Instead, Convexity makes its money, in the words of one observer, off of "arcane trading bets that benefit from volatility," often through trading exotic derivatives such as credit default swaps and cross-currency options.[30] In short, Meyer's investment strategy requires erratic market conditions in order to generate excess returns. It was a strategy he had forged while managing Harvard's endowment, which "was known for making money by betting on small pricing differences between different kinds of securities."[31] Whereas many investors, including numerous hedge funds, had been "tripped up" in 2007 by the "debacle in mortgage lending that spurred wild daily swings in the markets," Convexity profited from the market disequilibria the subprime mess had spawned.[32] And because Convexity manages money for tax-exempt investors such as foundations, endowments and pensions, Meyer's team need not worry about the tax consequences that rapid trading would generate for individuals or businesses investing in taxable accounts. The tax-exempt status of colleges actually incentivizes endowment managers to profit from market instability. In the eyes of the endowment manager, market volatility is simply another trading opportunity.

Liquidity and Leverage

The sort of leverage that Meyer's trading team at Harvard Management Co. used to magnify gains can just as easily magnify losses when those trading bets go wrong, as Harvard would learn from its indirect exposure to leverage in its externally managed hedge fund portfolio. The increasing use of external funds and firms to manage endowment capital has made it much more challenging for colleges to assess with any certainty their full exposure

to the various risks that leverage tends to accentuate.[33] Hedge funds, in particular, often rely on borrowed money to amplify their returns. Because they are typically organized as private partnerships, often domiciled in offshore jurisdictions such as the Cayman Islands, the British Virgin Islands, the Bahamas or Bermuda, hedge funds are largely unregulated investment vehicles. As such, they face minimal disclosure requirements about their investment activities and the levels of risk they actually assume. Hedge-fund investors must consequently exercise high levels of on-going diligence to assure that hedge-fund managers are executing their strategies in alignment with endowments' own interests. Only the largest endowments, such as Yale, Harvard, Princeton and MIT, have the resources necessary to devote to monitoring such opaque investments, so most endowments rely heavily on private investment consulting firms, such as Cambridge Associates, or on so-called managers of managers, such as Commonfund, to monitor their portfolio and steer assets into vetted vehicles. Even the most well-endowed schools often hire investment consulting firms as a complement to their own internal monitoring. Investment consultants have not always provided the backstop that endowments have needed when diving into alternatives, but that has not prevented them from being—even after the crisis—among the most vocal defenders of the use of alternatives in order to enhance endowment returns.[34] Prominent hedge funds whose blowups have affected the endowment community, such as Everest Capital Ltd.'s collapse in the late 1990s and the 2009 fraud at Westridge Capital, were reportedly vetted by several leading investment consulting firms, such as Cambridge and Wilshire Associates.[35] The Endowment Model's insistence on allocating capital to such opaque asset classes introduces new risks that even the most sophisticated institutional investors and their advisers have had trouble managing.

In Harvard's case, too much trust may have been put into external managers who had previously worked on Harvard Management Co.'s staff. Since the late 1990s, many of HMC's most highly compensated officers had left to start their own hedge funds and investment firms, often taking Harvard endowment capital with them to seed their ventures, just as Meyer himself would ultimately do in 2005. One of the most notorious cases was the collapse in summer 2007 of Sowood Capital, the hedge-fund firm launched in 2004 by former Harvard star trader Jeffrey P. Larson, whose bets with derivative contracts, reportedly leveraged at a ratio of 12 to 1, suddenly turned sour, destroying more than half the value of what had been a portfolio worth more than $3 billion in assets, managed largely for foundations, endowments and pension funds.[36] Larson had made more than $17 million a year while working at HMC. When Harvard helped seed the fund of its star trader with an initial investment of $700 million, it gave Sowood the financial equivalent of a seal of approval. Later, at the end of 2006 when management problems began to surface at Sowood, Harvard Management Co.'s new CEO Mohamed El-Erian gave an unusually public vote of confidence to Larson's hedge fund only months before its blowup. In response to Sowood's decision to spin off its private equity arm into a separate firm, Denham Capital Management, El-Erian was quoted in *Financial News* as saying, "Harvard's endowment has benefited from its long-term association with Sowood Capital Management. We believe the proposed institutional changes would serve to further enhance the investment return generation capabilities of both Denham and Sowood."[37] From exposure to its former trader's over-leveraged hedge fund, Harvard was reported to have lost $350 million, more than 1 percent of its then $34.6 billion endowment.[38] Today the university remains heavily invested in a variety of Denham funds, led by Sowood founding partner and former HMC commodities trader Stuart Porter.[39]

Leverage can magnify illiquidity risks that endowments have increasingly taken by investing in alternative assets. Hedge funds, for example, are often classified as "marketable alternatives"

because they traditionally invest in publicly traded securities that can be readily priced and, if need be, liquidated. But when the value of hedge funds' underlying investments falls below acceptable levels of leverage, their lenders can make unexpected calls for more collateral to support the debt they deploy. This is precisely the situation that Sowood Capital faced when its bets went bad, and it turned to Harvard Management Co. for a new infusion of cash to meet its collateral calls. According to the *Wall Street Journal*, Harvard refused to bail out the fund in 2007 even though Harvard and other investors faced the prospect of severe losses.[40] Because the hedge fund's limited partners had made a multiyear commitment to stay invested in Sowood through the end of 2008—in order presumably to encourage a long-term investment strategy—their assets could not be redeemed. They were effectively locked up. Early redemptions from hedge funds, when allowed at all, typically cost investors fees, and during the financial crisis many hedge funds threw up "gate" provisions, suspending investors' rights to make redemptions in an effort to avoid a rush to exit as markets were declining. So although the underlying holdings in hedge funds may be "marketable," an endowment's investment in the hedge fund generally is not liquid. And if the hedge fund uses leverage, then any of its positions may be larger than the collateral posted to support them, magnifying the fund's illiquidity even further. Because hedge funds lack disclosure requirements regarding leverage and liquidity, investors in them, such as endowments, may have much greater exposure to leverage than they would otherwise appear to at the portfolio level.[41]

Lock-ups and Liquidity Squeezes

When Sandra Urie, the president of Cambridge Associates, told *Institutional Investor* magazine that "I don't think in our lifetime we will take liquidity for granted ever, ever again," she was tacitly acknowledging that her investment consulting firm had fully embraced the Endowment Model's preference for illiquid alternative investments, at the cost of more prudent investments that could provide secure income and be converted to cash in times of crisis.[42] During the financial crisis, endowments have had a difficult time managing their liquidity risks, across asset classes, and the most sophisticated practitioners of the Endowment Model have had the hardest times due to their heavy allocations to alternatives. In the most recent NACUBO-Commonfund Study of Endowments, 24 percent of endowments reported having experienced a "liquidity squeeze" during fiscal year 2009, and another 70 percent reported having taken action or anticipated taking action due to a squeeze in liquidity. The largest endowments, with assets over $1 billion, reported experiencing squeezed liquidity at the highest rate (31 percent).[43]

In a January 2010 address to the Endowment Management Forum of the National Association of College and University Business Officers, Jane Mendillo, the current head of Harvard Management Co., echoed Urie's remarks. She observed that many endowment managers had greatly minimized the importance of liquidity and that the Endowment Model's diversification strategies wrongly assumed that asset classes were much less correlated than they proved to be.[44] The long-term investment horizons of endowments led far too many managers to ignore substantial short-term risks posed by being heavily invested in illiquid alternatives and to disregard the basic need for liquidity to produce endowment distributions. As Table 4 highlights, Harvard's policy portfolio under Mendillo now targets a small 2-percent allocation to cash, which departs from the leveraged, negative cash allocation targets established during Meyer's tenure at Harvard Management Co. While the cash target is a noteworthy adjustment to Harvard's policy, it is striking how in nearly all other respects Harvard has, as a matter of policy, maintained or deepened its exposure to illiquid alternatives and other high-risk asset classes since Jack Meyer's departure. Its target allocation to domestic equities has declined from 15 percent to 11 percent, while its targeted exposure to emerging markets has more than doubled from 5 percent to 11 percent since 2005. Absolute return hedging targets have increased 4

percentage points, while fixed income investment targets have been cut in half from more than a quarter of the portfolio in 2005 to less than 15 percent in 2010, despite the fact that fixed income has proven to be one of Harvard's best performing asset classes over the last decade—something Mendillo failed to mention in her annual report when she proceeded to defend Harvard's historical allocations to alternatives.[45] Mendillo's modest re-emphasis on cash by no means reverses the increasing trends toward alternatives and higher-risk asset classes associated with the Endowment Model.

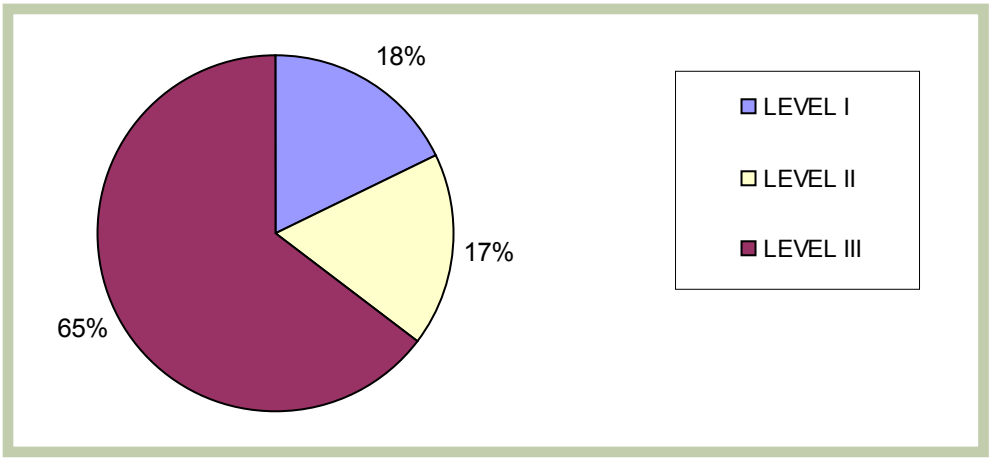
Table 4 Harvard Policy Portfolios, 1995–2010

Harvard University Allocation Policy Evolution (Percent)	*1995*	*2005*	*2010*
Domestic Equities	38	15	11
Foreign Equities	15	10	11
Emerging Markets	5	5	11
Private Equities	12	13	13
Absolute Return	0	12	16
Real Assets–Commodities	6	13	14
Real Assets–Real Estate	7	10	9
Fixed Inc–Domestic Bonds	15	11	4
Fixed Inc–Foreign Bonds	5	5	2
Fixed Inc–High Yield	2	5	2
Fixed Inc–Inflation-Indexed Bonds	0	6	5
Cash	-5	-5	2
TOTAL	**100**	**100**	**100**

Source: Harvard University Financial Report FY 2009

Given Harvard's bruising experience with illiquidity during the financial crisis, it is surprising that a more substantial re-evaluation of the endowment's reliance on alternatives has not affected its targets. Because of Harvard's illiquidity, it had difficulty meeting capital calls from its private-equity fund managers, to whom the university had committed more than $10 billion in future investments.[46] Private equity investments, whether buyout funds or venture capital partnerships, are considerably more illiquid than hedge funds because their underlying assets are not "marketable." Not only are endowments locked up in private equity partnerships, typically in 10-year commitments, but the underlying portfolio companies owned by the investors also therefore cannot be readily bought and sold. A small, opaque secondary market exists for investors looking to buy or sell partnership interests, and given its liquidity squeeze during the credit crisis, Harvard, like many endowments, tried to tap it in fall 2008, by offering $1.5 billion worth of its private-equity stakes for sale—in an effort to raise cash and to lower its uncalled capital commitments to existing funds.[47]

Figure 3 Harvard University Fair Value Hierarchy, 2009

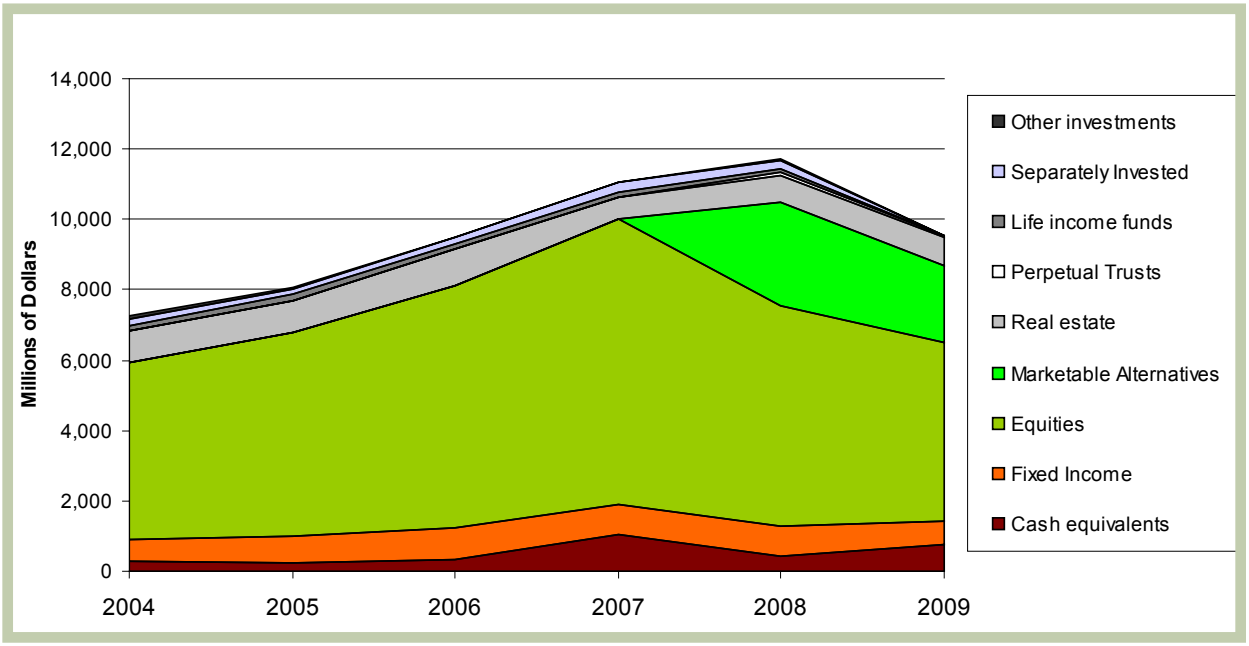


Source: Harvard Financial Report FY 2009
Note: Total Investments reported under three levels of Fair Value Hierarchy, under FAS 157.

However, the bids Harvard received on its portfolio, which reportedly included an interest in a leveraged-buyout fund managed by Bain Capital LLC, were at such a discount to the university's purchase price, that Harvard ultimately pulled its offering off the market.[48] When Harvard's move on the secondary market was first reported, it had been heralded as a "proactive" response from a "sophisticated limited partner," until it became clear that the school was actually joining a flood of sellers, including other large endowments such as Stanford, Duke, and Columbia, as well as fallen financial giants such as Lehman Brothers and AIG, on a market that historically involved less than $35 billion worth of annual sales.[49] This resulted in driving prices down even further, highlighting once again the potential spillover effects from crowding among institutional investors running from the same basic playbook. Later in spring 2009, Harvard tried again and managed to sell some of its private-equity partnership stakes, though still at substantial losses booked at more than $400 million—that is, larger than its 2007 exposure to Sowood Capital's collapse. At the same time Harvard recorded unrealized net losses in private equity of nearly $2 billion, making the asset class one of the worst performing in Harvard's portfolio last year.[50]

That Harvard's decision to sell its private-equity stakes could materially affect price volatility in the secondary market provides a useful reminder that the crowding effects of endowment capital combined with the credibility that endowments give to alternative asset classes can readily stoke systemic risk, under certain conditions. In private equity, one must bear in mind that globally private equity funds manage around $1 trillion, two-thirds of which is managed by buyout funds, with the balance managed by venture capital firms.[51] As segmented markets go, these do not represent terribly large magnitudes of capitalization, especially as investors increasingly treat private equity as an asset class in which they are always ready to allocate their capital. To give one sense of magnitude, U.S. endowments alone control the equivalent asset base of the entire global VC market. Add to educational endowments the roughly $600 billion in capital controlled by U.S. philanthropic endowments, and one begins to approach the scale of the entire global private-equity market. Naturally, at these levels foundations and en-

Figure 4 MIT Asset Allocation, 2004–09

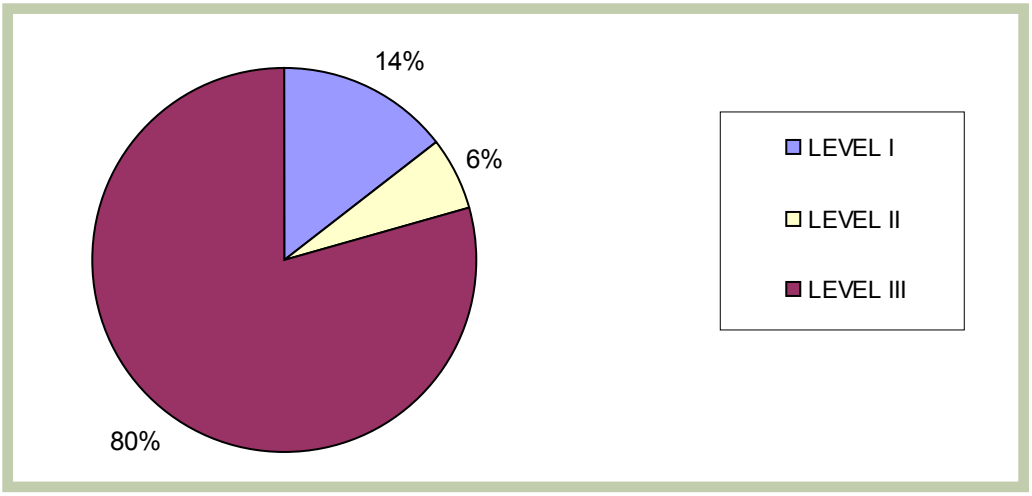


Source: MIT Treasurer's Reports

dowments cannot alone overwhelm the private-equity market even as they commit increasing assets to the space. But the Endowment Model of Investing encourages imitation and capital crowding, and the involvement of influential investors such as Harvard in any asset class or investment vehicle lends credibility to it, whether justified or not. When one adds worldwide pension plan assets into the equation, now estimated at $23 trillion, one begins to understand why this shadow banking system becomes a potent potential source of systemic risk, particularly in opaque markets with relatively low levels of capitalization. The problem quickly becomes one of too much money chasing too few deals.[52]

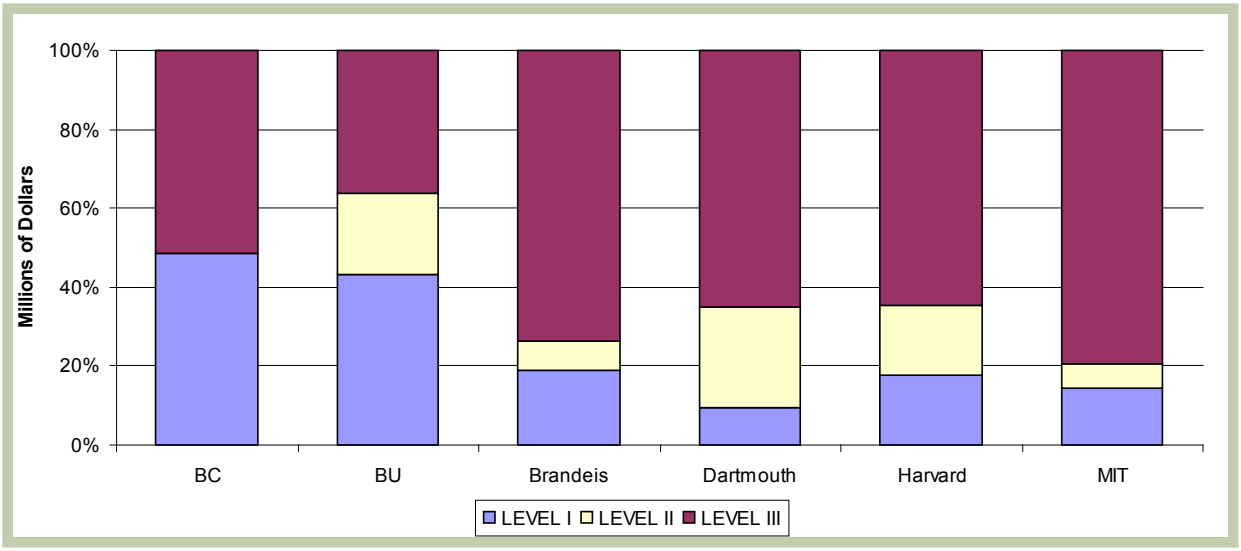
By launching its own series of private equity "funds of funds," the Massachusetts Institute of Technology has enabled smaller endowments to get into the private-equity game over the last decade. Launched in 2000, the MIT Private Equity Fund, LP, was capitalized with more than $160 million committed by a variety of co-investors, generally foundations, endowments, and other nonprofits. MIT made a $50 million initial investment in its own fund, and since that time at least three other MIT Private Equity Funds have been created. The institute continues to invest alongside its funds as opportunities arise, and Boston College has reportedly been one of dozens of co-investors nationwide.[53] By investing in a diversified portfolio of private-equity partnerships, spanning venture capital, leveraged-buyout funds, international funds and midstage growth funds, MITIMCo's private equity team essentially applies a version of the Yale model of external management. MIT's private equity investments have increased from $2.1 billion in June 2003 to $4.4 billion in June 2009, though in 2008 the market value had reached more than $8 billion. It is unclear how much of this growth and volatility may be attributed to gains and losses within the various MIT Private Equity Funds or to new capital commitments because the institute provides little-to-no information about the performance or composition of its private-equity funds. Indeed, MIT has a well-documented problem of transparency when it comes to its investments, and it has received a grade of F for endowment transparency on the Sustainable Endowments Institute College Sustainability Report Card.

Figure 5 MIT Fair Value Hierarchy, 2009



Source: MIT Treasurer's Report FY 2009
Note: Total Investments reported under three levels of Fair Value Hierarchy, under FAS 157.

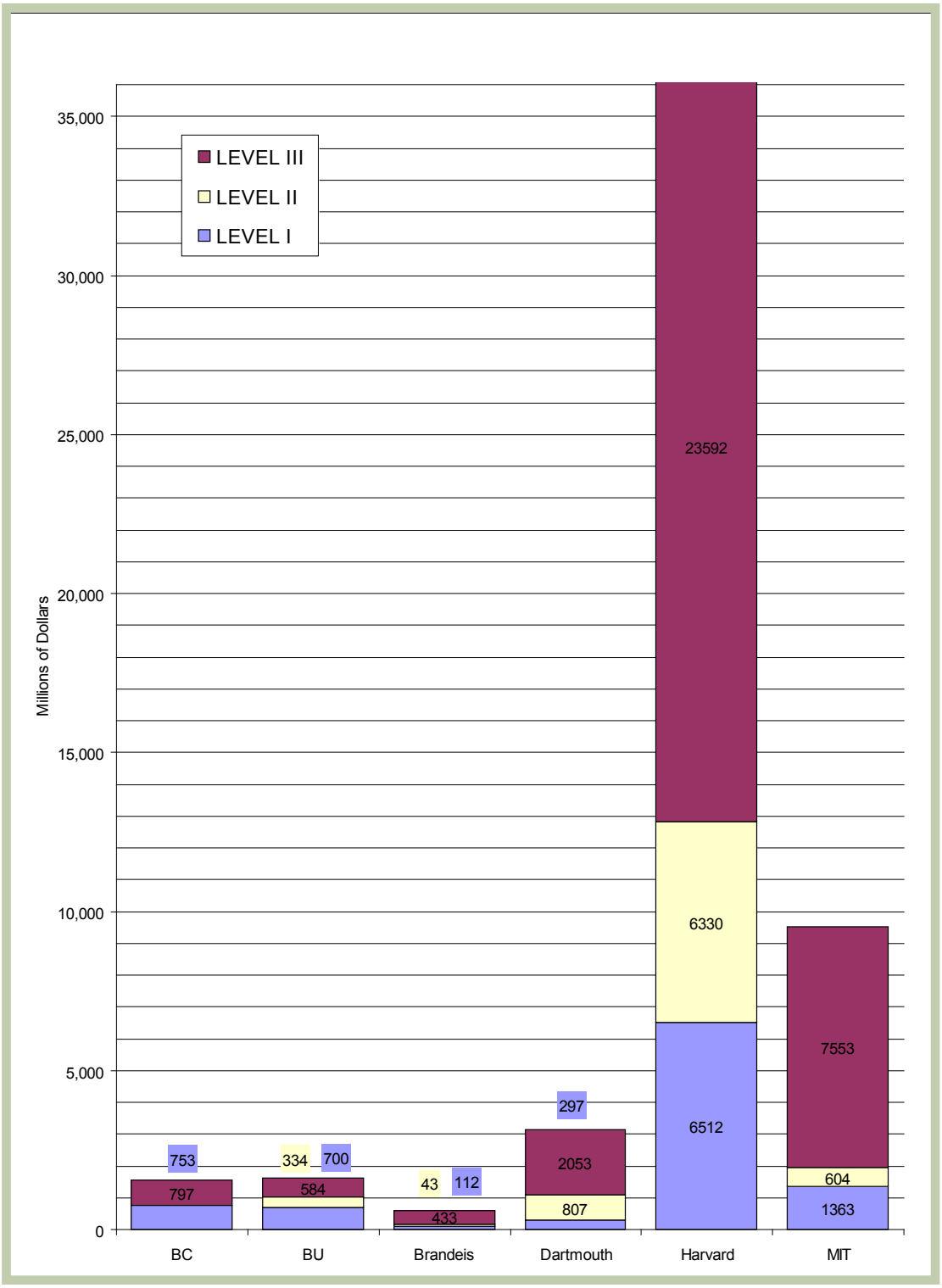
Figure 6 Comparative Liquidity



Source: Each University's Financial Statements for FY 2009
Note: Total Investments reported under three levels of Fair Value Hierarchy, under FAS 157.

Among the six schools analyzed here, MIT has devoted the greatest share of its investment assets to illiquid assets. As Figure 5 shows, a full 80 percent of its total investments are categorized as Level III, meaning their fair value cannot be readily observed on any market. The recent adoption by endowments of the Financial Accounting Standards Board's three-level fair value hierarchy allows us to use self-reported valuations along the three levels as a rough proxy for liquidity. The higher the level assigned to any asset value, the farther removed the assets are from "observable" market conditions, and therefore the more illiquid they are. Level I assets are the most easily valued because they can be readily priced using identical assets traded on active markets, whereas Level III assets lack a market for pricing and must consequently be assigned values based on assumptions made by the reporting institution. (Level II assets are observable, but on less active markets, using similar but not necessarily identical assets.) Figure 6 provides a visualization of comparative liquidity across our six cases.

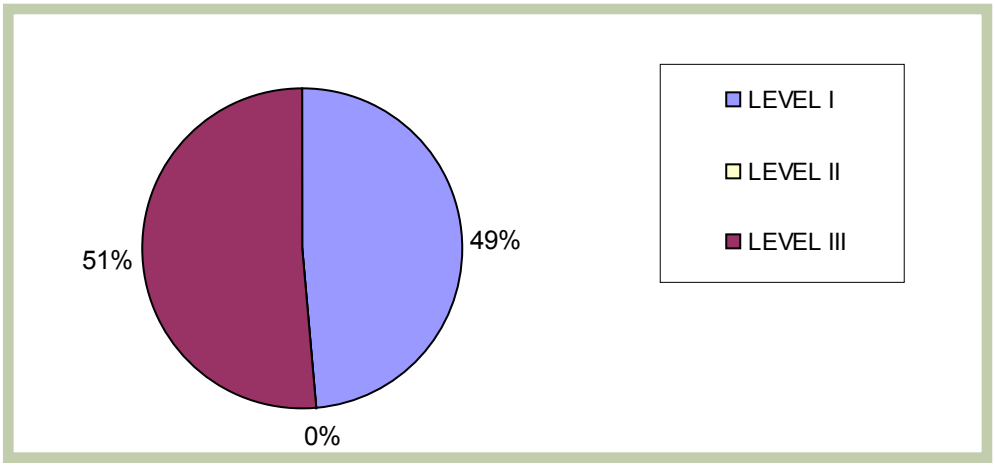
Figure 7 Total Investments by Level



Source: Each University's Financial Statements for FY 2009

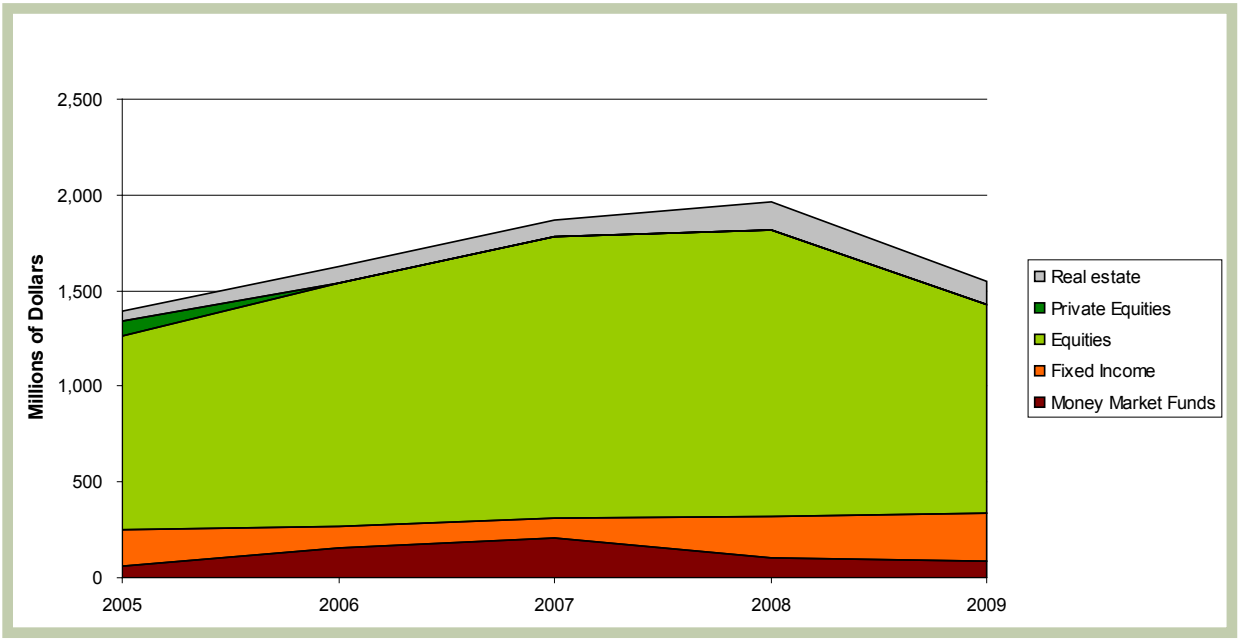
In the wake of the financial crisis, Boston College has emerged with one of the most liquid portfolios in our sample, with roughly half of its portfolio held in Level I assets and the other half in Level III. By dedicating 51 percent of its assets to illiquid investments, BC mirrors the national average allocation to alternatives by endowments, documented in the most recent NACUBO-Commonfund Study of Endowments. However, compared to its larger peers, with endowments worth more than $1 billion, BC commits a smaller percentage to alternatives. Large endowments allocate on average 61 percent of their assets to alternatives. This relative liquidity and underexposure to alternatives correlate to BC's relatively low endowment decline of "only" 18 percent, the lowest of our sample and well below the average national decline of 23 percent.

Figure 8 Boston College Fair Value Hierarchy 2009



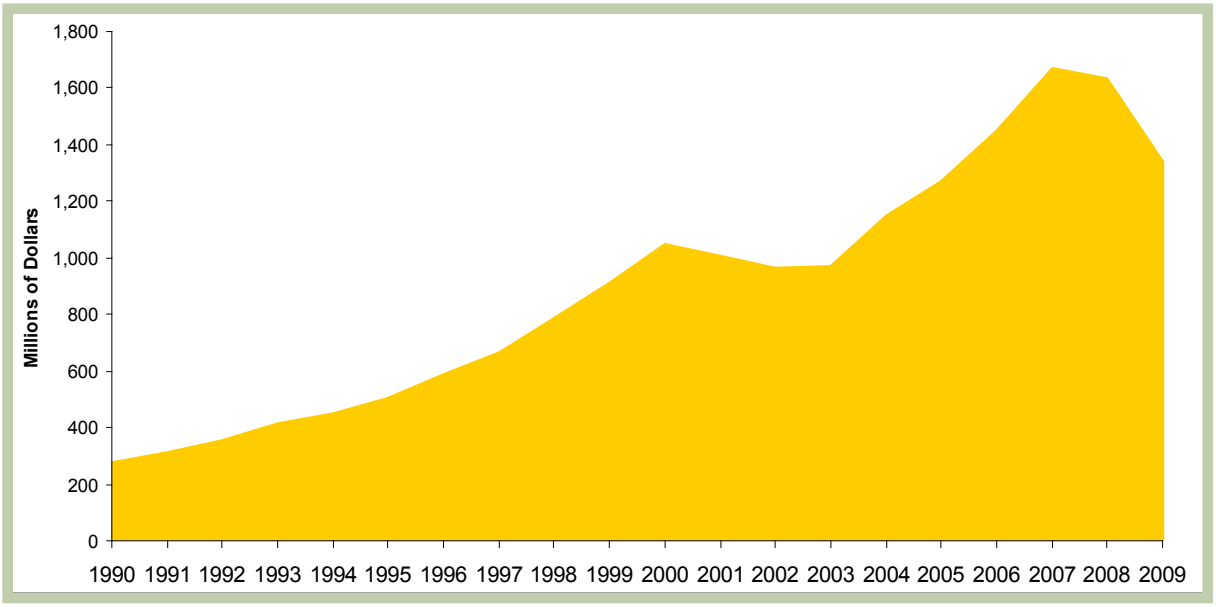
Source: BC Financial Statements FY 2009
Note: Total Investments reported under three levels of Fair Value Hierarchy, under FAS 157.

Figure 9 Boston College Asset Allocation, 2005-09



Source: Boston College Financial Statements

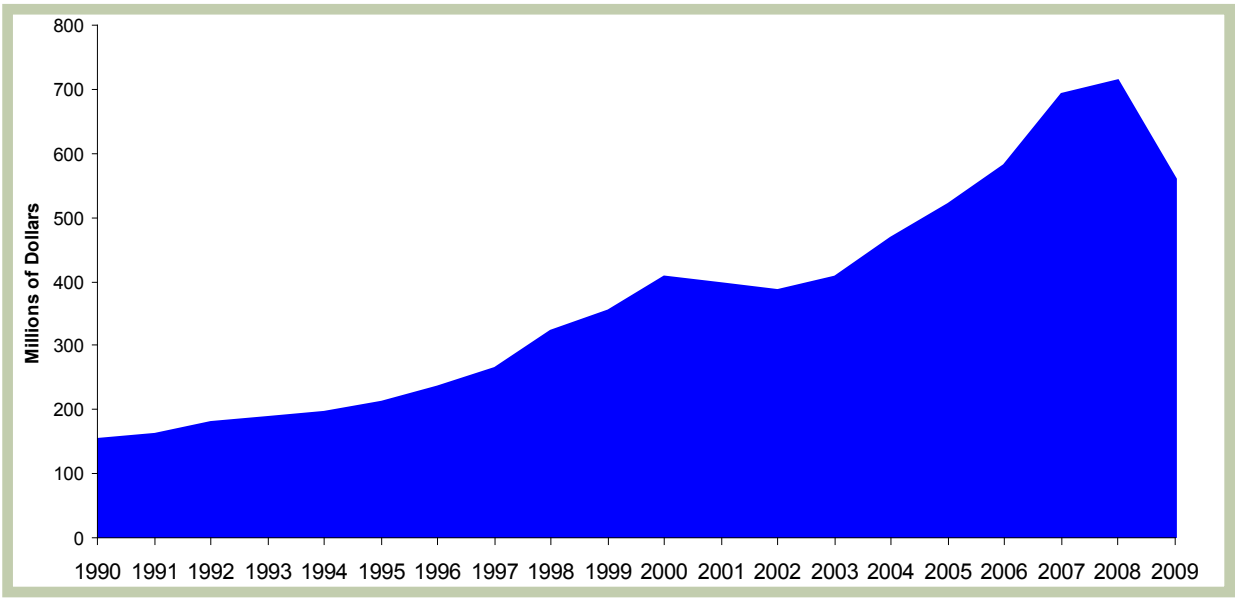
Figure 10 Boston College Historical Endowment Values, 1990–2009



Source: NACUBO

However, because Boston College discloses very little detail about its investments or its strategy (like MIT, it received a grade of F on endowment transparency from the Sustainable Endowments Institute), it remains difficult to evaluate the drivers behind its modestly lower decline. Its allocations to both cash and fixed income investments have been higher than the average for both large endowments and all endowments. However, we have already noted that BC co-invests with MIT in its private equity funds, and it paid MIT nearly $1 million in fees in fiscal year 2008 to participate in them. It also paid venture capital firm Sequoia Capital more than $880,000 in the same year.[54] With more than $190 million in additional private equity commitments reported in its most recent financial report, BC seems poised to increase its allocations to alternatives over the next few years. However, because its reported asset al-

Figure 11 Brandeis Historical Endowment Values, 1990–2009

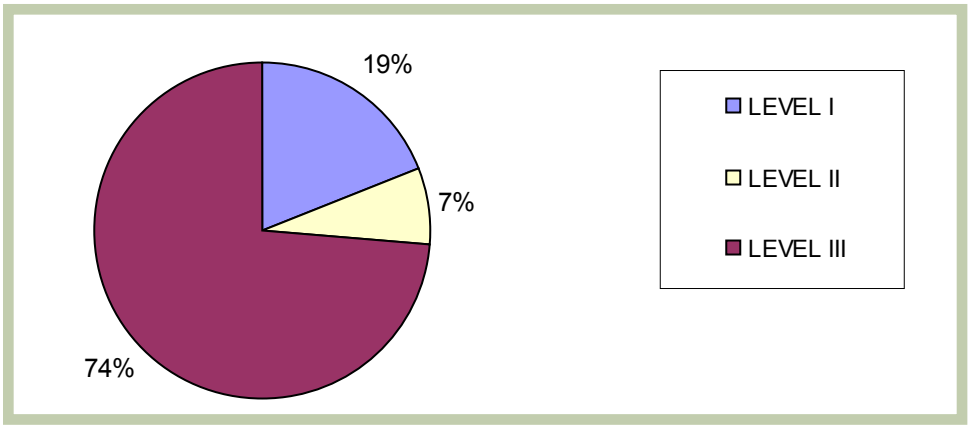


Source: NACUBO

location, visualized in Figure 9, has not isolated private from public equity since 2005, it is no longer possible to track BC's exposure to private equity. Nevertheless, compared to its larger peers' illiquidity, BC has not embraced the Endowment Model with the same zeal. As the only school in our sample that has not announced severe reductions in force, it has also managed to maintain greater resilience by limiting its reliance upon endowment for operating revenue. We calculate less than 12 percent of BC's budget is funded by endowment distributions.[55]

For a school of its size, with an endowment valued at just under $560 million, Brandeis University has had a striking exposure to illiquid asset classes during and after the financial crisis. Nearly three-fourths of its total investments were held in Level III assets at the end of fiscal year 2009, while less than one-fifth were invested in transparent, liquid markets. The investment return for Brandeis's endowment was "only" negative 17 percent during fiscal year 2009, due primarily to an over-allocation to fixed-income and cash investments, which constituted 21 percent of the portfolio, more than twice as much as targeted in the university's policy portfolio.[56] After spending and gifts, the total value of the endowment declined 22 percent, from more than $700 million in 2008. It was the drop in donor giving that particularly hurt Brandeis because the school has remained heavily reliant upon annual gifts to fund operating expenses and several of its most generous patrons, including trustee Carl Shapiro, had fallen prey to Bernard Madoff's Ponzi scheme.[57] Brandeis therefore suffered from the Madoff scam without even having a direct investment exposure to it.

Figure 12 Brandeis University Fair Value Hierarchy, 2009



Source: Brandeis University Financial Statements FY 2009

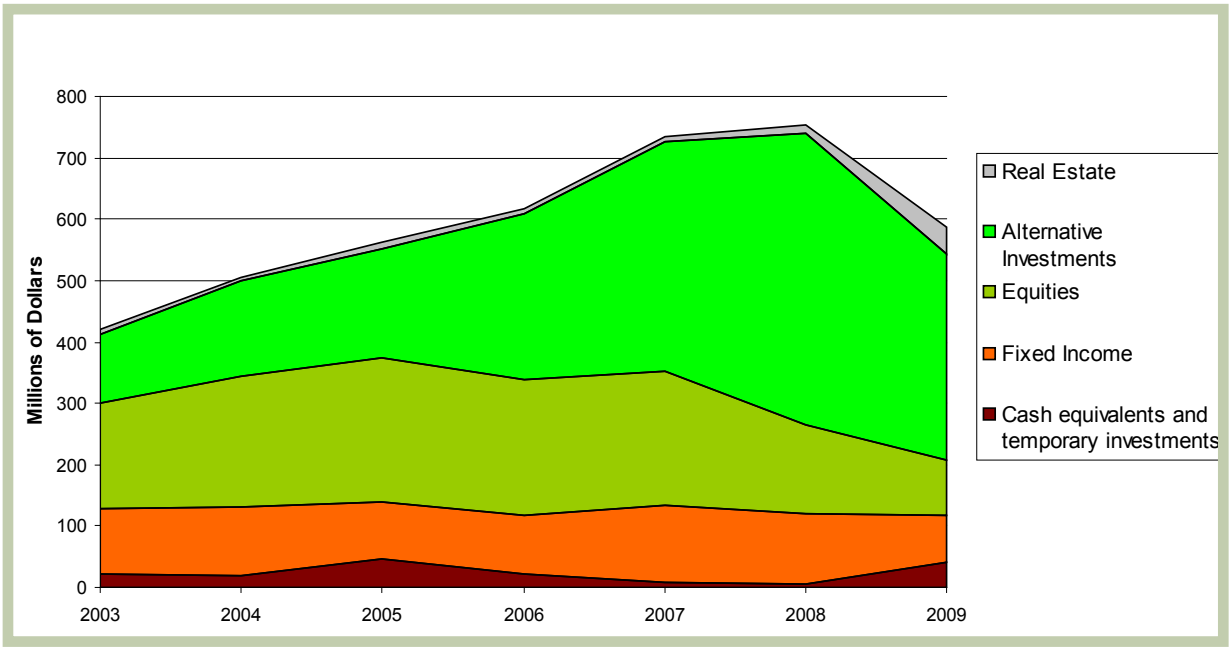
Note: Total Investments reported under three levels of Fair Value Hierarchy, under FAS 157.

Although the university's investment performance was considerably better than that of its larger peers, the endowment's increasing illiquidity made it difficult for the school to use its endowment to buffer it during the crisis. Instead, the Brandeis board made the controversial decision in early 2009 to close the university's Rose Art Museum and sell its 6,000 works of art, which had been appraised for $350 million as recently as 2007 and includes numerous postwar American paintings by Robert Rauschenberg, Roy Lichtenstein, Willem de Kooning, Jasper Johns, and Andy Warhol.[58] Works of art are hardly liquid assets. They have to be auctioned or privately sold, so the decision to sell them provides an indication of just how tight a liquidity squeeze Brandeis was in. At the time Brandeis officials repeatedly invoked legal restrictions against spending from endowment principal as a rationale for liquidating the Rose collection, though none mentioned the illiquidity of the endowment's investments.[59]

When asked about the decision to sell into an exceptionally depressed art market, trustee Michael Steinhardt, a former hedge-fund manager, described the fire-sale strategy as "an intelligent way to redeploy university assets. Every university administration is almost obliged at this point to revisit its budget—Madoff or no Madoff—and consider how the overall economy is affecting them."[60] After a firestorm of criticism, Brandeis President Jehuda Reinharz agreed to keep the museum open but left open the option of selling individual pieces from the collection. Three of the Museum's overseers, including a Rose family member, filed suit in Massachusetts

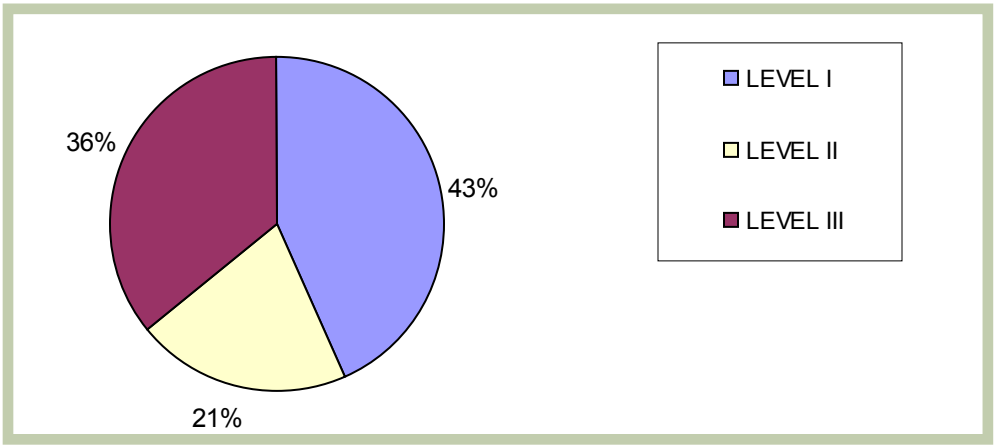
state court to prevent the university from either closing the Rose or selling any of the pieces from its collections. Jonathan Lee, chair of the museum's overseers and a party to the suit, was quoted at the time as saying, "The university looks at this from a business perspective. This is a valuable asset, and they are going to rebalance their portfolio, as if they owned a timber stand in North Carolina. It is wrong to sell off a long-term cultural asset when you have a short-term financial problem."[61] The case of Brandeis highlights how vulnerable a university's nonprofit cultural and educational mission can be when constrained by the Endowment Model's imperative of investment illiquidity.

Figure 13 Brandeis University Asset Allocation, 2005-09



Source: Brandeis Financial Statements

Figure 14 Boston University Fair Value Hierarchy 2009



Source: BU Financial Statement FY 2009

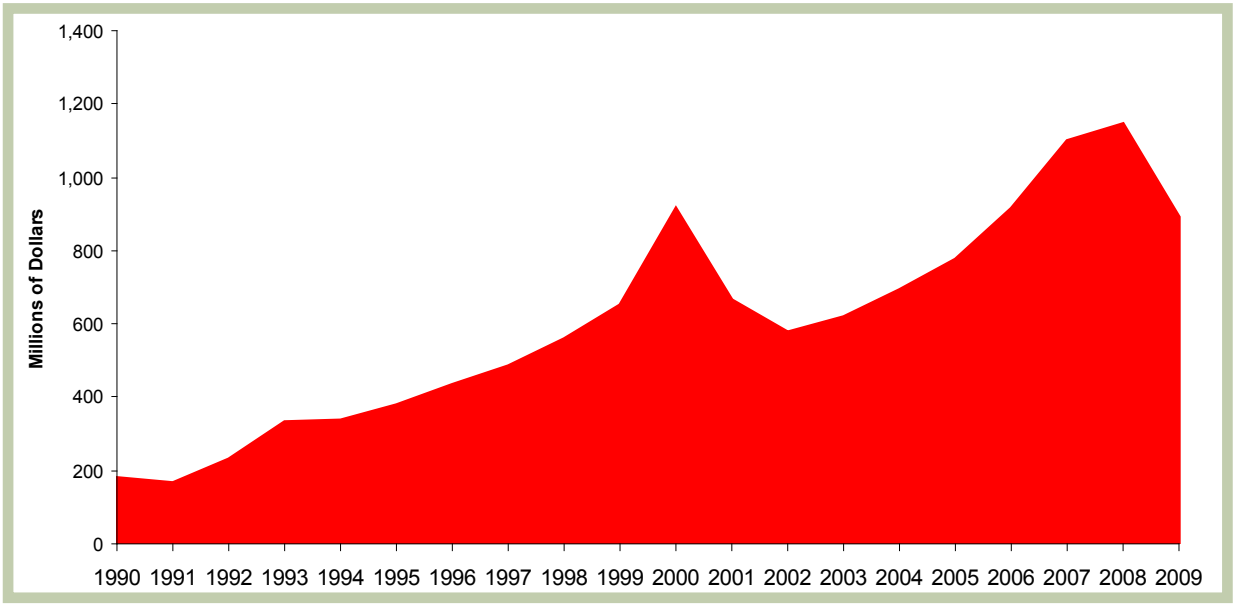
Note: Total Investments reported under three levels of Fair Value Hierarchy, under FAS 157.

At first glance Boston University appears to have a relatively liquid investment portfolio. Among our six cases, it has the lowest share of its total investments in Level III assets. After the worst moments of the financial crisis, BU managed to maintain a full 43 percent of its total investments in Level I assets, but it did so by taking on the highest percentage of debt of the six cases under review (more than 75 percent of total assets, as seen in Figure 18). In 2008, MassDevelopment issued more than $350 million in tax-exempt bonds for BU, and the revenues that came from

those sales were placed in money market instruments, bringing BU's outstanding borrowings to more than $1.2 billion. Thus, the asset allocation chart found below in Figure 16 shows an unusual increase in both money market assets and total investments over the last two fiscal years even though within the university's total investments, the endowment itself declined 22 percent, from $1.1 billion to $892 million. In other words, BU carries more debt than the value of its entire endowment, creating a liquidity illusion, purchased on cheap credit.

Over the last two and a half decades, Boston University's endowment has increased from less than $200 million in 1990 to more than $1 billion at its peak in 2008, though as the spike in value found in Figure 15 highlights, BU's growth came with considerable volatility. As the tech boom busted, BU's endowment declined more than 36 percent from 2000 to 2002, from more than $900 million to less than $600 million. BU's experience with private equity has been particularly volatile. Unlike MIT, Boston University has made direct venture capital investments through a Community Technology Fund the university had organized as its own subsidiary, dating back to the 1970s. According to Josh Lerner, Antoinette Schoar, and Jialan Wang, BU's decision to do deals directly through the fund, often with BU faculty involvement, rather than through outside partnerships, proved to be perilous, with the university ultimately subsidizing unprofitable companies.[62] The university provides no readily available information about the experience of its Community Technology Fund, and BU does not clearly spell out the performance of its private equity portfolio. At the end of fiscal year 2009, BU reported more than $90 million in capital commitments to private equity and venture capital firms that are to be drawn down over the next six years, amounting to roughly 10 percent of its $919 million endowment.[63]

Figure 15 Boston University Historical Endowment Values, 1990–2009

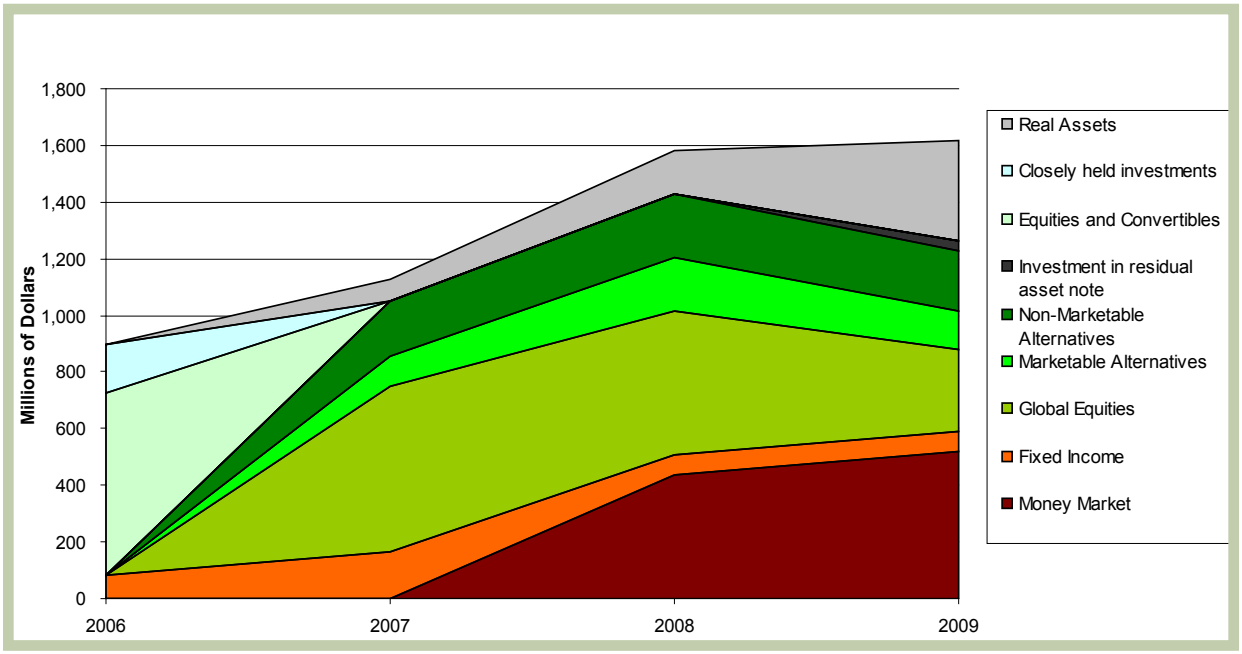


Source: NACUBO

Yet, as the largest school in our sample, with more than 30,000 students, and as the fourth-largest independent, nonprofit university in the country, BU relies much more heavily on student tuition and fees than on endowment for operating revenues. Indeed, of the schools analyzed here, BU is the least dependent upon endowment for its operating budget; less than 3 percent of total revenues come from endowment. In addition to relying least on endowment, BU also pays out the lowest distribution as a percentage of the endowment's value: only 3.6

percent in fiscal year 2008—below the national average of 4.4 percent.[64] On one hand, this low distribution rate buffers the BU budget from the market volatility experienced by endowment, yet on the other hand, below-average payout from endowment invites charges of wealth hoarding, especially given the high cost of tuition at BU. Despite this apparent insulation from endowment volatility, BU has not gone completely unaffected by economic challenges during the Great Recession. BU's president Robert Brown was one of the first college presidents to announce in fall 2008 a hiring freeze and a moratorium on at least $130 million in new construction projects. Boston Medical Center, the primary teaching affiliate of the BU School of Medicine, later in the year announced 250 layoffs as part of more than $60 million in cost-cutting measures.[65] The university faces a $10 million shortfall during the current fiscal year.

Figure 16 Boston University Asset Allocation, 2005–09



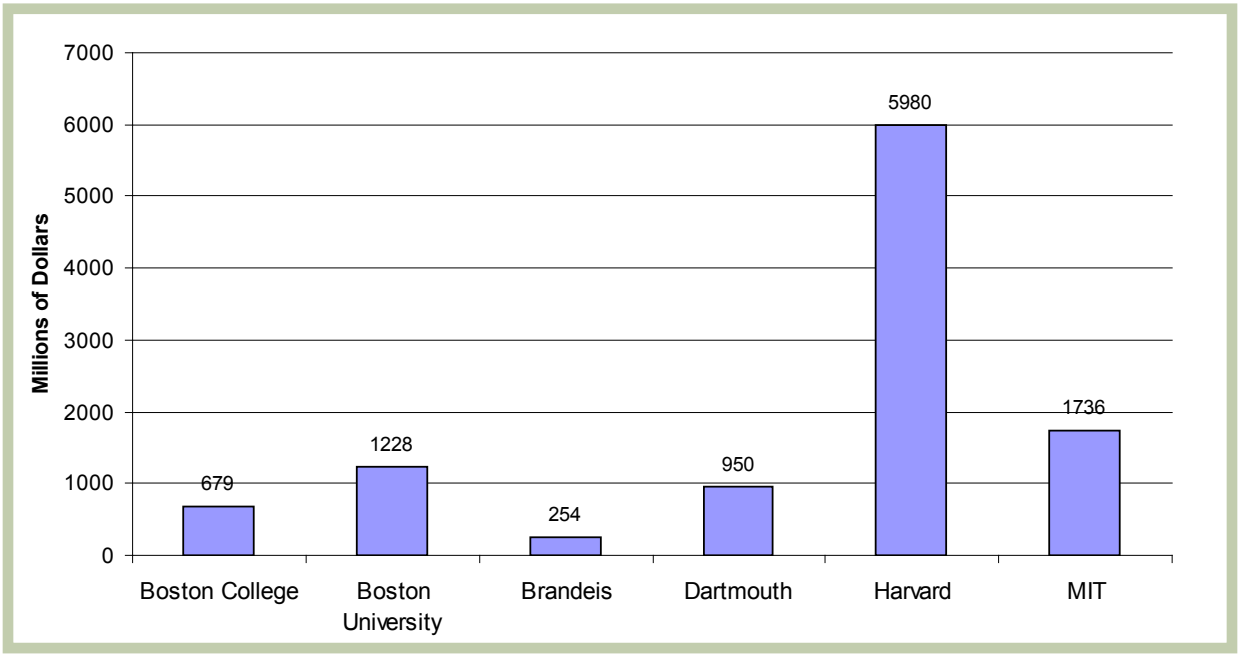
Source: Boston University Financial Statements

Fully Invested: Public Financing and Indirect Tax Arbitrage

BU's indebtedness raises another distinctive feature of nonprofit endowments: their ability to tap bond markets at exceptionally favorable, often tax-exempt rates. Robert L. Culver, head of MassDevelopment, one of the commonwealth of Massachusetts' two main agencies that issue bonds on behalf of educational institutions, has argued "that the greatest contributor to the enormous growth in university endowments and other endowments is not some wealthy person or persons, but the federal government making available low-cost, tax-exempt debt that allowed endowments to remain invested and earn rates in the market as high as 25 percent."[66] Recently, the Congressional Budget Office has issued an analysis of these benefits that colleges and universities receive when they use tax-exempt bond proceeds for operating expenses while keeping other assets fully invested in pursuit of higher rates of return.[67] The CBO and the Joint Committee on Taxation estimate that the cost to the public of allowing colleges and universities to use tax-exempt debt will be approximately $5.5 billion in forgone tax revenues in 2010. According to the CBO, the direct use of tax-exempt bond proceeds to invest in higher yielding assets is an illegal form of arbitrage, but as the report highlights, "To the extent that colleges and universities can earn untaxed returns on investments that are higher than the interest they pay on tax-exempt debt, they are benefiting from a form of 'indirect' tax arbitrage."[68] Although

not illegal, this indirect arbitrage on tax-exempt debt is being closely reviewed by policymakers and legislators. Sen. Charles E. Grassley (R-Iowa), ranking member of the Senate Finance Committee, who requested the CBO analysis, said in a statement reported by *The Chronicle of Higher Education* that the report raises questions "for parents, students, and taxpayers about universities issuing bonds and going into debt when they have money in the bank."[69]

Figure 17 Total Outstanding Borrowings as of 2009

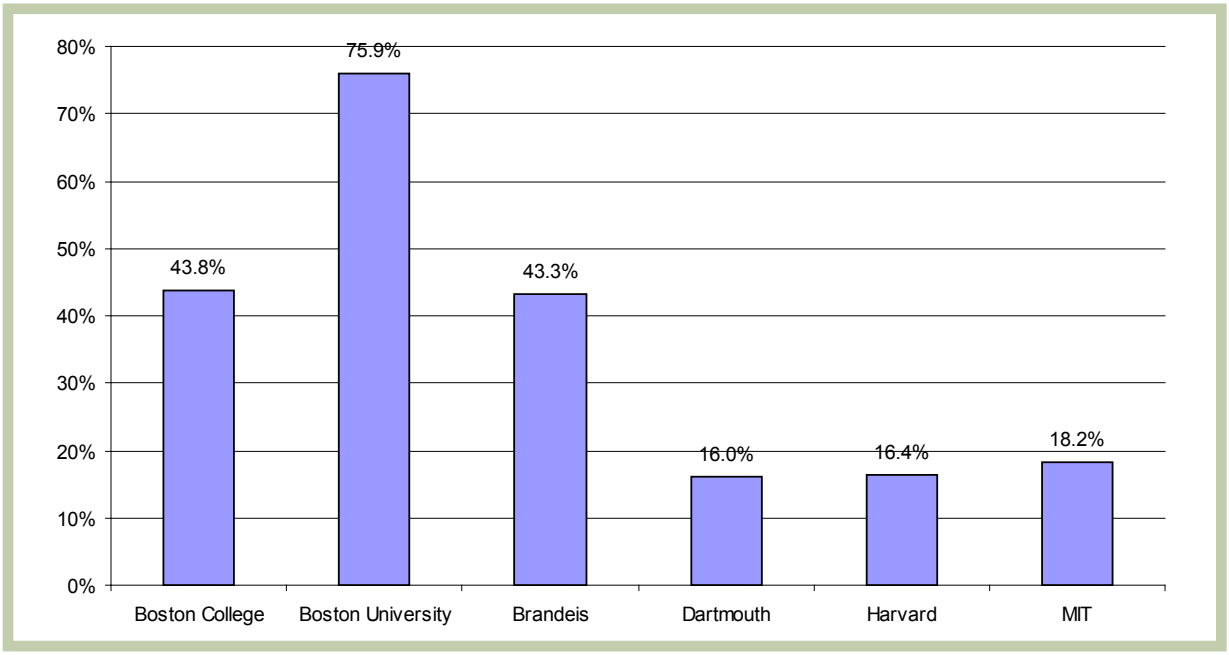


Source: Each school's Annual Financial Statements FY 2009

According to *The New York Times*, many nonprofits had "gambled that income from donations and investments would more than cover their debt service," but the financial crisis suddenly made that trade harder to carry.[70] Given their illiquidity, many endowments turned to public debt markets to generate emergency cash during the crisis or to refinance other debts. NACUBO and Commonfund Institute documented a 54-percent increase in long-term debt held by colleges over the course of fiscal year 2009, with the wealthiest endowments doing the biggest borrowing, increasing their average long-term debt by 62 percent.[71]

After failing to sell $1.5 billion in private-equity stakes on the secondary market in fall 2008, Harvard rushed an unprecedented $2.5 billion bond offering through the Massachusetts Health and Educational Facilities Authority (HEFA) in order to cover its disastrous bets on interest-rate exchange agreements, known as "swaps," which Harvard president Larry Summers had introduced in 2004 as a more aggressive way to invest the university's cash reserves alongside the endowment.[72] The goal was to hedge against possible interest-rate rises on the university's debts, particularly those related to its ambitious plans for expansion into the Boston neighborhood of Allston, across the Charles River from Cambridge. However, with the Federal Reserve reducing interest rates to historic lows during the credit crunch, margin calls for cash collateral, reportedly amounting to $1 billion, came in from Goldman Sachs, JPMorgan Chase & Co. and other banks as Harvard's swaps fell below the value initially agreed upon in 2004. In early December 2008, proceeds from Harvard's bonds were used to pay JPMorgan and Goldman Sachs approximately $100 million to unwind swaps associated with hundreds of millions of dollars of variable-rate borrowings. When the financial crisis had come and gone, not only did Harvard

Figure 18 Debt as a Percent of Total Assets, FY 2009

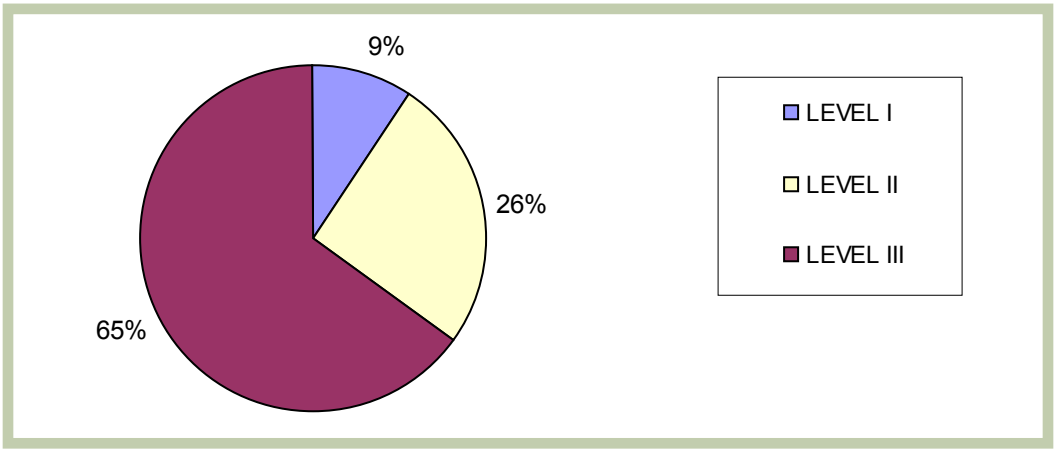


Source: Each school's Annual Financial Statements FY 2009

see its endowment value decline by $11 billion but the school had also lost $1.8 billion in its pooled cash investments, while paying an additional $500 million simply to extricate itself from its losing interest-rate swaps.[73] Earlier this year Harvard floated more than $400 million in tax-exempt bonds, in order to refinance pricier debt and to provide capital for construction projects at Harvard Law School, but not at Allston.[74] Despite sharp endowment declines and outstanding debt totaling more than $6 billion, Harvard has managed to maintain its AAA credit rating, which guarantees it lower interest rates on debt, regardless of whether it is taxable or tax-exempt.

Last spring Moody's, the bond rating agency, issued new guidance for rating colleges and universities' debt, including much more thorough reporting on issues such as liquidity and opaque investment positions.[75] In February 2009 the organization had lowered its outlook on Brandeis's debt to "negative" from "stable," citing the school's "thin" liquidity. In May 2009, Standard & Poor's lowered its rating for Dartmouth College's long-term bonds to AA+ from AAA, as the school planned to issue $415 million in new debt. Of the six schools in our study, Dartmouth has the lowest allocation of Level I investments, as Figure 19 shows.

Figure 19 Dartmouth College Fair Value Hierarchy, 2009



Source: Dartmouth Financial Statements FY 2009

Note: Total Investments reported under three levels of Fair Value Hierarchy, under FAS 157.

At some schools such as MIT looming balloon debt payments of more than $100 million place additional constraints on budgets already strained by diminished endowment distributions. The decisions by senior administrators and trustees repeatedly to turn to the public debt markets for cash, taking full advantage of the privileges of what the CBO termed "indirect tax arbitrage," in order to maintain excessive levels of illiquidity in endowment investments, are important indicators of a more general crisis in stewardship at our six schools, to which we now turn.

IV. STEWARDSHIP CRISIS AND THE CULTURE OF RISK

Although the emergence of the high-risk Endowment Model of Investing has taken place against the backdrop of powerful forces of financial globalization and the influence of Modern Portfolio Theory, its consolidation and influence today at colleges and universities depend vitally on college leaders: senior administrators, trustees, and investment managers, especially the increasingly prominent role of chief investment officer, or CIO. The financial crisis has in many ways been a crisis of stewardship. The precipitous declines endowments have suffered during the credit crisis need to be understood as the logical outcome of the Endowment Model's high risk strategies, but behind the model stand those who are ultimately responsible for its execution: whether as professional money managers, investment officers, affiliated investment management companies, outside managers, or investment consultants, or as the fiduciaries sitting on governing boards and investment committees. We focus on the composition of boards and conflicts of interest among their members and the rise of over-compensated finance officers as two indicators of the increasing culture of risk that has allowed the Endowment Model to flourish and a sense of long-term stewardship to erode.

Board Composition and Conflicts

We have identified multiple governance weaknesses on the boards and investment committees of several of the schools in this study. Leading experts on nonprofit board governance, such as Richard Chait at Harvard University, stress that colleges should simply not do business with the companies of their board members, in order to avoid inevitable distractions and the sense of divided loyalties that arise, to say nothing of appearances of self-dealing and personal enrichment.[76] However, the potential for conflicts of interest, or the appearance of conflicts of interest, is widespread across the schools under consideration. When it comes to weakened endowment oversight, the most glaring problem arises from trustees from the finance industry

whose firms provide investment management services. One of the most disconcerting cases in this respect is that of Dartmouth College, where the sudden departure of CIO David Russ in 2009 created a leadership vacuum over endowment management. The college's investment committee chair and trustee Stephen Mandel has played the CIO role on a voluntary, part-time basis since last summer and will continue to do so until he becomes chair of the board of trustees later this year. At the same time, Mandel's firm, Lone Pine Capital LLC, a well-known hedge-fund complex he founded in 1997, has also managed an investment mandate from the college's endowment valued originally at $10 million. Although the college has a conflict-of-interest policy and is required to disclose such "pecuniary benefit transactions" with the state of New Hampshire, it would seem difficult for fellow trustees to provide proper oversight of investments managed by a trustee serving as the de-facto CIO. Additionally, if Mandel recuses himself from committee or board deliberations related to his firm, then the investment committee must function without its chair.

However, the problem is magnified because Mandel is only one of more than half a dozen Dartmouth trustees whose firms manage multimillion-dollar investments for the endowment, according to the college's filings with the Charitable Trusts Unit of the New Hampshire Department of Justice. Leon Black's firm Apollo Management has reportedly managed at least $40 million in Dartmouth investments. Russell Carson's private equity firm has reportedly received at least $45 million in commitments of capital from Dartmouth. William Helman, IV's venture capital firm Greylock Partners, has reportedly received $10 million investment mandates from the college, while R. Bradford Evans' firm Morgan Stanley has done multiple transactions with the college, varying from investments in international real estate and hedge funds to bond issuances, all at undisclosed levels. P. Andrew McLane and Jonathan Newcomb have also had reported interests in college investments at undisclosed levels. For an endowment of its size—Dartmouth's endowment fell to less than $3 billion in fiscal year 2009—the deep dependence on trustees' own businesses for endowment management seems disproportionate. And because Tellus Institute researched public disclosures with the state of New Hampshire over only the last five years, it is possible that other potential conflicts of interest prior to this period exist.[77]

Table 5 Divided Loyalties on Dartmouth's Board: Endowment Investments in Trustees' Firm

Dartmouth College Disclosed Conflicts of Interest since 2004				
Trustee/Committee Member	Investment Firm	Position	Fund	Amount
William W. Helman IV	Greylock Partners	Managing Partner	Greylock Partners Fund XIII	$ 10,000,000
P. Andrews McLane	T.A. Associates	Advisor	TA Associates Fund XI, L.P.	undisclosed
R. Bradford Evans	Morgan Stanley	Managing Director	Real Estate Fund VI International–TE, L.P.	undisclosed
			Global Best Ideas Fund, L.P.	undisclosed
Stephen E. Mandel, Jr.	Lone Pine Capital LLC	Portfolio Manager	Lone Dragon Pine, L.P.	$ 10,000,000
Russell Carson	Welsh Carson Anderson & Stowe (WCAS)	Principal	WCAS L.P.	$ 20,000,000
			WCAS IV, L.P.	$ 10,000,000
			WCAS X, L.P.	$ 15,000,000
Leon Black	Apollo Management	Principal	Apollo Investment Fund VII, L.P.	$ 25,000,000
			Apollo Investment Fund VI, L.P.	$ 15,000,000
Jonathan Newcomb	Leeds Weld & Co.	Principal	Leeds Weld IV	$ 10,000,000
			TOTAL	***$ 115,000,000***

Source: New Hampshire State Department of Justice, Charitable Trusts Unit; and Tellus Institute.

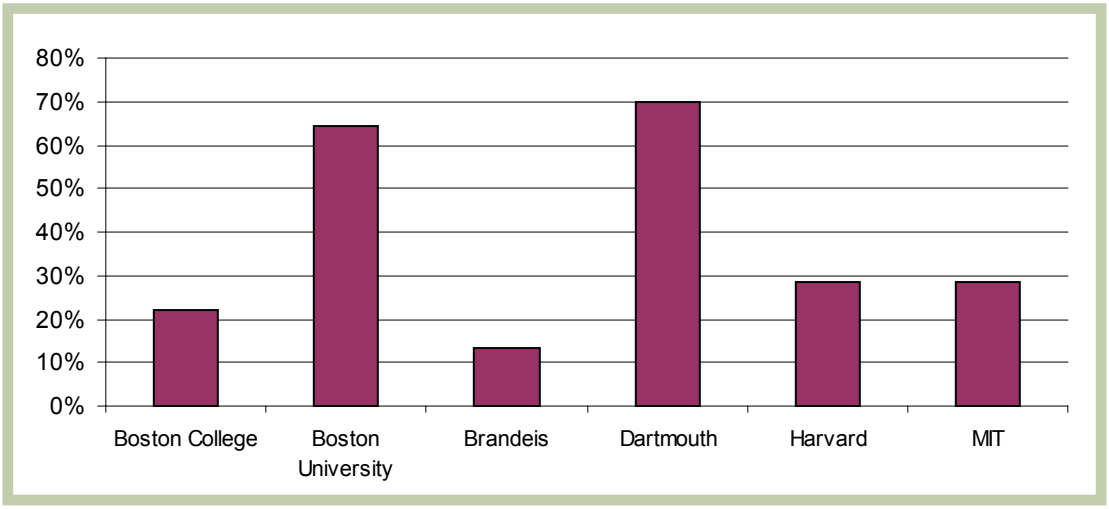
When such a concentration of trustees is involved in managing endowment assets, conflict-of-interest policies of disclosure and recusal from decisions related to one's own firm may provide inadequate assurances of independent oversight.

Dartmouth's situation is indicative of more widespread trends in the composition of college and university boards, where pride of place (and often majority rule) is given to trustees from business backgrounds, with a disproportionate percentage working in finance and increasingly in the alternative asset management industry that plays such a pivotal role in the Endowment Model of Investing. As Figure 20 and Figure 21 indicate, a full 70 percent of Dartmouth's trustees hold MBAs, the largest percentage among the six cases examined here, and 45 percent of the entire board work in finance. Another third of the board has professional backgrounds in business, leaving less than a quarter of the board representing professions outside of the worlds of business and finance.

A majority of Brandeis University's 50 trustees, who made the controversial decision to close the university's Rose Art Museum to the public and to sell off its collection, come from business and finance backgrounds. Among the trustees who sit on the board's investment committee is Jonathan Jacobson, one of many former Harvard Management Co. portfolio managers who left Harvard to launch his own hedge fund, Highfields Capital Management LP. Jacobson's firm had reportedly managed investments worth more than $25 million for the Brandeis endowment at the end of fiscal year 2008.[78]

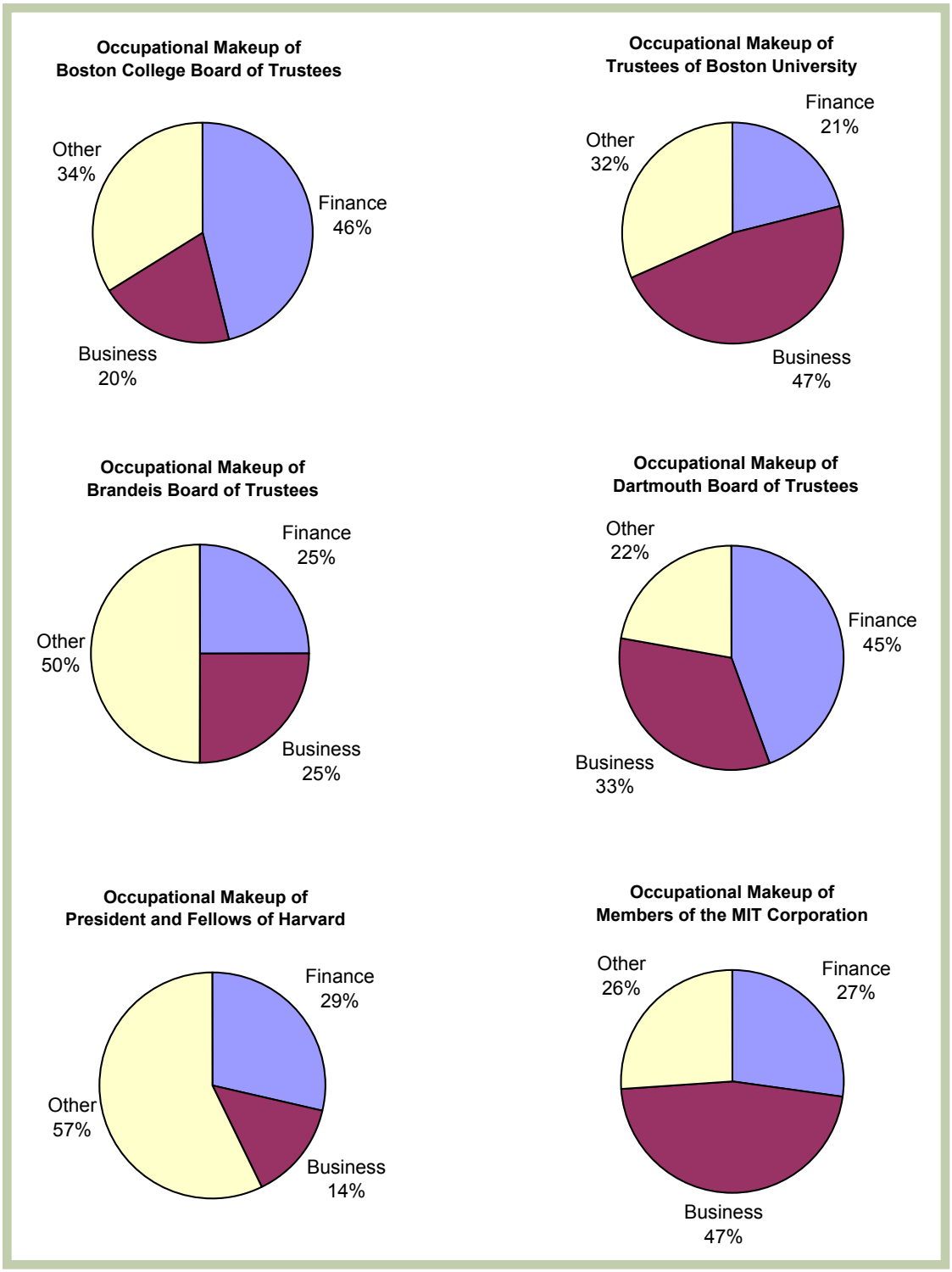
Forty-six percent of Boston College's board is employed in finance, with another 20 percent drawn from other corporate business. Boston College does not make public the composition of its Investment and Endowment Committee, and the college refused repeated requests for information about its members. It is nevertheless well known that the committee is chaired by attorney Robert J. Morrissey, and includes hedge-fund investor Mario Gabelli and Fidelity vice chairman Peter Lynch among its 8 members. Gabelli and Morrissey are both affiliated with Gabelli's firm, GAMCO Investors, which provides investment management services for the college, as reported in undisclosed amounts on the college's Self Dealing Statement to the IRS, as does trustee associate Peter W. Bell's venture capital firm Highland Capital Partners. The assets of Boston College's 401(k) Retirement Plan II are also invested exclusively in funds offered through Lynch's company Fidelity.[79]

Figure 20 Share of Board Holding an MBA



Source: Tellus Institute

Figure 21 Comparative Composition of Boards of Trustees



Source: Tellus Institute

More than 60 percent of Boston University's board hold MBAs, and 68 percent work in either business or finance. BU has experienced repeated board controversies related to poor governance and conflict-of-interest issues, especially during president and chancellor John Silber's tenure on the board. Indeed, longstanding problems on BU's board came to a head in 2003 when it rescinded its offer to former NASA chief Daniel S. Goldin to become the university's next president in exchange for a costly $1.8 million settlement. Goldin had stoked controversy by calling for a brighter line over issues such as board conflicts of interest and university business with the firms of trustees, after it was disclosed in BU's tax filings that some $30 million was paid to trustees' own businesses at the time. When asked about the conflicts, outside observers such as former Dartmouth College President James O. Freedman noted that it was "a shocking amount of money between BU and its trustees; just shocking."[80] Among the companies that benefited were investment management firms, including now bankrupt Lehman Brothers, whose vice chairman Howard L. Clark Jr., was a BU trustee. Subsequently, BU's board developed a remarkably far-reaching conflict-of-interest policy that prohibited business between trustees and the university, unless there was an "exceptional necessity" for the services being rendered. However, the bar proved too high for the board, and a weaker policy was ultimately adopted. As BU spokesperson Stephen Burgay told the *Boston Globe* at the time:

> "The feeling was that the 'exceptional necessity' language, if strictly applied, would have worked to the detriment of Boston University because it would have meant that we would not be able to do business with a best-in-class organization that provides substantial benefit and value to BU," said Burgay, who used Lehman Brothers to illustrate his point. "We needed a policy that protected the university from conflicts of interest and reserved the university's ability to enter into business relationships that were in fact beneficial to us."[81]

Whether BU's relationships with Lehman and other trustee firms have been beneficial to the university is difficult to assess due to the lack of transparency about board decisions and endowment management.

As seen in Figure 21, 74 percent of the MIT Corporation, the institute's governing board, is drawn from the ranks of finance or business. And as Table 6 highlights, MIT's most recent IRS filing disclosed in its self-dealing statement that the institute's endowment had invested in six companies related to five different members of the MIT Corporation, including several of the main corporate culprits of the subprime mortgage meltdown, which ultimately went bankrupt or received government bailouts, such as Bear Stearns (Denis Bovin), Lehman Brothers (Robert Millard), and the Royal Bank of Scotland (Lawrence Fish). The amount of the investment made or how the conflict of interest was handled was not disclosed. Because MIT provides little disclosure of its investments, it remains unclear how costly or beneficial these "related party" investments have been. When such an overwhelming majority of the members of the MIT Corporation come from business and finance, many serving on multiple corporate boards, the prevailing culture of corporate connections appears to undermine badly needed board independence.

Table 6 MIT Disclosed Trustee Conflicts of Interest, FY 2008

Disclosed MIT Investment Conflicts of Interest–FY 2008	
Related Party	**Endowment Investment**
Denis Bovin	Bear Stearns & Co.
A. Neil Pappalardo	Medical Information Technology (Medi-Tech)
Raymond Stata	Omniguide Communications
Lawrence Fish	Textron
Robert Millard	Lehman Brothers
Lawrence Fish	Royal Bank of Scotland

Source: IRS 990 Form FY 2008, Self Dealing Statement

Only on the Harvard Corporation do business and finance professionals constitute less than half of the board, although if one includes members of

the board of Harvard Management Co., which serves as the university's investment committee, then again a majority does come from business and finance. According to Harvard Management Co.'s most recent Self-Dealing Statement to the Internal Revenue Service, HMC director Glenn Hutchins, co-founder and CEO of private-equity firm Silver Lake Partners, also chairs the board of directors of SunGard Data Systems, Inc., a company which provided HMC more than $2.1 million in what its most recent IRS filing referred to as "technical services" in fiscal year 2008.[82] Hutchins' firm Silver Lake led a buyout of SunGard by a group of private-equity investors in 2005.

While self-dealing is a particular problem that can emerge from conflicts of interest, Harvard provides an example of how corporate conflicts can also erode the university's independence as a shareholder, as it exercises its rights and responsibilities as a long-term asset owner. Harvard was a pioneer among endowments in establishing dedicated governance structures to make decisions about the way the university exercises its voice and votes as a shareholder of its investments. During the 1970s, it established a Corporation Committee on Shareholder Responsibility, comprised of three Fellows of the Harvard Corporation, and an Advisory Committee on Shareholder Responsibility, comprised of faculty, students and staff, which makes recommendations to the corporation about Harvard's votes by proxy on social issues presented at annual corporate meetings. Last year, the Corporation Committee abstained from supporting a shareholder resolution calling for Exxon-Mobil to document its greenhouse gas emissions even though the Advisory Committee on Shareholder Responsibility had unanimously voted to support the resolution. One of the three members of the Corporation Committee is James R. Houghton, a member of the board of Exxon-Mobil, which had recommended that shareholders oppose the resolution. It is not unprecedented for the Corporation Committee to support shareholder resolutions at Exxon from time to time, but it is highly irregular for the Corporation Committee to refuse to follow the Advisory Committee's unanimous guidance. Whatever the actual reason for the final decision, trustees such as Houghton with competing board commitments may be influenced by their other commitments, diminishing their independence when it comes to shareholder responsibility issues.[83]

A systematic review of proxy voting has been beyond the scope of the present study, in part due to the lack of transparency surrounding proxy voting by endowments. Harvard is one of the few schools voluntarily to publicize its voting record on shareholder resolutions that come before the Advisory and Corporation Committees on Shareholder Responsibility. This single example serves simply to highlight the multiple levels at which independent stewardship can be potentially compromised by corporate connections. A fuller assessment of endowment proxy voting practices is needed. The cases under consideration reveal a disproportionate business bias in higher educational board governance, and an over-reliance on trustees drawn from financial services and in many cases from precisely those exotic corners of finance involved in alternative asset management so central to the Endowment Model of Investing. Given the degree of professional commitment and loyalty to alternative asset management, it should come as little surprise that boards could find themselves ill equipped to present the full range of diverse viewpoints about the stewardship of endowment assets. The culture of boards has become an important contributor to the problems inherent in the Endowment Model of Investing—and an inhibitor of more thoroughgoing change in the wake of the financial crisis.

The Cult of the CIO and the Rise of Academic Finance Officers

The recent rise of the CIO and other highly compensated finance and investment officers is yet another indication of the influence of Wall Street risk culture on campuses and the complexity of the Endowment Model of Investing. The use of alternatives and the need for regular portfolio monitoring and management has created the need for full-time, dedicated day-to-day

professional investment management, distinct from other functions traditionally played by a college treasurer or vice president for finance. Rarely does a board or investment committee have sufficient time to provide oversight of investments alone.

A decade ago, among our six cases, only Harvard had a dedicated chief investment officer, whose sole responsibility was investment management: the president of Harvard Management Co. As an indication of how rapidly the landscape has changed, today only Boston College has yet to create such a post. Dartmouth hired its first designated CIO in 2005 by luring away from the University of California its CIO David Russ. MIT hired its first CIO dedicated exclusively to investment management in 2006. BU created its CIO position in 2007. Brandeis University hired a full-time CIO and began to staff a dedicated Office of Investment Management for the first time in 2007.

Although the increasing sophistication of endowment portfolios under the Endowment Model seems to demand more specialized investment officers, the competitive environment in which these officers work also appears to encourage high turnover. Upon mastering the Endowment Model of Investing, investment officers and CIOs are increasingly leaving campus to launch their own lucrative private investment firms and hedge funds, often seeded and subsidized with endowment money. In an effort to keep pace with Wall Street's excessive compensation, the CIO has become among the most highly compensated officers on campus. The temptations of private asset management have ultimately proven too difficult to resist for many investment officers. We have already noted the phenomenon in Harvard's case, where star traders have left Harvard Management Co. to start their own firms often with seed capital from their former employer. At Dartmouth CIO David Russ left for Wall Street after only four years on the job, to become chief investment strategist at Credit Suisse.

Across the country, colleges have already seen a wave of emigration from endowment offices to for-profit investment advisory firms. Alice Handy, the former CIO of the University of Virginia, Mark Yusko, the ex-CIO of the University of North Carolina, Michael McCaffery and Eric Upin from Stanford Management Co., Michael Smith at the University of Florida, and Bob Boldt of the University of Texas are among the star CIOs who have left their endowment offices for private asset management. After only four years on the job, Cornell University's CIO James Walsh recently announced his plans to quit this summer in order to start a hedge fund. Some departing endowment managers such as Jack Meyer from Harvard have launched their own alternative investment funds, while others such as Handy and Yusko have created advisory firms, often providing "outsourced CIO" services for smaller endowments and high-net-worth individuals who hope to replicate the Endowment Model executed by larger elite schools. Indeed, Yusko departed Chapel Hill's management company after UNC's board objected to the amount of time he was moonlighting with this own investment consulting work on the side.[84] When the board refused to let Yusko open UNC Management Co.'s services to outside investors, he left to create his own firm Morgan Creek Capital Management, using precisely the same business plan that he had developed at UNC. Earlier this year Wesleyan University actually fired and sued its former CIO Thomas Kannam for his outside work advising a hedge fund, Cross Border Capital.[85] The flight of endowment officers into private finance has encouraged leadership instability over endowment management at precisely the moment when continuity has been most needed.

Traditionally, campus administrators involved in endowment oversight have had relatively long tenures. MIT's decision to create an affiliated endowment management company, the MIT Investment Management Co. (MITIMCo), institutionalized the functional separation of the treasurer from the head of investments, a dual role long played by MIT's highly regarded

Treasurer Allan S. Bufferd. Bufferd was replaced as MITIMCo president in 2006 by Seth Alexander, a Yale graduate who had worked at the Yale Investments Office under David Swensen for a decade prior to coming to MIT. Bufferd had served as the first president of MITIMCo when it was created in 2004, but his service to the institute had stretched back to 1972 when he first joined the fundraising office. Under Treasurer Glenn Stehle, Bufferd became involved in investment management a few years later, as MIT took its first forays into private equity and venture capital investing in the late 1970s. Over the course of Bufferd's quarter century of service, MIT's endowment grew from $400 million to $7.7 billion, and by the time of his retirement MIT was farming its endowment management out to some 150 different managers.[86] Because MIT already tended to outsource most of its investment assets to external managers, hiring a Swensen acolyte such as Alexander made for a relatively smooth transition. Of the six schools examined here, MIT has come most fully to embody the Yale model of endowment management.

Seth Alexander's arrival took place in the context of broad administrative restructuring and organizational changes at the institute initiated by MIT's new president Susan Hockfield, who replaced long-time MIT president Charles Vest in 2004. Since Hockfield's arrival from Yale, MIT's senior administration underwent a remarkable degree of turnover. Bufferd's retirement came in the wake of the departures of Provost Robert Brown, who left to become BU's next president, and of MIT's first Executive Vice President John R. Curry. After Bufferd left, the treasurer's office was reorganized into a new office of the executive vice president and treasurer, with investment responsibilities devolved exclusively to MITIMCo and fundraising to a new development office. As CIO, Alexander would focus full time on investments at MITIMCo, so that treasury operations could be handled by the new EVP's office. Theresa Stone, a former CEO of Chubb Life Insurance Co., ex-Morgan Stanley investment banker, long-time member of the MIT Corporation and chair of the MITIMCo Board, ultimately filled that new post of executive vice president and treasurer in 2007.[87] At the time of her appointment, Stone was actively serving on numerous corporate boards, but she told MIT's newspaper that she would "be shedding most of those outside commitments as I move into this position just because the demands of this job are going to be huge, and at the same time I want to get fully involved with the MIT community." Three years later, Stone continues to serve as a director of Progress Energy, for which she was paid more than $224,000 in total compensation in 2009. This

Table 7 Dartmouth 10 Highest Paid Administrators

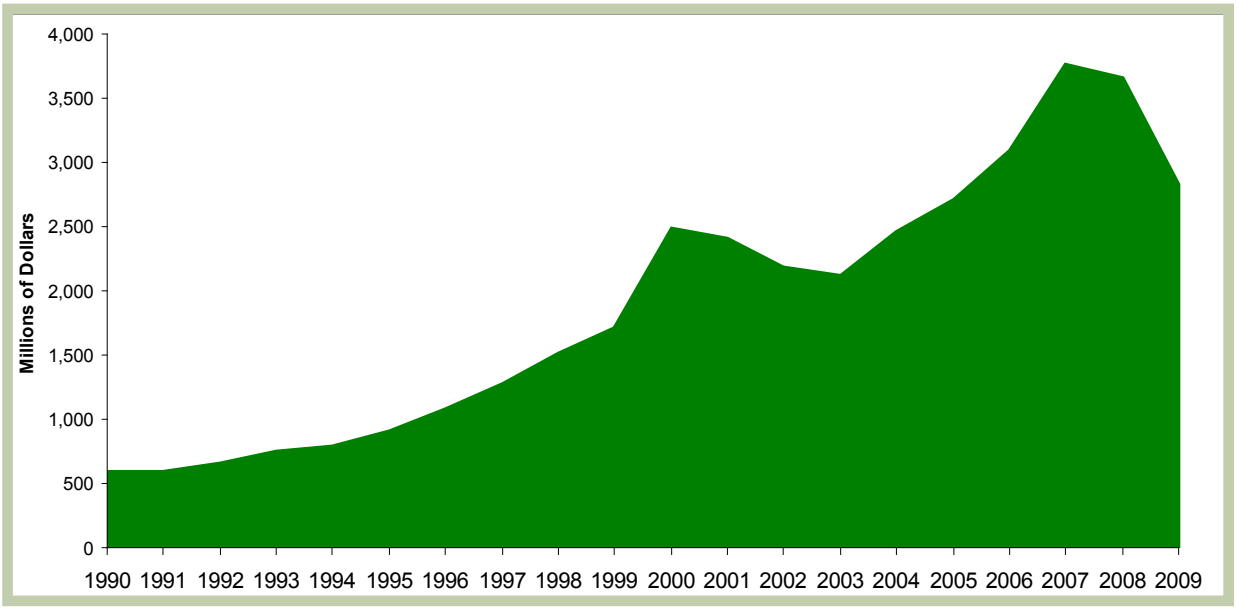
Dartmouth College–10 Highest Administrative Salaries Paid Since 2000			
Name	Position	Pay	Fiscal Year
David Russ	Chief Investment Officer	$843,000	2008
David Russ	Chief Investment Officer	$779,667	2007
Thomas A. Colacchio	President, Dartmouth-Hitchcock Clinic	$555,296	2004
Thomas A. Colacchio	President, Dartmouth-Hitchcock Clinic	$540,041	2003
James E. Wright	President	$500,000	2008
James E. Wright	President	$490,682	2001
Paul S. Olsen	Director of Real Estate	$479,879	2008
James E. Wright	President	$470,000	2007
Mark A. Israel	Director of Med School	$466,384	2008
Paul P. Danos	Dean of Tuck School	$465,500	2008

Source: Chronicle of Philanthropy Executive Compensation Survey; Chronicle of Higher Education; IRS Form 990
Note: Compensation may include one-time severance packages or deferred compensation.
Pay listed does not include benefits or expense accounts that may have accrued to the individuals.

supplements her salary and benefits at MIT, valued at more than $569,000 in fiscal year 2008, the institute's most recently reported compensation data.[88] Alexander is now the highest paid officer at MIT, making nearly $800,000 in pay (20 times the average custodian's wages) in 2008, the most recent publicly reported data.[89]

Dartmouth's first CIO David Russ became the most highly compensated officer at the college, earning nearly $1 million in total compensation, including benefits and bonuses, even as Dartmouth's endowment headed into its most severe investment losses in history. Previous in-house investment officers at Dartmouth such as Lyn Hutton, now CIO of Commonfund, and Jonathon King, who departed Dartmouth to replace Mark Yusko at UNC, had never been designated CIO nor received compensation to match the title. While working at Dartmouth, Russ was repeatedly hailed as a "star" CIO and was nominated in 2007 as a finalist for *Institutional Investor*'s endowment CIO of the year.[90] As Figure 23 highlights, Russ introduced "Alternative Strategies" as a dedicated asset class in 2007 and greatly reduced the college's exposure to fixed income, cash and public equities.

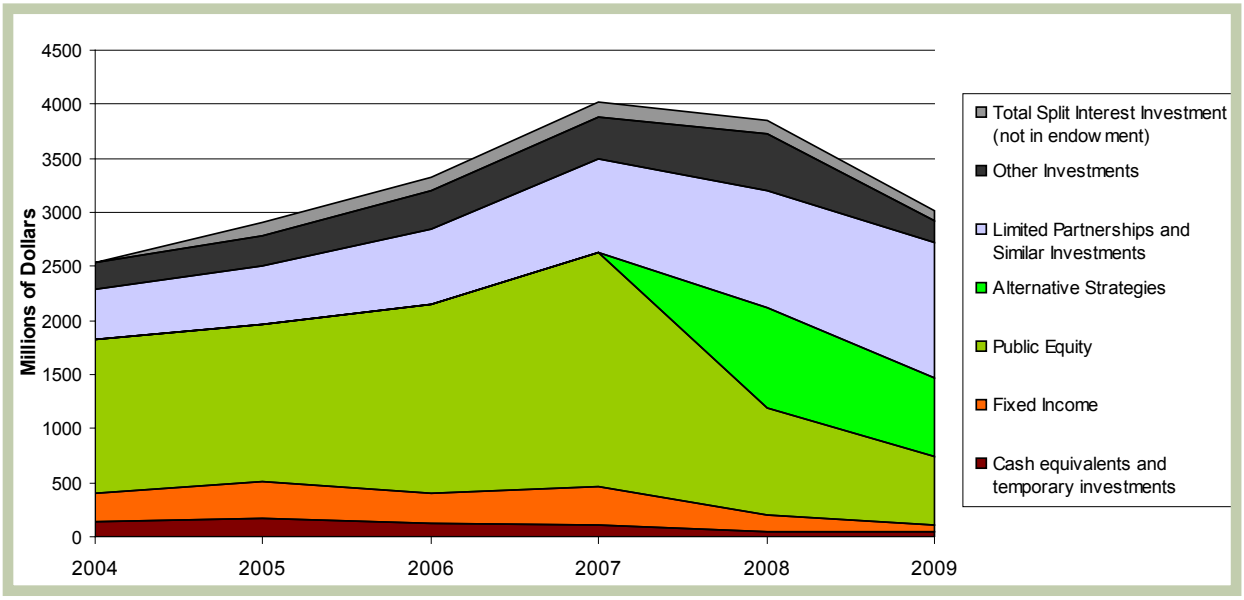
Figure 22 Dartmouth Historical Endowment Values, 1990–2009



Source: NACUBO

At first the aggressive strategy seemed to payoff. As his current biography at Credit Suisse notes, "At Dartmouth, Russ oversaw the US$3.8B endowment through the largest increase in value over a two-year period in the history of the college." However, Russ also oversaw the endowment during its largest two-year decline in value shortly thereafter. When Russ left Hanover for Wall Street, Dartmouth's endowment had fallen back to $2.8 billion, its worth when he arrived in 2005. It is unclear whether any of Russ's compensation was clawed back in any way. Rather than replace Russ, Dartmouth's new president Jim Yong Kim and the Dartmouth Board of Trustees decided to suspend the college's search for a CIO and left the CIO function in the hands of Dartmouth's Investment Committee chair, Stephen Mandel, a prominent hedge-fund investor, whose firm, as we noted above, also manages multimillion-dollar endowment mandates for the college.

Figure 23 Dartmouth College Asset Allocation, 2004–09



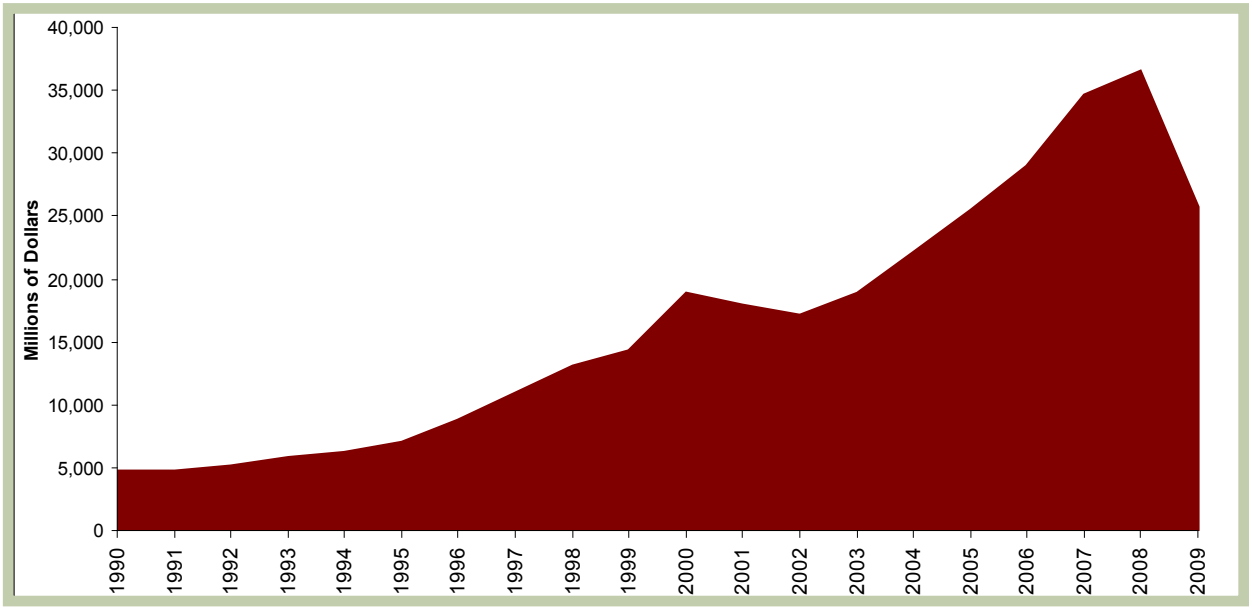
Source: Dartmouth College Financial Statements

Boston University hired investment consultant Pamela Peedin from Cambridge Associates LLC as its first CIO in 2007. Previously, BU's Board of Trustees had been responsible for investment decisions, and for three decades Peter Vermilye had served as chair of the university's investment committee.[91] While serving as treasurer of State Street Investment Corporation, Vermilye had been one of the ten members of the Ford Foundation's Advisory Committee on Endowment Management, chaired by Robert Baker in the late 1960s. Brandeis, the smallest endowment in our study, made a similar move that year, but its first appointee Deborah Foye Kuenstner stayed for only one year before jumping ship to replace Jane Mendillo as CIO at Wellesley College. While on campus, Kuenstner was the most highly compensated officer at the university.[92] An interim CIO, Alison Svizzero, has served since her departure.

Although Harvard has long provided a pioneering example of the Endowment Model's execution, it has experienced some of the most negative impacts from trying to run its high-risk/high-return investment strategy in this new context of investment officer turnover and leadership discontinuity. Harvard Management Co. had been founded in 1974 as the first university-affiliated investment management company, wholly owned by Harvard to manage its assets separately and independently from the treasurer's office. Before that, for more than three and a half decades, Harvard's endowment, valued at $1.4 billion in 1974, had been conservatively managed by State Street Research and Management until the Harvard Corporation selected Walter M. Cabot, a Harvard alumnus and senior executive at Boston's Wellington Management, to preside over the newly formed company.[93] Cabot immediately instituted unprecedented conflict-of-interest policies that precluded associates of Harvard Management Co. from serving on any corporations in which Harvard might conceivably invest. "I don't care how many safeguards you set up," Cabot told the *Harvard Crimson* in 1974. "I see a basic conflict in holding a directorship of a corporation and maintaining the freedom to act and use information to make investment decisions about that company."[94] Cabot's edicts departed sharply from the kinds of conflicts embodied by Harvard's departing Treasurer George Bennett, who not only presided over the outside firm responsible for managing Harvard's money but also sat on several prominent corporate boards in which the university was substantially invested. This separation of roles responded in part to the increasing demands at the time for greater corporate responsibility and ethical investment.

Indeed, Cabot, together with Bennett's successor as university treasurer, George Putnam, went so far as to insist that they would actively avoid investments in companies that they did not believe were "socially responsible." As the *Crimson* reported at the time, "Harvard finances apparently have entered a new era of management, one which looks toward eliminating at least some of the problems students and faculty have long decried."[95]

Figure 24 Harvard Historical Endowment Values, 1990–2009



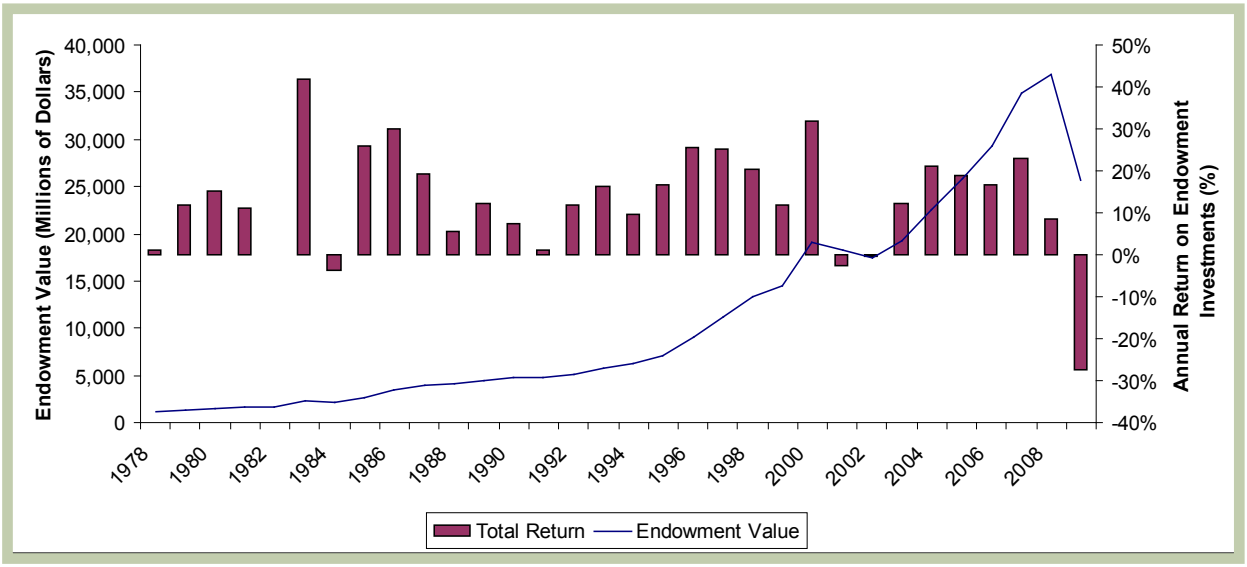
Source: NACUBO

Cabot remained in the post of chief executive officer of Harvard Management Co. for more than a decade and a half, during which the endowment's value more than tripled to nearly $5 billion. Throughout his tenure he maintained an uncommonly strong sense of stewardship and professional responsibility, and shortly after relinquishing the reins of HMC, he decried the investment industry's ethical lapses, excessive compensation and fees, and tendency to pursue what he called "short-term results relative to an index" rather than to assume an "ownership mentality."[96] This did not, however, prevent Cabot and HMC from embracing the new paradigm for growth—over income—that emerged in the early 1970s after widespread adoption by endowment managers of the recommendations of the Ford Foundation's Barker Report. Cabot reallocated the endowment from a largely income-oriented, blue-chip equity portfolio to a much more diversified, high-risk/high-return model stretching across asset classes and instruments not typically associated with the staid world of endowment management. Indeed, it was under Cabot that Harvard not only began trading options, futures and derivatives and lending securities from its endowment, but also created other affiliated investment entities, such as the Aeneas Group, to make high-risk direct private placements in venture capital, oil and gas partnerships, real estate, and controversial leveraged buyouts. Despite Cabot's professed sense of social responsibility, Harvard Management Co. continued to make investments in tobacco—an industry now off limits to Harvard's endowment as a matter of policy—and companies with ties to South Africa under apartheid.[97]

When Jack R. Meyer was hired as Cabot's replacement in 1990, he quickly instituted a new performance-based compensation system for HMC's employees and traders, one modeled on precisely the system that Cabot had publicly decried: beating specialized market benchmarks.[98]

The strategy paid off handsomely, especially for Harvard's best traders. Under his watch from 1990 to 2005, when Meyer left HMC to create his own hedge fund, Harvard's endowment grew more than five-fold from less than $5 billion to nearly $26 billion. Benchmark-beating traders earned astronomical bonuses that were simply unprecedented in the endowment management world. In 2003, in-house bond traders David Mittelman and Maurice Samuels each earned more than $35 million in compensation, while Meyer himself pulled home a cool $6.9 million. The bonuses drew the ire of alumni and Harvard President Larry Summers, so Meyer reluctantly instituted a cap on bonuses the following year.[99] Nevertheless, even after the cap Mittelman and Samuels again earned bonuses of more than $25 million in 2004, and Meyer's pay increased to more than $7 million. Because Harvard Management Co. managed a far larger portion of Harvard's investment assets in house, in contrast to Yale and other followers of the Swensen model of external management, Meyer insisted that HMC's compensation structures had to keep pace with that of leading hedge-fund managers in Greenwich and on Wall Street; otherwise, his traders simply would not stay. As evidence, he pointed repeatedly to successful departing managers such as Jon Jacobson, who left in 1998 to launch Highfields Capital Management, Robert Atchinson, Philip Gross and Frank Dunau, who took $1.8 billion in Harvard assets to form Adage Capital Management, and Jeffrey Larson, who left HMC with a $700 million mandate to invest with his new firm, Sowood Capital. Meyer also took pains to stress that his managers were not being rewarded for short-term performance; if they fell short of their benchmarks over time, their compensation would be clawed back.[100]

Figure 25 Harvard Endowment Value and Annual Rate of Return 1978-2009



Source:Harvard University Fact Books 2008–09; Tellus Institute analysis
Note: Endowment value is on left axis, and annual percentage total return is on right axis.

After enduring repeated controversies over compensation, Meyer decided at the beginning of 2005 that the time had come to set up his own fund, Convexity Capital Management LP. The university gave him a $500 million mandate to seed his hedge fund, and Meyer brought along top traders Mittelman and Samuels, and another two dozen staff. The exodus of Meyer's new team thus decimated HMC's trading floor, demoralized the staff that remained, and ratified the trend of moving increasing levels of endowment capital to external management. Whereas Harvard had long prized itself for managing more than 80 percent of endowment assets in house, HMC had now moved to a "hybrid model," with just over half managed internally and the balance farmed out, much of it to funds managed by former HMC staff.

Table 8 Harvard's 10 Highest Paid Administrators since 2000

Harvard University–10 Highest Administrative Salaries Paid since 2000			
Name	Position	Pay	Fiscal Year
Maurice Samuels	Senior VP, International Fixed Income, Harvard Management Co.	$35,099,300	2003
David R. Mittelman	Senior VP, Fixed Income, Harvard Management Co.	$33,979,230	2003
David R. Mittelman	Senior VP, Fixed Income, Harvard Management Co.	$17,395,300	2002
Jeffrey B. Larson	Senior VP, International Equity, Harvard Management Co.	$17,360,300	2002
Jeffrey B. Larson	Senior VP, International Equity, Harvard Management Co.	$17,256,161	2003
Maurice Samuels	Senior VP, International Fixed Income, Harvard Management Co.	$15,867,650	2002
Jack R. Meyer	President, Harvard Management Co.	$7,195,680	2004
Mohamed El-Erian	President, Harvard Management Co.	$6,500,000	2007
Stephen Blyth	Managing Director-Int'l Fixed Income, Harvard Management Co.	$6,373,750	2008
Marc Seidner	Managing Director-Domestic Fixed Income, Harvard Management Co.	$6,288,750	2008

Source: Chronicle of Philanthropy Executive Compensation Survey; Chronicle of Higher Education; IRS 990 Forms

Note: Compensation may include one-time severance packages or deferred compensation. Pay listed does not include benefits or expense accounts that may have accrued to the individuals

With Harvard's endowment seeding its ex-CEO's new venture, Meyer very quickly raised a reported $6 billion by early 2006, making Convexity the largest hedge fund ever to be launched at the time.[101] By having a record launch and slightly discounting its fees below the standard "2–and–20" hedge-fund structure, Convexity also managed to win the *Foundation and Endowment Money Management* newsletter's award for "Nonprofit Hedge Fund Manager of the Year" in 2006, even without any substantial performance history as an independent entity. Meyer's reputation as CIO of Harvard's endowment consecrated Convexity's success.

At the 2006 NACUBO Endowment Management Forum, David Swensen publicly criticized Harvard for its excessive compensation and volatile system of bonuses. "I have long said that the structure of Harvard Management is inherently unstable," Swensen was quoted as saying at the time.[102] In *The New York Times*, Swensen later elaborated on his criticism, arguing that "[p]aying some people $35 million where others earn $35,000 tears at the fabric of an institution."[103] Although Jack Meyer had left Harvard Management Co., the system of awarding bonuses based on beating benchmarks remained essentially in place. Harvard reportedly clawed back bonuses during the financial crisis, yet as the endowment plunged, bonuses were still awarded to employees of Harvard Management Co. who beat their benchmarks.[104] Of course, in a falling market most benchmarks declined. Thus HMC could continue to pay bonuses to managers who may very well have reduced the value of their allocation of the endowment as long as they did not lose as much as the market did as a whole. In other words, with the market down across the board in fiscal year 2009, many traders could beat their benchmarks but still generate losses in endowment value, in essence being eligible for bonuses despite generating negative returns. These are the types of perverse Wall Street incentives that have eroded a sense of stewardship, or what Walter Cabot had described as the "ownership mentality," in the field of endowment management.

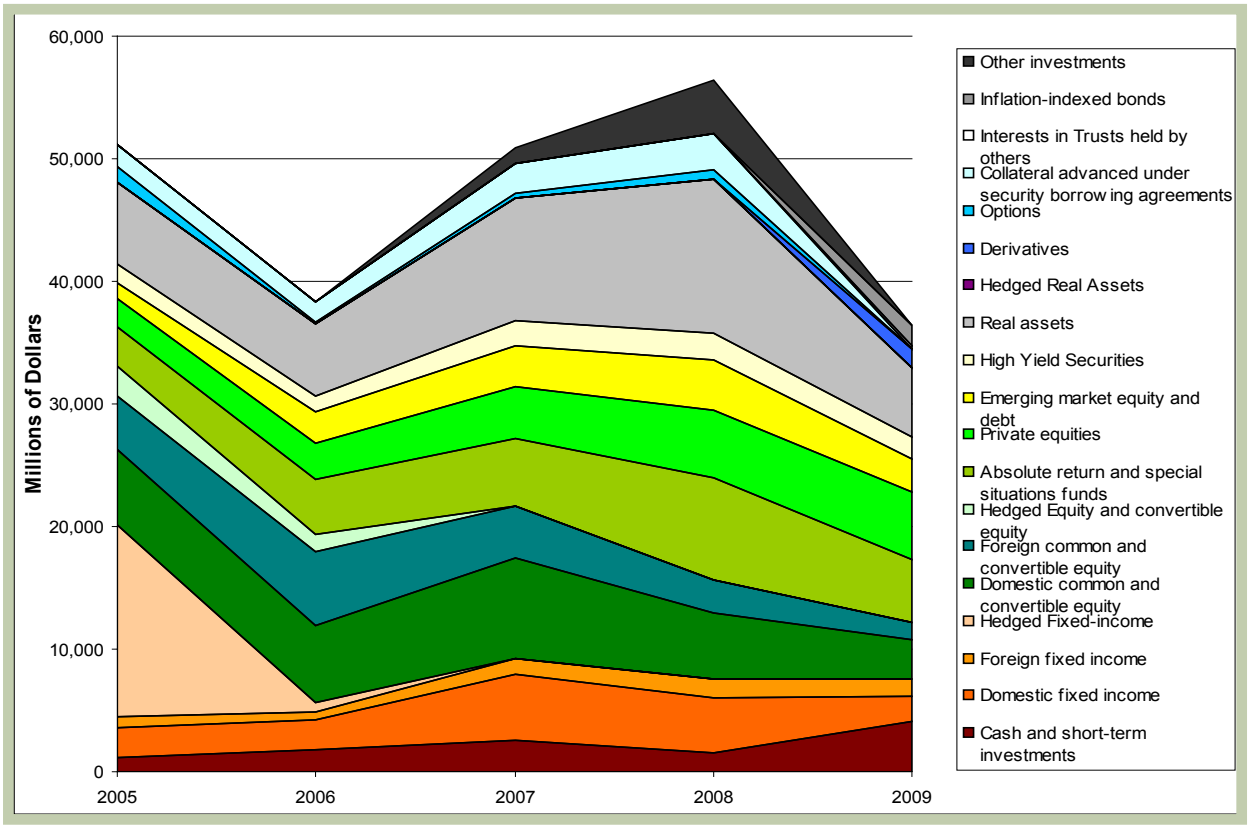
Meyer's exit in 2005 left a leadership vacuum at Harvard Management Co., which the university struggled to fill immediately. Mark Nunnelly, a managing director at Bain Capital, was reportedly offered the position but declined it.[105] Peter Nadosy, a director of HMC and former Morgan Stanley investment banker, stepped in as interim chief investment officer, while the 10-month search dragged on, but he performed his duties from New York rather than at HMC's Atlantic Avenue offices in Boston.[106] Eventually, the university found Meyer's successor in a Harvard outsider, Mohamed El-Erian, a highly regarded emerging markets expert from Pacific Investment Management Co. (PIMCO), where he managed well-performing emerging-market bond funds after serving for more than a decade at the International Monetary Fund.[107] However, despite his impressive record in emerging markets, El-Erian's experience with institutional portfolio management across asset classes had been rather limited, and Harvard's allocation to emerging markets was only a small slice of a much larger pie.[108] Ultimately, he spent less than two years before returning to PIMCO to become the company's co-chief executive in fall 2007.

El-Erian's time at HMC overlapped with an even more divisive, destabilizing leadership crisis at the university: the forced departure of Larry Summers as Harvard's president in 2006. Summers was temporarily replaced by former president Derek Bok during 2006–07, before the Harvard Corporation settled on appointing Harvard's first female president, historian Drew Faust. At the time of Summers' departure, Ann E. Berman, the chief financial officer and vice president for finance, also resigned. She was replaced by Elizabeth Mora, whose service as CFO ended abruptly in May 2008.[109] Only days prior to her departure, Mora had re-assured readers of *CFO* magazine about Harvard's financial administration at the time by saying " [w]e have a strong risk-management function that monitors the market and the current portfolio allocations every day."[110]

El-Erian's sudden departure in late 2007 sent Harvard scrambling again for a replacement to head Harvard Management Co. Robert S. Kaplan, a professor of management practice at Harvard Business School and a former vice chairman at Goldman Sachs, became interim CEO until the end of fiscal year 2008, when Jane Mendillo, the chief investment officer at Wellesley College, arrived. Mendillo had been Wellesley's CIO since 2002, where she had overseen the growth of the considerably smaller endowment from $1 billion to $1.7 billion. Prior to Wellesley, Mendillo had worked at Harvard Management Co. for a decade and a half, first under Walter Cabot in the late 1980s before rising to the position of vice president of external management under Jack Meyer. With the financial crisis worsening, Mendillo was dropped into a mine field in the summer of 2008, as Summers' aggressive strategy of using derivatives to manage the university's pooled cash investments alongside the endowment finally unraveled.

Around the same time, Edward C. Forst was lured away from Goldman Sachs to become the university's first executive vice president, overseeing finance, administrative and human resources divisions, reporting directly to Harvard's new president Drew Faust, and serving as a chief liaison between Harvard Management Co. and the president's office. Before coming to Harvard, Forst had been handsomely compensated for his work at Goldman, one of the banks that would receive TARP funds from the federal government as part of its massive bailout of the banking sector. According to news reports and SEC filings, Forst was the fifth highest paid executive at Goldman Sachs, making nearly $50 million in total compensation in 2007; when asked by Bloomberg about his compensation at Harvard, the university refused to disclose his salary.[111] That President Faust felt she needed to bring an investment banker into Massachusetts Hall to serve as the university's "principal ranking executive officer" was a sign of just how pervasively finance had come to dominate Harvard's operations and what a challenge university presidents faced in dealing with university finance matters in the era of the Endow-

Figure 26 Harvard University Asset Allocation, 2005–09



Source: Harvard University Financial Reports

Note: Total investment assets do not reflect substantial balance-sheet liabilities associated with hedging activities.

ment Model of Investing. Faust is by no means alone. Dartmouth's president Jim Yong Kim acknowledged the same kind of challenge in an interview with the *Wall Street Journal*, admitting that "I had no idea what a hedge fund was. Bill Helman, a principal at venture-capital firm Greylock Partners and an active Dartmouth alumnus, came here and did a two-day tutorial with me."[112] Kim failed to mention that Helman's firm also manages money for Dartmouth's endowment. Trustees, it turns out, are not the only college leaders with a difficulty developing independent views of endowment stewardship.

Arriving two months after the beginning of Jane Mendillo's appointment as the new CEO of Harvard Management Co., Forst got to work just as the avalanche of the credit crisis was coming loose. Serving on the board of Harvard Management Co., the Allston strategy group, and the university's Debt-Asset Management Committee, he had a front row seat on Harvard's handling of the crisis. As such he was directly involved not only in oversight of the endowment but also in some of Harvard's most controversial financial decisions, including the university's unprecedented flotation of $2.5 billion in debt to unwind its costly interest-rate swaps.[113] Less than a year after his appointment, in what had become a familiar ritual for Harvard finance officers, Forst announced his plans to leave the university and return to New York by the end of summer. "Although the formal announcement said Forst would return to the financial industry," *Harvard Magazine* reported at the time, "he said he had not yet lined up his new position."[114] On Aug. 31, 2009, *The New York Times* Dealbook blog leaked an internal memo from Goldman Sachs CEO Lloyd Blankfein and President Gary Cohn announcing Forst would

return to the firm as "senior strategy officer" on Sept. 8.[115] He has subsequently resumed his former job as head of the investment management division.

Forst's successor as Harvard's executive vice president is Katherine N. Lapp, former executive vice president for business operations at the University of California and former CEO of the New York MTA, whose first assignment was to run interference for Faust and the Harvard Corporation on their decision to "pause" indefinitely Harvard's development of Allston, due to the "altered financial landscape of the University," in other words, the failure of the Endowment Model to deliver its promised returns.[116] The quantifiable costs of Allston's suspension to the regional economy considerably magnify the actual effect of the endowment's losses during the financial crisis. The next section provides preliminary estimates of the community development costs of the Allston delay and of other quantifiable social costs of endowment declines, including the severe economic impact of layoffs and other reductions in force to the Boston metropolitan region and the Upper Valley.

The cost of the corrosive influence of Wall Street culture on higher education finance is more difficult to quantify. But as we have seen, it has clearly undermined independent stewardship of endowment assets, while facilitating the excessive risk-taking that defines the modern Endowment Model of Investing. That academic CIOs, finance and investment officers, and other senior administrators are now regularly compensated at levels ranging from 10 to 1,000 times the average employee's earnings also highlights how Wall Street's own excesses in compensation have contributed to the distortion of pay structures in higher education.[117] Given the importance of these schools as regional employers, such incentive structures magnify inequality both on campus and in surrounding communities even when the Endowment Model works best. At its worst, the costs are even more severe. It is to those community costs and social consequences of the Endowment Model of Investing that we now turn.

V. SOCIAL CONSEQUENCES AND COSTS

Institutions of higher learning clearly provide important educational, cultural, social and economic benefits to the communities and regions in which they are located. The six colleges reviewed in this study are fundamental drivers in both the Boston regional economy and the Upper Valley region in New Hampshire and eastern Vermont. As some of the largest employers and property owners in their respective communities, they play a critical role in the health and stability of these communities. Colleges and universities go to great lengths to publicize their contributions.[118] They do not, however, as readily acknowledge the fact that these benefits are accompanied by costs as well. The decisions these institutions make about the physical extent and appearance of their campuses as well as their staffing levels have profound effects on their host communities. The expansion of a campus through the acquisition of property, for example, not only provides new employment opportunities, but it also may change the character of a neighborhood, displace other uses, and alter the potential tax base of a municipality. Similarly, layoffs and other reductions in force not only impact the campus, but have indirect impacts that can ripple through the surrounding community or region.

In the following sections, we analyze workforce trends of growing inequality among staff, faculty and senior administrators over the last decade, highlighting that whatever gains accrued to universities from investments were unevenly distributed across operational budgets, benefiting senior administrative officers much more so than either faculty or unionized staff. The excessive compensation paid to presidents, CIOs and other investment officers and senior administrators have altered pay structures on campuses and widened the inequality gap at opposite ends of college workforces. In this sense, the Endowment Model of Investing's gains in the good times helped magnify broader social inequality. Now that the model has faltered, those most responsible for its development, execution and oversight pay very few of its costs. CIOs take plum

jobs on Wall Street, leaving the campus and the community to deal with the aftermath of their actions, from demoralizing layoffs to other reductions in programs, pay and benefits.

As part of our effort to provide a fuller picture of the real social impact of endowment declines, we analyze the reductions in force that have followed the endowment declines at our six schools, and we provide initial quantitative estimates of the economic costs of these reductions to the Boston metropolitan region and to the Upper Valley. We also review the costs of schools' tax-exempt status for their broader communities, particularly in terms of forgone property tax revenues. At a time when assessed real estate values have declined and municipalities themselves are experiencing fiscal crises, the privileged tax treatment that colleges receive on their property serves to magnify the burdens on local governments of providing essential public services, upon which colleges rely as much as their communities.

Workforce Compensation Trends

Historically, colleges and universities have provided steady sources of employment, seemingly immune to the vagaries of national economic conditions. With more than 18,000 full- and part-time employees, Harvard University has been the second-largest private employer in the Boston metropolitan region and the third-largest in the commonwealth of Massachusetts.[119] BU is the fourth-largest employer in Boston. In Cambridge, just outside Boston, Harvard and MIT have been by far the city's two largest employers, accounting for almost 17 percent of the city's total employment in 2009.[120] In other suburban communities, Brandeis is Waltham's largest employer, while Boston College is among the top-five employers in Newton, Mass.[121] In the college town of Hanover and the Upper Valley region of New Hampshire and eastern Vermont, Dartmouth College and its affiliated Dartmouth-Hitchcock Medical Center dominate as the top two employers.

We tracked faculty and staff employment trends at the six colleges over the last decade. Since not all the schools have released 2009 employment data, the following analysis relating to aggregate employment levels refers to trends through the 2008 academic year. Note that none of the schools reported layoffs or reductions in force during the 2005–2008 period. However, as discussed below, reductions in force have taken place in five of the six schools in fiscal years 2009 and 2010. As summarized in Table 9, both faculty and staff employment experienced steady growth during the 2005–2008 period, increasing across the six schools from approximately 42,000 in 2005 to more than 45,000 in 2008. While there were fluctuations at the individual schools, overall faculty employment at the six institutions increased from 8,160 in 2005 to 9,002 in 2008. Similarly, staff grew from a collective total of 33,916 in 2005 to 36,344 in 2008.[122]

In order to disaggregate compensation trends, we have identified three commensurable classes of employees for analysis: (1) unionized staff members; (2) faculty members; and (3) the presidents from each of the schools. We tracked their compensation levels from 2000 through 2009.[123] As summarized in Table 11, for five of the six schools the average annual percent increase in compensation for representative unionized staff from 2000 to 2009 (3.06 percent–3.45 percent) lagged behind that of both faculty members (3.73 percent–5.39 percent) and college presidents (3.24 percent–7.80 percent). The one school where this was not the case is Harvard University, where wage rates for unionized staff were substantially lower (ranging from roughly 25 to 40 percent) than at the other schools at the beginning of the decade. As a result of the successful "Living Wage Campaign" by concerned staff, students, faculty, and community members during 1999–2002, contracts over the past nine years have increased annual wage levels for union-

Table 9 Overall Employment Trends, 2005–2008

Overall Employment Trends for Six Colleges 2005–2008			
Year	Faculty	Staff	Total
2005	8,160	33,916	42,076
2006	8,234	34,626	42,860
2007	8,549	35,252	43,801
2008	9,002	36,344	45,346

Source: Tellus Institute analysis of self-reported data from each school.

ized staff at Harvard by 7.32 percent on average. Only recently have wages at Harvard begun to converge with wage levels of union members at other colleges in the region, though as Table 10 highlights, pay for unionized staff at Harvard continues to lag behind comparable employees at Boston-area schools less well endowed, such as BC, BU, and M.I.T.

As the line graphs in Figure 27 highlight, the three types of employees are starting at very different levels of annual compensation. For example, the average unionized staff member at these schools earned roughly $27,400 in 2000 while the average full professor's salary was about $109,000 (4 times the unionized staff figure), while the average president's salary was $346,000 (more than 12.5 times the figure for union members). Given the effects of compounding of even modest differences in pay increases, the pay gaps widen over the decade. By 2008 the average union staff member earned about $37,000, while the average professor earned $155,000 (more than 4 times the unionized staff figure), and the average president's salary grew to $561,000 (now more than 15 times the union figure). As Table 11 highlights, we observe considerable variation in increases across categories at our six schools. With the exception of Harvard, however, union staff have consistently seen lower pay increases than faculty or presidents. Even at Harvard, where rate increases for union staff have accelerated faster than at other schools as part of the catch-up process described above, the president's salary has still managed to increase at an even faster average rate (more than 7.7 percent versus 7.32 percent).

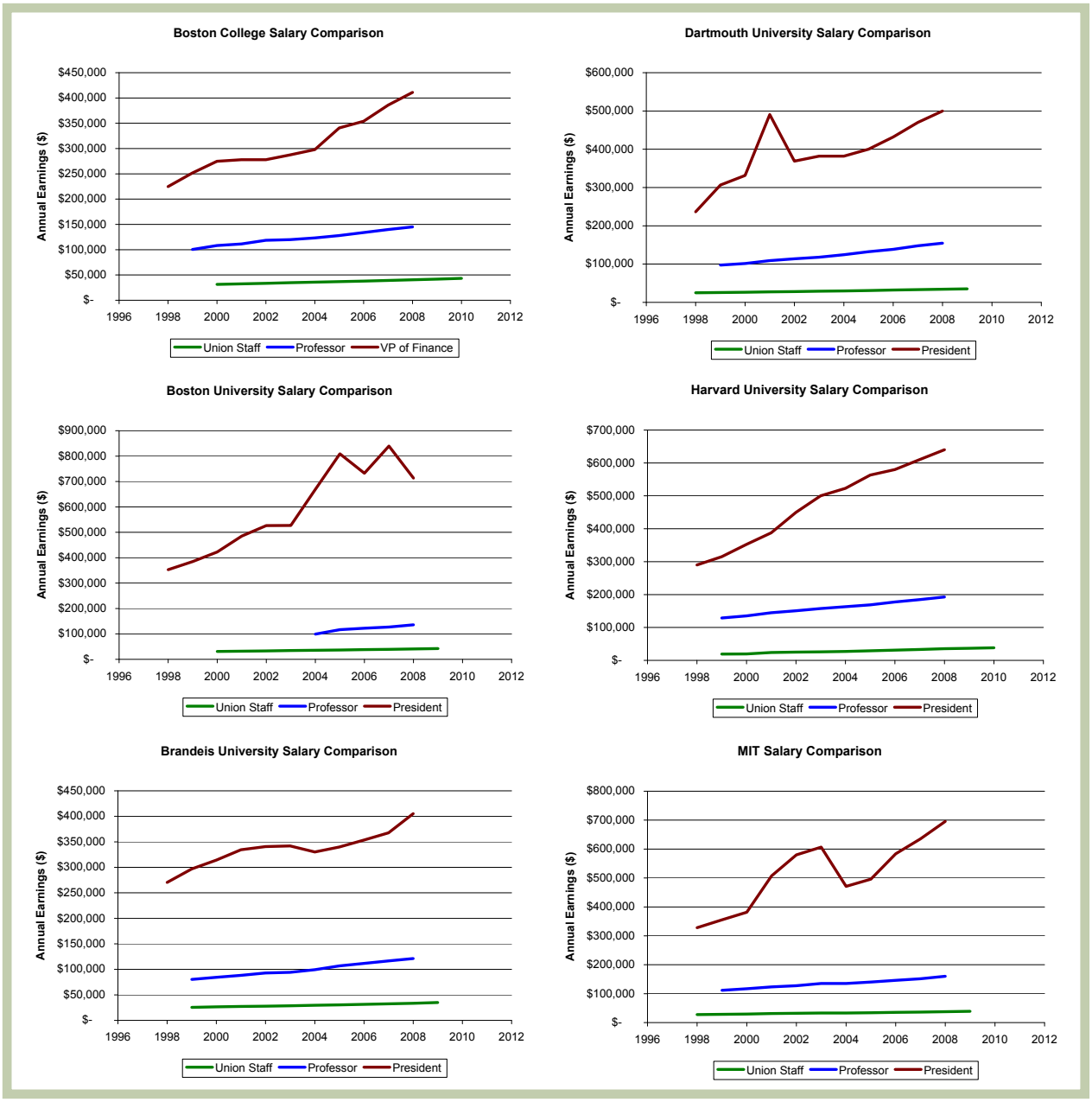
Table 10 Hourly Unionized Staff Wage Rates, 2000–2009

	Hourly Wage Rates										Annual Growth Rate
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2000-09
BC	15.14	15.63	16.14	16.66	17.16	17.67	18.24	18.83	19.44	20.07	3.18%
BU	14.97	15.49	15.95	16.69	17.23	17.75	18.33	18.92	19.54	20.32	3.45%
Brandeis	12.80	13.12	13.38	13.75	14.20	14.63	15.11	15.60	16.14	16.79	3.06%
Dartmouth	12.69	13.16	13.56	14.07	14.42	14.89	15.45	15.99	16.47	16.96	3.28%
Harvard	9.35	11.50	12.00	12.50	13.00	14.00	15.00	16.00	17.00	17.66	7.32%
MIT	14.15	15.00	15.40	15.82	15.93	16.41	16.94	17.53	18.14	18.77	3.19%

Source: Collective Bargaining Agreements; Tellus Institute analysis.
Note: Union staff represented by the custodian position, a category commensurable across all schools.

It should be borne in mind, as we have seen above, that the most highly compensated administrators at schools that have most fully embraced the Endowment Model are not college presidents, but rather the chief investment officer or other senior investment or finance officers. At Harvard, the top 10 most highly paid officers over the last decade have all been employees of Harvard Management Co., and each has made multimillion-dollar pay packages. Former Dartmouth CIO David Russ made more than any other officer for at least two of his years on campus, as did Deborah Foye Kuenstner during her brief stint at Brandeis. MIT CIO Seth Alexander is now the highest paid officer on campus. Although our trend analysis presented in these tables and figures has not factored in these salaries, doing so would have further magnified the widening pay differentials between top administrators and more modestly paid unionized staff and faculty. Some senior administrators have admirably taken pay freezes and occasional salary cuts, but such symbolic gestures do not reverse the longer-term compensation trends on campus, especially when they accompany further rounds of layoffs and staff reductions, as described below.

Figure 27 Salary Comparison by School



Source: Collective Bargaining Agreements; AAUP; IRS Forms 990; Tellus Institute analysis. *Note:* Union staff represented by the custodian position. Faculty salary is the average for full professors.

Even when the Endowment Model "works" best by generating excess returns, the rewards given to top management during the flush years have distorted pay scales on campus and within higher education more broadly. And because these schools are among the very largest employers in their communities, magnification of social inequality in campus pay scales shapes wider increases in social inequality throughout their regional economies. The exorbitant pay these senior administrators have received is passed along in the form of higher prices within their local economies, raising the cost of living in ways that magnify the effects of widening pay differentials even more acutely.[124] In tougher times like today, when the prospects of job loss and reduced pay

Table 11 Average Annual Increase in Compensation, 2000–2008

Compensation Comparison Average Annual Increase 2000–2008			
School	Union Staff	Faculty	President
BC	3.18%	3.73%	5.17%
BU	3.45%	5.07%	6.78%
Brandeis	3.06%	4.64%	3.24%
Dartmouth	3.28%	5.39%	5.27%
Harvard	7.32%	4.52%	7.73%
MIT	3.19%	4.01%	7.80%

Source: Collective Bargaining Agreements; AAUP; IRS Form 990; Tellus Institute analysis. *Note:* Union staff represented by the custodian position. Faculty salary is the average for full professors.

and benefits loom largely over staff, the social consequences of the Endowment Model bear even more heavily upon those who rarely benefited from its upside potential in the first place.

Economic Impact of Reductions in Force

Given these six schools' prominence as employers in their local economies, the impact of reductions in force translates into quantifiable economic stress on their host communities and the surrounding region from which they draw their workforce.[125] In its most recent economic impact report, Harvard has highlighted the resilience of employment in the higher education sector during hard times. "Colleges and universities are notable," the report notes, "not only for their contribution to employment growth, but for their relative stability. During past economic downturns they have tended to remain stable—and during some periods have kept growing—even as other leading industries were shedding jobs."[126] However, in the current recession, the resilience of institutions that have most fully embraced the Endowment Model of Investing and most deeply relied on endowment income to fund operations has clearly diminished.

In response to endowment declines, various reductions in force have been implemented at most of the schools in our sample starting in 2009, directly impacting approximately 2,000 workers.[127] Brandeis has seen more than 82 layoffs, beyond the Rose Art Museum debacle, and more reductions are planned. Dartmouth has laid off or eliminated positions for 275 staff member, reduced hours for 107 employees, encouraged 105 early retirements, and imposed a hiring freeze earlier this year. At Harvard 310 layoffs have been announced, following 530 voluntary early retirements, and another 103 employees have had their hours reduced. MIT has laid off 135 staff and reduced hours for many others that have not been quantified. At Boston University, which relies much less heavily on its endowment to fund operations, "only" 51 layoffs have been announced and another 200 positions have been eliminated. A hiring freeze has also been in place since late 2008. Because there are no standard sources or formats for reporting reductions in force, these figures are by no means comprehensive, but they provide a sense of the magnitude of the reductions and, for our purposes, a basis for estimating the minimum regional economic impacts they have begun to cause.

At Boston College, where the Endowment Model has not taken as firm a hold as at our other schools (as noted above, BC's portfolio has remained the most liquid among our six cases, and the college is the only one yet to hire a chief investment officer), we have been unable to quantify any reported reductions in force. A pay freeze for all staff making more than $75,000 was instituted in an effort to avoid layoffs, and some unspecified number of unfilled positions was reported to be eliminated.[128] Rather than laying off staff, the college reached a settlement with employees represented by SEIU Local 615 over a new six-year contract guaranteeing no layoffs.

The reductions in force at the other schools, however, have impacts well beyond the immediate borders of their respective campuses. When jobs are lost and incomes decline, families struggle to pay mortgages and other expenses, spending in the community is reduced, and local businesses and suppliers—from restaurants and retailers to building contractors and other service providers—suffer. In order to provide a sense of the overall economic impact of these reductions in force, we have used the Regional Input-Output Modeling System (RIMS II), applying regional multipliers developed by the U.S. Commerce Department's Bureau of Economic Affairs for the educational services sector in the Boston-Cambridge-Quincy, MA-NH, met-

ropolitan region and the Claremont-Lebanon, NH-VT, Combined Statistical Area.[129] Lacking more precise data on wages and salaries of the actual positions affected, we have made the simplifying assumption that the layoffs and positions eliminated are representative of the range of positions across the universities. We therefore assign an average annual salary of $60,000 for the Boston region and $50,000 in the Upper Valley, based on regional compensation data from the Bureau of Labor Statistics and the Massachusetts Office of Labor and Workforce Employment. These figures fall above the average annual hourly wage earner's at the six schools but below that of professional staff, and thus provide reasonable estimates across the full spectrum of affected levels of employment. If one considers the total personnel costs (excluding benefits) and the total employment at each institution, these remain very conservative figures for running impact analyses.

Of the 2,000 workers affected, at least 1,053 jobs were directly lost at the six institutions since 2008, through layoffs and positions eliminated: 778 in the Boston region and 275 in the Upper Valley. We therefore estimate the direct earnings lost as a result of these reductions at more than $46 million per year in the Boston region and almost $14 million in the Upper Valley. By applying RIMS II multipliers to the lost earnings from reductions in force, we arrive at estimated annual economic losses in the Boston region of about $135 million per year, and losses of more than $30 million in the Upper Valley. Table 12 provides a summary of these direct earnings losses and their broader regional economic impact. The additional community economic losses attributable to the other reductions faced by the remaining 1,000 employees–from pay freezes, reduced hours, increased healthcare costs, and early retirements, among others—will further magnify these negative impacts, but given the limited information available about their magnitude, we have not attempted to quantify them here. Among the six schools, therefore, we estimate at a very minimum more than $160 million in lost annual economic activity in the communities in which these schools are situated, due solely to job losses. As additional layoffs and further reductions take effect, these costs increase.

Estimated losses in short-term economic activity provide only a rough preliminary effort at accounting for the wider social costs of endowment declines. More difficult to quantify is the pervasive sense of uncertainty and insecurity that such reductions have created on campuses. In essence, the Endowment Model's downside risks have created a demoralizing crisis in human resource management. Though some institutions have made good faith efforts to soften the blow through extended health benefits, career counseling, and other forms of support, the reductions in force nevertheless hurt morale, not only for staff but also for students, faculty, and administrators. Today as endowments recover their losses in the markets, schools using layoffs to cut costs are effectively contributing to a jobless recovery. Our estimates of the costs of reductions in force therefore only begin to quantify the short-term scale of job losses that will have much longer-term impacts on the affected regions.[130]

Table 12 Annual Regional Economic Impacts of Reductions in Force

Annual Regional Economic Impacts of Reductions in Force			
School	Reductions in Force	Annual Loss of Direct Earnings	Regional Annual Economic Impact
BC	Unspecified	N/A	N/A
BU	251	$15,060,000	$43,487,663
Brandeis	82	$4,920,000	$14,207,125
Harvard	310	$18,600,000	$53,709,863
MIT	135	$8,100,000	$23,389,779
Boston Region Total	**778**	**$46,680,000**	**$134,794,430**
Dartmouth	275	$13,750,000	$30,285,470
Upper Valley Region Total	**275**	**$13,750,000**	**$30,285,470**

Source: Tellus Institute

Community Costs of Tax-Exemption

Such cost-cutting measures that externalize costs onto communities have strained town-gown relations in municipalities that forgo considerable property tax revenue because of the tax-exempt status of schools, which often have extensive real estate holdings.[131] The six colleges we have studied are all among the largest land and property owners in their respective communities. MIT occupies 168 acres in the dense city of Cambridge. Even though about 72 percent of its total assessed property value of almost $3.5 billion is tax exempt, MIT has nevertheless been the largest property taxpayer in Cambridge for more than a decade. Harvard also ranks as one of the top five taxpayers to Cambridge, though the vast majority of its holdings are also tax exempt. Among the many tax-exempt educational and medical institutions in Boston, Boston University is the largest property owner with an assessed value of almost $2.4 billion, 89 percent of which, valued at more than $2.1 billion, is tax-exempt. Virtually all of Boston College's $576 million of property in Boston is tax-exempt. And in the rural town of Hanover, New Hampshire, Dartmouth College's tax-exempt property has an assessed value of almost $1.3 billion, which is equivalent to 58 percent of the total assessed value of taxable property in the entire town.

Tax-exempt institutions are required to pay taxes for commercial and other noninstitutional uses of their property, but the extent of their tax-exempt holdings greatly limits the property tax revenues available to their host municipalities. As a recent report from the mayor of Boston's PILOT Task Force stated:

These institutions are situated largely on tax-exempt land. Property taxes are a critical part of City revenue, funding police, fire and public works services, and residential and commercial taxpayers are left to cover the cost of providing these essential city services to exempt institutions. As these institutions grow, so too does the property tax burden placed on taxpayers.[132]

As summarized in Table 13, these six institutions collectively own tax-exempt property in their host communities with an assessed value of more than $10.6 billion. Acknowledging the fiscal impact of their tax-exempt privileges, some schools, such as BC, BU, Harvard and M.I.T., do provide some payments in lieu of taxes, or PILOTs, although Brandeis and Dartmouth do not.[133] In fiscal year 2009, these PILOTs totaled only $11.5 million, less than 5 percent of the $235 million in taxes these six schools would have had to pay if their exempt property were taxable. The tax-exempt status of this property, therefore, represents a public benefit to these schools of almost $224 million per year. As Table 13 indicates, the benefit varies widely from school to school. By not making PILOTs, Dartmouth and Brandeis receive the highest subsidies, in percentage terms, for their tax-exempt holdings in their respective communities of Hanover, NH, and Waltham, Mass. As a percentage of its potential tax liability on its tax-exempt property, BU makes the largest PILOTs to the cities of Boston and Brookline, at the rates of 8.5 percent and 19 percent respectively. BC, however, pays Boston less than 2 percent of what its tax-exempt property might otherwise be assessed, and it pays the suburban community of Newton even less. Harvard pays only 5 percent of its potential tax liability through PILOTs to both Boston and Cambridge, while MIT pays Cambridge less than 4 percent of its potential tax liability on exempt property.

Recognizing the inequitable nature of existing PILOT arrangements among nonprofit organizations in the city of Boston, Mayor Thomas Menino established a PILOT Task Force in early 2009 to set new standards and develop a structure for a consolidated payment negotiation system aimed at longer-term arrangements between the city and these institutions. In early April 2010, the task force released its draft recommendations for a new approach to calculating payments in lieu of taxes. The report recommends creating a standard level of contribution for all major

tax-exempt property owners (though small owners would remain exempt); basing PILOT contributions on the value of property owned; giving credit for "community services" provided by the nonprofit (up to 50 percent of the total PILOT); allowing for a five-year phase-in of the new approach; and keeping the program voluntary. The city is advocating that PILOTs increase over time to 25 percent of what the tax-exempt institutions would pay in taxes if their property were not tax-exempt. If this enhanced PILOT program were implemented, the three colleges with Boston operations that we have reviewed would owe the city almost $21 million in additional PILOT payments per year, with BC liable for $3.5 million, BU $9.5 million, and Harvard $8 million.

Table 13 Tax Exempt Property and PILOT Payments

Tax Exempt Property and PILOT Payments						
Institution	Community	FY09 Total Assessed Value of Tax-Exempt Property	FY09 Tax if Property Not Tax Exempt	FY09 PILOT Payments	"Forgone" Tax Revenue	% of Total Potential Tax Liability Paid in PILOT
Boston College	Boston	$561,952,500	$15,234,532	$293,251	$14,941,281	1.92%
	Newton	$516,229,400	$10,288,452	$100,000	$10,188,452	0.97%
Boston University	Boston	$2,115,919,700	$57,362,583	$4,892,138	$52,470,445	8.53%
	Brookline	$49,993,800	$865,893	$165,000	$700,893	19.06%
Brandeis University	Waltham	$175,821,600	$5,040,805	$0	$5,040,805	0.00%
Dartmouth College	Hanover	$820,509,400	$14,291,407	$0	$14,291,407	0.00%
Harvard University	Boston	$1,477,225,500	$40,047,583	$1,996,977	$38,050,606	4.99%
	Cambridge	$2,424,410,900	$45,457,704	$2,248,730	$43,208,974	4.95%
MIT	Cambridge	$2,489,211,000	$46,672,706	$1,774,000	$44,898,706	3.80%
	TOTAL	***$10,631,273,800***	***$235,261,666***	***$11,470,096***	***$223,791,570***	***4.88%***

Source: City Assessor's Offices; Tellus Institute analysis.

The Promise and Reality of Harvard's Allston Initiative

The costs imposed on communities from tax-exempt property have been magnified in Harvard's case where the school's severe endowment decline has forced the university to curtail its ambitious plans to expand its campus to the Boston neighborhood of Allston, across the Charles River from Harvard's main campus in Cambridge. Harvard's Allston Initiative promised to transform the neighborhood and create unprecedented economic, recreational, and cultural opportunities. Harvard's decision to suspend the initiative will have negative impacts on the neighborhood and throughout the region due to the loss or postponement of expected jobs, stalled economic development, and the on-going underutilization of land the university has aggressively acquired over the last two decades. The Allston delay has also created considerable uncertainty among residents and area businesses and further soured already strained relations with the community.

Harvard has had a presence in Allston for more than a century, dating back to before the construction of Harvard Stadium in 1903.[134] Over time with the building of Harvard Business School's campus in the late 1920s and the repeated expansion of its athletic facilities, the university has become a major force in the community. During the past three decades, Harvard's impact on Allston has grown and accelerated with the acquisition of more than 200 acres of property,

sometimes at the expense of thriving existing businesses and other uses. The vast majority of this property has remained undeveloped for many years. As a result, tension has repeatedly arisen between neighborhood residents and the university about Harvard's impact on the neighborhood, especially related to what has been described as the university's "land banking" or "property warehousing" practices. In its comments to the Boston Redevelopment Authority concerning Harvard's impact on the neighborhood in 2006, the Allston Brighton Community Planning Initiative, a coalition of leading community-based organizations and residents, wrote: "We feel that much of the blight that exists along the Western Avenue corridor is directly related to Harvard's property purchases and forced vacancies of commercial tenants valued by our community, including Frugal Fannie's, K-Mart, and Office Max. Harvard is essentially warehousing properties that may become institutional uses in the future."[135] Pepsi Bottling Group, a Volkswagen dealership, and numerous smaller businesses were among the long-standing blue-collar employers whose long-term leases Harvard refused to renew upon assuming ownership.[136]

Harvard's Allston Initiative tried to address these long-standing town-gown tensions. In January 2007, the university unveiled a long-range vision for its campus at Allston. The amended "institutional master plan," which Harvard has regularly filed with the city of Boston, projected a 50-year expansion of its physical presence in Allston, unfolding in two phases, each involving the construction of 4 to 5 million square feet of space for the sciences, the arts, several professional schools, including the Harvard School of Public Health, the Graduate School of Education, and the Business School, as well as undergraduate and graduate housing, and other academic uses.[137] At the time the university explained that "Harvard's Allston Initiative is expected to generate approximately 14,000 to 15,000 jobs over the next 50 years, with about 5,000 jobs created in the first 20-year phase. The construction of academic projects in Allston is expected to generate an average of 500 to 600 construction jobs per year for each of the estimated 50 years of development."[138] While some employees already employed by the university were anticipated to relocate to the new Allston campus, most of the space would house new employees, and Harvard projected that 4,000 to 5,000 net new jobs would be created within the next 20 years (Phase I) and as many as 11,000 to 12,000 at full development over the next thirty years (Phase II).[139]

However, the plan's lack of specifics about a host of issues—from residential street access to basic brick-and-mortar project planning to the community benefits of a proposed art museum—upset neighborhood groups and fueled contentious community meetings.[140] Later that summer in 2007 the chief operating officer of Harvard's Allston Development Group, Christopher M. Gordon, wrote that Harvard's "highest responsibility is to deliver on the promise of the great land resource Harvard has in Allston with a 50-year planning horizon. We'll fulfill that promise," he continued, "when we build a remarkable campus and enrich the life of a great university, help grow the economy, and contribute to the quality of life of all in North Allston and beyond."[141] Before the university could break ground on the initial project of its first phase, a four-building, 589,000-square-foot, $1.2 billion Science Complex, it hammered out an agreement with the Boston Redevelopment Authority to provide a community benefits package worth $24 million in an effort to allay continued concerns about the impact of the Allston expansion on neighbors. The package provided increased funding for basic amenities such as sidewalks, streets, trees, additional landscaping around the Science Complex, playground space, and an unspecified "transformational project," to be developed after careful study of the community's needs.[142]

As for the Science Complex, it was the initial project of the first phase of the Allston development (Phase IA), slated to house Harvard's new Stem Cell Institute as well as other laboratory space. Between it and the Harvard Art Museum, Harvard's first Allston projects were expected to generate 1,500–1,850 jobs associated with construction over a two-year period and 1,000-

1,200 net new permanent jobs, according to Harvard's amended master plan.[143] These figures include: (1) the direct jobs in constructing the buildings and ultimately working in them, (2) the indirect jobs created to supply the construction and operational activities, and (3) the induced jobs created by the respending of the earnings by the newly created direct and indirect jobholders.[144] The projected employment impacts of Phase 1A are summarized in Table 14.

Table 14 Projected Employment Growth from Phase 1A of Harvard's Allston Development

Projected Employment Growth—Phase 1A	Employment
Net New Permanent Jobs	750–900
Spin-Off Jobs Related to New Permanent Jobs	*240–300*
Construction Jobs (2007–2009)	1,100–1,350
Spin-Off Jobs Related to Construction Jobs	*400–500*

Source: Harvard University Allston Campus, Institutional Master Plan Amendment, Dec. 15, 2006, p. 9-5.
Note: Spin-off jobs related to construction are for Suffolk County only.

Many of the these jobs will be suitable for the local labor market, including lab technicians, information technology workers, administrative support, building operations and maintenance, and other service employees.

Harvard finally began construction on the new Science Complex in spring 2008, but given the university's mounting financial difficulties due to endowment declines, president Drew Faust announced in February 2009 that expansion in Allston "will occur at a slower pace." In a Dec. 10, 2009, letter to the community, Faust stated that with below-grade construction of the Allston Science Complex complete, Harvard planned to "pause" further construction of the Science Complex and to review whether Harvard could even proceed with its Allston plans.

To estimate the broader economic impact of Harvard's halting of construction in Allston, we again use RIMS II and apply its final demand multipliers for the Boston region to Harvard's own job-creation estimates. We therefore assume employment levels related to Phase 1A, as summarized in Table 14, and calculate lost earnings using wages of $70,000 for construction workers and $60,000 for permanent Harvard employees, based on similar occupations in the Bureau of Labor Statistics' National Compensation Survey for the Boston region and prevailing wage rates for construction workers provided by the Massachusetts Office of Labor and Workforce Employment. In estimating the economic impact of a change in the timing or scale of a construction project, one would ideally conduct a discounted cash flow analysis, applying an appropriate discount rate to the delayed expenditures in order to measure the difference between expenditures originally scheduled and the stream of expenditures that eventually occur following the delay. However, because it remains unclear when, or even whether, construction on the Allston initiative will resume, it is unclear what an appropriate discount rate would be for the university. Therefore, we limit our initial estimation to the immediate short-term annual impacts over the first three years of the delay, before any significant discounting would be applicable.

As Table 15 illustrates, we estimate that a one-year delay in moving forward with the initial Phase 1A projects would result in lost direct earnings of more than $85 million and a total economic impact for the region of approximately $275 million. A two-year delay would result in lost short-term earnings estimated at more than $170 million, and a total economic impact of approximately $550 million. With a three-year delay, the figures increase to more than $270 million in lost earnings and a total regional economic impact of more than $860 million over the first three years.[145] These impacts are driven solely by the forgone earnings of construction workers and permanent employees; they do not include the impacts of the lost procurement spending for construction materials and equipment that would have occurred in the region. Our estimates are therefore conservative in nature.

Table 15 Allston Initiative Economic Impacts

Economic Impacts of Harvard's Allston Delays			
	1 Year Delay	2 Year Delay	3 Year Delay
Forgone Direct Earnings*	$86,750,000	$171,500,000	$273,500,000
Total Regional Economic Impacts	$274,837,205	$549,674,409	$860,879,624

Source: Tellus Institute * Construction and permanent workers

Nevertheless, even a three-year delay in Phase 1A represents significant short-term losses to the regional economy. Longer delays will further deepen the loss of economic development opportunities. Harvard's neighbors in Allston will pay the highest price for Harvard's thwarted ambitions, in lost community development, shuttered businesses, and a desolate landscape of under-utilized property.

Given that endowment declines and investment illiquidity are among the principal sources for Harvard's delays at Allston, these estimates provide a preliminary sense of the scale of some of the wider costs of the Endowment Model of Investing that Harvard has helped to pioneer. Reductions in force and delays and cancellations in construction projects impact not only the university's mission, operations, and identity; they also have much broader and longer-term impacts on the regional economy and its residents that need to be acknowledged. Harvard's experience in Allston is but the most prominent example of the impacts that result from the volatile nature of the Endowment Model.

While the scale and economic impacts of the Allston Initiative are unique to Harvard, similar project delays have occurred in other schools that we have reviewed. Boston University, for example, has halted $130 million of new construction projects.[146] Dartmouth has pushed back major upcoming renovations of residence halls by five years and postponed most other new construction.[147] BC has delayed construction of a 100,000 square foot science complex originally proposed in 2007 as part of a revised plan to reduce half of its anticipated construction costs over the next five years.[148] With fuller information about the projected costs and job impacts of these projects, one could readily extend our preliminary analysis to make broader estimates of the social costs of project delays.

VI. FROM SYSTEMIC RISK TO SUSTAINABILITY

The Endowment Model of Investing is broken. Whatever long-term gains it may have produced for colleges and universities in the past must now be weighed more fully against its costs—to campuses, to communities, and to the wider financial system that has come under such severe stress. The financial crisis has revealed that the risks of the Endowment Model of Investing—of volatility and illiquidity—are much higher than previously understood, particularly when amplified by the use of leverage. By assuming higher degrees of financial risk, endowment managers have intensified colleges' exposure to the rampant volatility of the capital markets at the cost of secure income streams and liquidity. Indeed, in the name of pursuing high investment returns, endowment managers and fiduciaries have increasingly jeopardized the very security of income that has traditionally defined what an endowment is. Understanding the full costs and consequences of the Endowment Model, however, requires going beyond narrow discussions of risks and returns merely at the level of the portfolio. The costs of endowment declines amount to considerably more than the loss in endowment values and reduced spending rates. We have provided a preliminary attempt to begin to highlight systemic risks embedded in the Endowment Model's investment strategies and to calculate its wider social costs. Cutbacks in programs and reductions in force and benefits demoralize college staff, faculty and students and extend throughout the regional economies in which schools play such important roles as sources of innovation and resilience. Taxpayers, politicians and policymakers are rightly upset when such reservoirs of tax-privileged wealth can have such spillover effects into their communities.

As long-term community institutions and institutional investors, colleges and universities have an important stake in the sustainability of both the wider financial system and the broader economies in which they participate. Rather than contributing to systemic risk and externalizing social costs, endowments should embrace their role as nonprofit stewards of sustainability. Rather than financing the shadow banking system, endowments should provide models for transparency, accountability and investor responsibility. The aftermath of the financial crisis clearly calls for a transformation of the Endowment Model of Investing—not simply a return to

a more "conservative" investment strategy. Instead, a more sustainable endowment model of investing is needed. Endowments need to foster greater resilience in times of crisis by investing in assets with greater liquidity and lower volatility, and a portion of excess returns generated during good times needs to be set aside in rainy-day funds for the bad.[149] But more fundamentally, endowments need to pursue "responsible returns" that remain true to their public purpose and nonprofit mission as tax-exempt institutions of higher learning.[150] By integrating sustainability factors into investment decisions and becoming more active owners of their assets, endowments can begin to seize the opportunities of long-term responsible stewardship.

College and university endowments were among the first institutional investors to take their rights and responsibilities as corporate shareowners seriously. In the early 1970s, Harvard and Yale created the first campus committees on investor responsibility, which developed some of the earliest ethical investment policies for endowments. Since then, they have made recommendations for how endowments should vote their proxies on shareholder resolutions related to social issues, and they provided models for similar governance structures at dozens of other schools. However, with the rise of the Endowment Model of Investing, its diversification into new asset classes beyond domestic public equities, and the increasing use of external investment managers, committees of investor responsibility designed for an earlier era have watched their relevance erode. Given the social costs of the Endowment Model of Investing, which this report only begins to explore, it is high time for colleges and universities not only to reassess risk but also to reclaim this legacy of responsible institutional investment.

ENDNOTES

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18 Frances Denmark, "Making the Grade," *Institutional Investor*, August 2007, pp. 53.

19 Chan, *et al.*, "Systemic Risk and Hedge Funds."

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21 *Harvard University Financial Report*, Fiscal Year 2009, 7.

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24 Orice M. Williams, Government Accountability Office, Letter to Collin Peterson, Chairman, Committee on Agriculture, U.S. House of Representatives, on Issues Involving the Use of the Futures Markets to Invest in Commodity Indexes, January 30, 2009; Laura Cohn, with William Symonds, "Striking Gold in Commodities," *Business Week*, October 25, 2004; and Dan Jamieson, "Soaring Commodities Prices Raise Bubble Fears," *Investment News*, April 8, 2008, citing the influence of Yale's allocation to real assets on the rush to commodities markets.

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120 Comprehensive Annual Financial Report, July 1, 2008—June 30, 2009, City of Cambridge, Massachusetts, p. 92.

121 Comprehensive Annual Financial Report, Fiscal Year ended June 30, 2009, City of Waltham, Massachusetts, p. 115.

122 These figures are based on various reports from each institution, generally prepared by the respective Offices of Institutional Research. The employment figures represent "head counts" as opposed to full-time equivalent (FTE) employees, except for BC faculty and Harvard Staff, for which only FTE are reported.

123 Data sources for wage and salary figures include: (1) Collective bargaining agreements for each school, using a custodian's salary as a proxy for the range of union job classifications (note that annual increases in a given contract are generally the same across job classifications); (2) The Annual Report on the Economic Status of the Profession, American Association of University Professors, using full professor as the proxy for faculty (note that on a percentage basis junior faculty salaries have increased at a higher rate); and (3) annual IRS Form 990 filings from each school, which provide information on the highest compensated employees. Only direct wages or salaries are included; benefits are excluded for all employee types. Because the president of Boston College does not receive a salary, the compensation for BC's financial vice president and treasurer was used instead.

124 On this broader phenomenon, see Baker, *Plunder and Blunder*, 136.

125 As used in this report, "reductions in force" includes layoffs, elimination of positions, furloughs, reduced hours, early retirements, and hiring freezes.

126 "Investing in Innovation: Harvard University's Impact on the Economy of the Boston Area," January 2009, p. 4.

127 There are no standard data sources or formats for reduction in force information. The figures cited here are drawn from a variety of sources, both institutional (e.g., "Provost's Decisions Regarding Brandeis 2020 Proposals," Provost Marty Krauss, March 8, 2010; "An Update on Dartmouth's Strategic Budget Process," President Jim Yong Kim and other senior administrators, January 15, 2010; MIT's "Institute-wide Planning Task Force Final Report," December 16, 2009) and press reports from, e.g., the *Boston Globe*, *BU Today*, *BrandeisNOW*, *The Dartmouth*, *Valley News*, and the *Harvard Crimson*.

128 Christopher Condon, "Boston College Freezes Pay after Endowment Loss," Bloomberg.com, March 13, 2009.

129 U.S. Department of Commerce, Bureau of Economic Affairs, Regional Input-Output Modeling System, RIMS II Multipliers (2006/2006), Table 2.5, Total Multipliers for Output, Earnings, Employment, and Value Added by Industry Aggregation. The RIMS multipliers are widely used in both the public and private sector to estimate regional economic and job impacts, and as we shall see below, Harvard University has relied on similar models to project job creation associated with its Allston Initiative.

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131 Goodnough, "Slump Revives Town-Gown Divide across U.S.," *New York Times*, May 8, 2009.

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133 Note that under New Hampshire state law, Dartmouth, unlike Massachusetts nonprofits, is required to pay local property tax on the value of dormitories, dining and kitchen facilities in excess of $150,000. Therefore,

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134 See http://www.allston.harvard.edu/ai.htm.

135 Letter to Mr. Gerald Autler, Boston Redevelopment Authority from Allston Brighton Community Planning Initiative, June 2, 2006; included in Appendix A of the Harvard Allston Campus Institutional Master Plan Amendment, December 15, 2006.

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138 The Plan for Harvard in Allston (Draft), Executive Summary, January 2007, p. 28. These estimates vary somewhat from a January 11, 2007 Harvard press release, which estimates "700 to 800 construction-related jobs per year while building is under way. Over the course of 50 years, development in Allston is expected to create up to 10 million square feet of new space and generate 11,000 to 12,000 new jobs, plus thousands of construction-related jobs." See also "Harvard Submits Multi-Decade Master Plan Framework for Allston," HU Office of News & Public Affairs, January 11, 2007. These figures also vary from those in the Institutional Master Plan Notification Form for the Harvard University Allston Campus submitted to the Boston Redevelopment Authority on January 11, 2007 which estimated: "6,000 to 7,000 permanent jobs over the next two decades."

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APPENDIX: INVESTMENT ASSETS

The identified investment assets of each school are listed in this appendix.

Sources for these investment assets come from Thomson Reuters Nelson, US SEC filings, IRS Form 990 filings, Massachusetts and New Hampshire filings, and various news sources and press releases. These have been compiled by Tellus Institute

Boston College Investment Assets (Identified)	
Manager or Holding	**Reported Value**
Alcatel NA Cable Systems, Inc. Equities - Emerging Markets	$ -
Anne Arundel (MD) Retirement Systems Fixed-Income - Intermediate-term	$ 30,100,000
Boston College Equities Small-cap Growth	$ 11,600,000
Capital Growth Management LP Equities – Large-cap Growth	$ -
Capital Growth Management LP Equities Growth	$ 33,000,000
Evergreen Investments	$ 1,600,000
FAF Advisors, Inc Equities - Aggressive Growth	$ 67,000,000
Frontier Capital Management Company, LLC Equities - Growth & Value	$ -
Frontier Capital Management Company, LLC Equities - Small-cap Growth	$ -
Gabelli Asset Management Co. Equities - Value	$ 59,200,000
GAM London Limited Equities - World ex-US/EAFE	$ 11,600,000
GAM London Limited Equities Japan	$ 13,600,000
Goldman - Small cap value equity	$ 180,000,000
Goldman Sachs Asset Management, LP Equities – Large-cap	$ 180,000,000
Grantham, Mayo, Van Otterloo & Co., L.L.C Equities – EAFE	$ 77,400,000
Grantham, Mayo, Van Otterloo & Co., L.L.C Equities – Mid-cap	$ 36,800,000
Grantham, Mayo, Van Otterloo & Co., L.L.C Equities – World ex-US/EAFE	$ 44,600,000
Iridian Asset Managerment LLC - Equities - Small-cap Growth	$ 40,000,000
Iridian Asset Managerment LLC - Equities - Value	$ -
J.P. Morgan Investment Management Inc (New York) Equities - International	$ 24,000,000
JP Morgan - Special Situation Property Fund	$ 12,000,000
Kalmar Investments Inc. Equities – Small-cap	$ 35,000,000
Loomis, Sayles & Company, L.P. Fixed Income – Long-term	$ 104,600,000
M.A.Weatherbie & Company, Inc Equities - Small-cap Growth	$ -
Manley Asset Mangement, LP Equities - Small-cap Value	$ 52,700,000
MIT Private Equity	$ -
Moody Aldrich Partners, LLC Equtieis - Mid-cap Value	$ 53,200,000
Moody Aldrich Partners, LLC Equtieis - Value	$ -
Morgan Stanley Investment Management Inc. (New York) - Equities- World ex-US/EAFE	$ 50,400,000
Northern Trust - Northern Trust S&P 500 Value Index	$ 1,600,000
Northern Trust Global Investments Fixed Income - Short-term	$ 3,200,000
Pyramis Global Advisors Trust Company Equities - Mid-cap Growth	$ 200,000,000
Sequoia Capital	$ -
Standish Mellon Asset Management Company, LLC Fixed Income	$ 13,900,000
State Street Global Advisors - Active US Large Cap Core Strategy	$ 3,880,000
State Street Global Advisors - International Alpha Strategy	$ -
State Street Global Advisors (US) Equities - International	$ -
State Street Global Advisors (US) Equities - World ex-US/EAFE	$ 7,800,000
T. Rowe Price Associates, Inc. Fixedm Income - Intermediate-term	$ 29,100,000
Templeton Praivate Client Group Equities - Small-cap Growth	$ 16,500,000
Vanguard Group, Inc Equities - Growth	$ -
Vanguard Group, Inc Equities - Mid-cap	$ 3,500,000
Vanguard Group, Inc Mutual Funds	$ 28,000,000
Vanguard Group, Inc S&P Index 500	$ 12,000,000
TOTAL	$ 1,437,880,000

Source: Tellus Institute; Thomson Reuters Nelson; US SEC; IRS 990; Massachusetts Filings; New York Times, Press Releases.

Boston University Investment Assets (Identified)	
Manager or Holding	**Reported Value**
Goldman - Structured Large Cap Growth	$ -

Source: Tellus Institute; Thomson Reuters Nelson; US SEC; IRS 990; Massachusetts Filings; New York Times, Press Releases.

Brandeis University Investment Assets (Identified)	
Manager or Holding	**Reported Value**
Amherst College - Equities - Hedged	$ 12,200,000
Anne Arundel (MD) Retirement Systems Fixed-Income - High Yield	$ 12,300,000
Armstrong Shaw Associated, Inc - Equities-Large-cap Value	$ 25,700,000
AXA Rosenberg Investement Management Ltd Equities - Small-cap	$ 28,000,000
AXA Rosenberg Investement Management Ltd Equities - Small-cap Value	$ 29,000,000
Capital Guardian Trust Company Equities - Large-cap Growth	$ 38,300,000
Capital Guardian Trust Company Equities - Mid-cap Growth	$ 9,000,000
Credit Suisse Asset mangement, LLC (US) Equities - Growth	$ 306,600,000
Harris Assocaties LP Equities - International Value	$ 120,000,000
Harris Assocaties LP Equities - Small/Mid-cap Value	$ -
Morgan Stanley Investment Management Inc. Fixed Income - Global	$ 66,600,000
Perry Capital, LLC - Equities - Hedged	$ 14,300,000
Putnam Investment Management, LLC Equities	$ 69,600,000
Putnam Investment Management, LLC Equities - Large-cap	$ 59,600,000
Seix Advisors Fixed Income - Long-term	$ 22,800,000
Shenkam Capital Management, Inc. - Fixed-Income Long-term	$ 22,800,000
Silchester International Investors Ltd - Equities - EAFE	$ 46,200,000
Silchester International Investors Ltd - Equities - Mid-cap Value	$ 44,000,000
Thomas H. Lee Partners LP Venture Capital	$ 4,100,000
Wasatch Advisors, Inc	$ 56,800,000
TOTAL	$ 987,900,000

Source: Tellus Institute; Thomson Reuters Nelson; US SEC; IRS 990; Massachusetts Filings; New York Times; Press Releases.

Dartmouth College Investment Assets (Identified)		
Manager or Holding		**Reported Value**
AllianceBernstein	$	-
Apollo Management	$	25,000,000
Apollo Management	$	15,000,000
Blackstone Distressed Security Advisors	$	-
Convexity Capital	$	-
Farallon	$	-
Greylock Partners Fund XIII	$	10,000,000
Leeds Weld & Co	$	10,000,000
Lone Pine Capital	$	10,000,000
Maverick	$	-
Morgan Stanley Real Estate Fund V International, L.P.	$	20,000,000
Morgan Stanley Real Estate Fund VI International - TE, L.P.	$	-
Morgan StanleyGlobal Best Ideas Fund, L.P.	$	-
Och-Ziff Capital Management	$	-
TA Associates Fund XI, L.P	$	-
Wellington	$	-
Welsh Carson Anderson & Stowe Capital Partners IV, L.P.	$	10,000,000
Welsh Carson Anderson & Stowe X, L.P.	$	15,000,000
Welsh Carson Anderson & Stowe, L.P.	$	20,000,000
Wellspring Capital Partners Fund III	$	-
TOTAL	$	135,000,000

Source: Tellus Institute; Thomson Reuters Nelson; US SEC; IRS 990; New Hampshire Filings; New York Times; Press Releases.

MIT Investment Assets (Identified)		
Manager or Holding		**Reported Value**
238 Group LLC	$	-
Acme-Wiley Associates III LP	$	-
Alchemy Plan (Cambridge) LP	$	-
ARUBA NETWORKS INC	$	348,166
Chickadee LP	$	-
FRANKLIN RES INC	$	1,053,500
GMO	$	-
ISHARES MSCI EAFE INDEX FUND	$	69,544,119
ISHARES TR	$	33,149,453
Mallard Fund LP	$	-
Meadowlark Associates LLC	$	-
MIT Private Equity Management Co.	$	-
MIT Private Equity Management Co. II	$	-
MIT Private Equity Management Co. III	$	-
MIT Private Equity Management Co. IV	$	-
Northhaven Partners III LP	$	-
SPDR S+P 500 ETF TRUST	$	40,378,278
STRATEGIC HOTELS + RESORTS I	$	29,271
TEXTRON INC	$	300,960
Thirty-Eight Sidney Street LP	$	-
TIVO INC	$	2,019,712
TUESDAY MORNING CORP	$	27,397
University Park Phase II LP	$	-
VANGUARD EMERGING MARKET ETF	$	14,838,884
Wellington	$	-
Wexford Special SIT 1996 INST	$	-
Wexford Special SIT 1997 INST	$	-
Wexford-MIT Energy II LP	$	-
Wexford-MIT Energy LP	$	-
WTC-CTF INFL Prot Core Bond	$	-
TOTAL	$	161,689,740

Source: Tellus Institute; Thomson Reuters Nelson; US SEC; IRS 990; Massachusetts Filings; New York Times; Press Releases.

Harvard Investment Assets (Identified)	Manager or Holding	Reported Value
President and Fellows of Harvard College	TOTAL IDENTIFIED	$ 16,316,315,696
Publicly Traded Securities		*$ 3,034,081,000*
	ABOVENET INC	$ 156,000
	ADVANCED TECHNOLOGY ACQUI	$ 3,865,000
	ALPHA SECURITY GROUP CORP	$ 2,329,000
	AMBASSADOR 3.75% 4/15/202 - Corporate Bond (Fixed Income)	$ 1,038,000
	AMBASSADORS INTERNATIONAL	$ 599,000
	AMERICA MOVIL ADR SERIES	$ 5,163,000
	AMERICAN DENTAL PARTNERS	$ 27,000
	ANGIOTECH PHARMACEUTICALS	$ 62,000
	ANGLOGOLD ASHANTI-SPON AD	$ 2,009,000
	ANTIGENICS 5.25% 2/1/25 - Corporate Bond (Fixed Income)	$ 270,000
	ATHEROS COMMUNICATIONS	$ -
	ATP OIL & GAS CORPORATION	$ 69,000
	AU OPTRONICS CORP-SPON AD	$ 550,000
	BAIDU INC - SPON ADR	$ 1,087,000
	BANCO BRADESCO ADR	$ 995,000
	BANCO SANTANDER CHILE ADR	$ 229,000
	BANCOLOMBIA S.A.-SPONS AD	$ 7,637,000
	BANK OF AMERICA CORP	$ 35,584,000
	BJ SERVICES CO	$ 24,108,000
	BLACK & DECKER CORP	$ 12,491,000
	BPW ACQUISITION CORP	$ 9,094,000
	BRASIL DISTR PAO ADR	$ 135,000
	BRF - BRASIL FOODS SA-ADR	$ 492,000
	BURLINGTON NORTHERN SANTA	$ 42,341,000
	CABLEVISION SYSTEMS	$ 1,163,000
	CADBURY PLC-SPONS ADR	$ 7,610,000
	CALIPER LIFE SCIENCES INC	$ 798,000
	CELLCOM ISRAEL LTD	$ 1,039,000
	CEMEX SAB-SPONS ADR PART	$ 514,000
	CEMIG SA - SPONS ADR	$ 320,000
	CEMIG SA -SPONS ADR	$ 935,000
	CHARTER CO 6.5% 10/01/202 - Corporate Bond (Fixed Income)	$ 32,000
	CHARTER COMMUNNICATIONS	$ 27,000
	CHATTEM INC	$ 15,395,000
	CHECK POINT SOFTWARE TECH	$ 5,022,000
	CHINA DIGITAL TV HOLDING	$ 100,000
	CHINA MOBILE LTD ADR	$ 16,012,000
	CHIPOTLE MEXICAN GRILL	$ 4,000
	CHUNGHWA TELECOM LTD-ADR	$ 2,000
	CIA BRASILEIRA-SP ADR PRE	$ 541,000
	CIA CERVECERIAS UNIDAS	$ 34,000
	CIA PARANAENSE ENER-SP AD	$ 669,000
	CIA PARANAESE ENER-ADR P	$ 173,000
	CIA VALE DO RIO DOCE - AD	$ 3,275,000
	CIA VALE DO RIO DOCE-SP A	$ 1,101,000
	CIT GROUP INC	$ 3,002,000
	CITIGROUP INC	$ 166,000
	COHEN AND STEERS REIT UTI	$ 298,000
	COMCAST CORP CL A	$ 7,419,000
	COMPANHIA DE BEBIDAS-PR A	$ 344,000
	COMPANHIA DE BEBIDAS-PRF	$ 652,000

Harvard Investment Assets (Identified)		
	Manager or Holding	**Reported Value**
	COPA HOLDINGS SA - CLASS	$ 275,000
	CRAWFORD & COMPANY - CL A	$ 1,162,000
	CREDICORP LTD	$ 1,540,000
	CREDITCORP LTD	$ 61,000
	CTRIP.COM INTERNATIONAL	$ 160,000
	CTRIP.COM INTERNATIONAL-A	$ 232,000
	DANA HOLDING CORP	$ 6,000
	DELTA AIR LINES INC	$ 2,000
	DIEDRICH COFFEE INC	$ 146,000
	DWS RREEF REAL ESTATE FD	$ 1,713,000
	ECOPETROL SA SPONSORED AD	$ 316,000
	EMPRESA NAC ELEC-CHIL-SP	$ 6,055,000
	ENCORE ACQUISITION CO	$ 9,767,000
	ENER1 INC	$ 123,000
	ENERSIS - ADR	$ 2,057,000
	ENTERPRISE AQUISITION COR	$ 2,289,000
	FGX INTERNATIONAL HOLDING	$ 2,109,000
	FINANCIAL FED CORP	$ 16,803,000
	FLEETWOOD ENTERPRISES INC	$ 36,000
	FOCUS MEDIA HOLDING - ADR	$ 98,000
	FOMENTO ECONOMICO MEX ADR	$ 308,000
	FORD 4.25% 12/15/36 - Corporate Bond (Fixed Income)	$ 1,744,000
	FORD MOTOR C10 1/22/11 - Call (Option)	$ 2,228,000
	FORESTAR REAL ESTATE GROU	$ 43,000
	GERDAU SA -SPON ADR	$ 870,000
	GOLD FIELDS LTD-SPONS ADR	$ 1,967,000
	GRUPO TELEVISA S.A. (1 GD	$ 284,000
	HARMONY GOLD MNG-SPON ADR	$ 1,408,000
	HECLA 6.5% PFD 1/1/11	$ 565,000
	HUNTSMAN CORP	$ 177,000
	I2 TECHNOLOGIES INC	$ 4,202,000
	ICO INC.	$ 3,571,000
	ICT GROUP INC	$ 10,562,000
	IMS HEALTH INC	$ 213,000
	INDIA FUND INC	$ 4,256,000
	IOWA TELECOMMUNICATIONS S	$ 6,551,000
	IPATH MSCI INDIA INDEX ET	$ 127,114,000
	ISHARES FTSE/XINHUA CHINA	$ 455,603,000
	ISHARES MEXICO INDEX SERI	$ 37,618,000
	ISHARES MSCI BRAZIL	$ 400,561,000
	ISHARES MSCI CHILE INVEST	$ 6,630,000
	ISHARES MSCI EMERGING MKT	$ 613,710,000
	ISHARES MSCI HONG KONG IN	$ 5,382,000
	ISHARES MSCI ISRAEL CPD I	$ 2,432,000
	ISHARES MSCI ISRAEL INDEX	$ 444,000
	ISHARES MSCI JAPAN INDEX	$ 1,000
	ISHARES MSCI MALAYSIA	$ 46,976,000
	ISHARES MSCI MALAYSIA (FR	$ 1,099,000
	ISHARES MSCI MEXICO INVES	$ 80,707,000
	ISHARES MSCI SOUTH AFRICA	$ 140,621,000
	ISHARES MSCI SOUTH KOREA	$ 237,549,000
	ISHARES MSCI TAIWAN INDEX	$ 39,426,000
	ISHARES MSCI THAILAND FD	$ 307,000
	ISHARES MSCI THAILAND INV	$ 1,950,000

Harvard Investment Assets (Identified)		
	Manager or Holding	**Reported Value**
	ISHARES MSCI TURKEY INDEX	$ 174,000
	ISHARES MSCI TURKEY INVST	$ 5,778,000
	ISHARES S&P LATIN AMERICA	$ 5,188,000
	ITAU UNIBANCO HLDNG-PREF	$ 1,710,000
	KB FINANCIAL GROUP INC-AD	$ 498,000
	KOREA TELECOM CORP ADR	$ 1,682,000
	LEAR CORP-W/I	$ 2,100,000
	LEVEL 3 COMM 2.875% 7/15 - Corporate Bond (Fixed Income)	$ 3,026,000
	LORAL SPACE & COMMUNICATI	$ 1,854,000
	MARKET VECTORS INDONESIA	$ 1,399,000
	MARKET VECTORS RUSSIA ETF	$ 110,835,000
	MARVEL ENTERTAINMENT INC	$ 45,327,000
	MINAS BUENAVENTURA ADR	$ 3,077,000
	MINDRAY MEDICAL INTL LTD	$ 1,321,000
	MOBILE SYSTEMS -SP ADR	$ 171,000
	MOBILE TELESYSTEMS-SP ADR	$ 831,000
	MORGAN STANLEY CHINA A SH	$ 3,443,000
	MPS GROUP INC	$ 13,382,000
	MSCI CHILE INDEX FUND	$ 2,106,000
	NEUBERGER BERMAN DVD ADV	$ 864,000
	NEW ORIENTAL EDUCATION SP	$ 1,359,000
	NEWS CORP INC	$ 9,757,000
	NEWS CORP-CL A	$ 21,996,000
	NEXCEN BRANDS INC	$ 8,000
	NICE SYSTEMS LTD-SPONS AD	$ 1,944,000
	OCEANAUT INC	$ 6,319,000
	PARTNER COMMUNICATIONS AD	$ 611,000
	PDS C7.5 1/16/10 - Call (Option)	$ 2,000
	PDS C7.5 1/16/10 - Call (Option)	$ 5,000
	PEBBLEBROOK HOTEL TRUST	$ 37,747,000
	PETROLEO BRAISLEIRO ADR	$ 1,975,000
	PETROLEO BRASILEIRO S.A.-	$ 1,869,000
	PETROLEO BRASILEIRO-SPON	$ 7,381,000
	PHILIPINE LONG DISTANCE	$ 972,000
	PHILIPINE LONG DISTANCE	$ 3,548,000
	PIMCO NEW YORK MUNI III F	$ 476,000
	PIMCO NEW YORK MUNI INC F	$ 56,000
	POHANG IRON & STEEL CO LT	$ 57,000
	PPC C30 1/16/10 - Call (Option)	$ -
	PREMIER EXHIBITIONS INC	$ 53,000
	PT INDOSAT TBK ADR	$ 512,000
	QUIMICA Y MINERA CHILE AD	$ 29,000
	REPUBLIC SERVICES INC	$ 708,000
	REVLON INC-CLASS A	$ 96,000
	SASOL LTD SPONSORED ADR	$ 2,736,000
	SERVICE CORP INTERNATIONA	$ 614,000
	SILICON GRAPHICS NEW	$ 159,000
	SILICONWARE PRECISION ADR	$ 70,000
	SK TELECOM CO LTD - ADR	$ 2,166,000
	SOUTHERN COPPER CORP	$ 7,115,000
	SPANISH BROADCASTING SYS	$ 600,000
	SPRINT NEXTEL CORP	$ 9,060,000
	STARWOOD PROPERTY TRUST I	$ 13,223,000
	STONELEIGH PARTNERS ACQUI	$ 20,774,000

Harvard Investment Assets (Identified)	Manager or Holding	Reported Value
	SUN MICROSYSTEMS INC	$ 2,811,000
	SUNAMERICA FOCUSED ALPHA	$ 2,524,000
	TAM SA-SPONSORED ADR	$ 44,000
	TATA MOTORS LTD-SPON ADR	$ 843,000
	TECTONA CALL OPTION	$ -
	TELECOM ARGENTINA S.A. AD	$ 165,000
	TELEKOMUNIK INDONESIA-SP	$ 6,545,000
	TERNIUM SA-SPONSORED ADR	$ 266,000
	TERRA INDUSTRIES INC	$ 634,000
	TEVA PHARMACEUTICAL - ADR	$ 41,320,000
	TIME WARNER CABLE-A	$ 17,000
	TRAVELCENTERS OF AMERICA-	$ 197,000
	TURKCELL ILETISIM HIZMET	$ 670,000
	VALE SA-SP PREF ADR	$ 5,686,000
	VANGUARD EMERGING MARKET VIP	$ 71,589,000
	VIMPELCOM-SP ADR	$ 279,000
	VIVO PARTICIPACOES SA-ADR	$ 719,000
	WA-CLAY US INFL-LKD OPP&I	$ 12,051,000
	WASTE SERVICES INC	$ 5,831,000
	WISDOMTREE INDIA EARNINGS	$ 4,384,000
	WUXI PHAMATECH INC - ADR	$ 677,000
	XTO ENERGY INC	$ 13,726,000
	YOUBET.COM INC	$ 4,185,000
	ZILOG INC	$ 1,149,000
Phemus Corporation		***$ 3,097,811,409***
	Abacoa Cypress LP	$ 510,393
	Agricola Brinzal LTDA	$ 6,239,827
	Agricola Crecer LTDA	$ 6,239,827
	Agricola Duramen LTDA	$ 6,239,827
	Agricola e Inversiones Pampa Alegre S.A.	$ 6,239,827
	Agroflorestal Verde Sul LTDA	$ 92,928,598
	Brazil Teak LLC	$ 54,478,484
	Brazil Timber LTDA	$ 42,021,389
	BT1 Co. LLC	$ 6,879,507
	BT2 Co. LLC	$ 3,007,354
	Campo Grande S.A.	$ 22,076,230
	Charlesbank Equity Fund II	$ 560,173
	Clag LLC	$ 7,625,062
	Cypress Industrial Co-Investment	$ 510,393
	Cypress Realty LP	$ 510,393
	Dairy Farm Partnership	$ 515,797
	DF1 Ltd.	$ -
	DF3 Ltd	$ -
	Diversified International Timber Holdings LLC	$ 3,007,354
	Ecuador Timber GP LLC	$ -
	Ecuador Timber LP	$ 6,420,769
	Florestas do Sul Agroflorestial LTDA	$ 92,928,598
	Global Emerging Markets Forestry Fund LP	$ 66,669,074
	Guanare AARL	$ -
	Guanare S.A.	$ 46,839,207
	Harvard Private Capital Properties III	$ 39,785,295
	HMC Adage Manager LLC	$ 200
	Inversiones Tres Cumbres LTDA	$ 6,239,827
	Investimentos y Participadoes Agricolas Ltda.	$ -

Harvard Investment Assets (Identified)		
	Manager or Holding	**Reported Value**
	Invexco Tax Partnership	$ -
	JJ Forestry AB	$ -
	Joshua Timberlands LLC	$ 220,278,391
	Julington Cypress LP	$ 510,393
	KT Partnership	$ 1,375,976,000
	KT1 Co.	$ 375,888,000
	KT2 Co.	$ 3,797,000
	Las Misiones S.A.	$ 22,076,230
	Lathi LLC	$ -
	Long Term Forest Partners Cia. LTDA	$ 7,013,321
	Los Laureles S.A.	$ 2,141,392
	Monte Verde	$ 7,665,839
	Nicateca, Inc	$ 23,813,201
	Northeast Hardwoods LLC	$ 94,931,980
	Okitu Ltd	$ -
	Oklahoma Timber LLC	$ 58,163,922
	Pennsylvania Timber LP	$ 94,931,980
	Pinares AARL	$ -
	Preston Cypress Co-Invest LP	$ 510,393
	Quebrada Relojera S.A.	$ -
	Quebrada Tanque S.A.	$ -
	Romply Merops LLC	$ -
	S.C. Romply Merops SRL	$ -
	S.C. Scolopax S.R.L.	$ 80,680,271
	Santa Fe Reforestation S.A.	$ -
	Santa Lucia	$ 2,041,225
	Santa Marta	$ 10,965,653
	Sia Fragaria	$ 8,455,298
	Sia Fraxinus	$ 11,362,926
	Sia Kupica	$ -
	Sia Myrtillus	$ 8,036,342
	Sia Rudas Mezi	$ -
	Sputnik IV LP	$ -
	Sustainable Teak Participacoes LTDA	$ 54,478,484
	Sustainable Timber S.A.	$ 23,233,171
	Terena S.A.	$ 37,908,108
	TPT LTD	$ -
	Uniteca Agroforestal S.A.	$ 54,478,484
	Vine 1 Ltd.	$ -
	Vine 2 Ltd.	$ -
Harvard Management Private Equity Corporation		***$ 2,036,167,222***
	Aquila Inc.	$ 198,560,000
	ARA Inc	$ 250,000,000
	Cypress Realty IV LP	$ 33,197,112
	ENKI Holdings	$ 250,000,000
	Greenfield BLR Partners	$ 85,831,539
	Greysanat LLC	$ -
	Harvard Private Capital Properties II Inc	$ 15,982,545
	New Vernon India (Cayman) Fund LP	$ 423,718,023
	Old Lane HMAFF LP	$ 637,764,194
	SMS-IIA LP	$ 9,670,490
	TDR Scotland LP	$ 43,532,751
	The Breithorn Fund LP	$ 54,961,471
	The Wildhorn Fund LP	$ 32,949,097

Harvard Investment Assets (Identified)	Manager or Holding	Reported Value
Harvard Private Capital Holdings		***$ 3,952,828,086***
	Asphalt Holdings Inc	$ 28,225,778
	Baynorth HPCH LLC	$ 10,431,848
	Comtel Assets Corp	$ 20,704,878
	Comtel Assets Inc	$ 482,518
	CTL Holdings	$ 52,254
	Denham Commodity Partners Fund II, LP	$ 537,393,230
	Denham Commodity Partners Fund III, LP	$ 490,543,576
	Denham Commodity Partners Fund, LP	$ 99,379,172
	El Cap I LLC	$ -
	Harvard Investment Associates LP	$ 111,863,466
	HB Institutional LP	$ 2,168,420,668
	Helios Royalty Partners I, LP	$ 5,128,283
	Medipac Resources I (BVI) LTD	$ 15,915,069
	NGL Holdings Inc.	$ 152,065,663
	NGL Supply Inc.	$ 152,065,663
	Thermal North America Holdings LLC	$ 10,517,732
	Travis Coal Holdings LLC	$ 149,292,119
	Wharton County Power GP, Inc	$ 28,729
	Wharton County Power Partners LP	$ 317,440
Harvard Private Capital Realty		***$ 2,304,145,938***
	10950 Studios LLC	$ -
	Alcion Real Estate Partners LP FKA Halcyon Real Estate Partners LP	$ 124,192,998
	Atlantic Avenue Realty II GP LLC	$ -
	Atlantic Avenue Realty II LP	$ 19,809,974
	Atlantic Avenue Realty Ltd	$ 93,425,352
	Atlantic Pacific Realty Inc	$ 29,356,774
	BPR Co-Investor (Westbrook)	$ 25,083,000
	Business Development Properties, LLC	$ 70,100
	Business Properties LLC	$ 80,300
	Capital Partners (2) US Tax Exempt Investors Fund LP	$ 211,152,288
	CH/Star Holdings LLC	$ -
	Charlesbank Capital Partners	$ -
	Charlesbank Realty Fund IV, LP	$ 13,663,000
	Charlesbank Realty Fund V, LP	$ 164,307,000
	Cherokee Investment Partners III Parallel Fund LP	$ 75,036,000
	Composition Capital Asia	$ 52,572,250
	Composition Capital Europe	$ 186,464,635
	Denham Capital Management	$ -
	DS Co-Investor LLC	$ 17,979,000
	Embarcadero Capital Investors 2 REIT	$ 469,439,136
	FQ Jamaica LLC	$ -
	Gateway Capital Real Estate Fund II-TE LP	$ 44,262,692
	Gateway II GP Limited	$ -
	Gateway Real Estate Fund III - TE, LP	$ -
	HPC Cherokee Ventures LLC	$ 55,114,091
	HPC Patron Scotland	$ 87,368,963
	Lasalle Asia Opportunity Cayman I Ltd	$ 235,949,753
	Liquid Realty Partners IV (PF1) LP	$ 15,126,329
	Liquid Realty Partners IV Tax Exempt (PF1) LP	$ 2,967,238
	Lubert Adler Capital Real Estate Fund II LP	$ 9,153,137
	Lubert Adler Capital Real Estate Fund III LP	$ 60,408,172
	Lubert Adler Capital Real Estate Opportunity Fund LP	$ 145,443
	NYC Holdings LLC	$ -

Harvard Investment Assets (Identified)	Manager or Holding	Reported Value
	Oxford HPC Investment Co. LLC	$ 2,794,666
	PM Co-Investors LLC	$ 395,000
	Prosperitas Real Estate Partners I(A)	$ 223,088,957
	Taku LLC	$ 70,612,825
	TFO Co-Investor LLC	$ 13,695,000
	WBSL Co-Investor LLC	$ 34,000
	WHB Kirby Hill Co-Investment LLC	$ 2,679,000
	WP Retail LLC	$ (2,281,135)
Blue Marble Holdings Corporation		***$ 165,882,041***
	Emerald Catastrophe Fund Ltd	$ 128,786,342
	Global Forest Investments	$ 15,118,551
	Gordian BioEnergy, LP	$ -
	Haco Corporation	$ 354,120
	Performance Forests LLC	$ 21,623,028
Harvard Master Trust (Real Estate Investment)		
Harvard Commingled Account		
Demeter Holdings Corporation		
	ITAY, LLC	$ -
Fletcher Capital Markets, Inc		
	Fletcher Energy Development Corporation	$ -
Other/Unattributed		***$ 1,725,400,000***
	Apollo Investment Fund IV	$ -
	Avalon Ventures VII, L.P.	$ -
	Avalon Ventures VIII, L.P.	$ -
	AXA Rosenberg Investement Management Ltd Equities-International	$ 173,000,000
	AXA Rosenberg Investement Management Ltd Equities-World ex-US/EAFE	$ -
	Bain Capital Fund IX	$ -
	Beau Geste XXV, LLC (Real Estate)	$ -
	Chennai 2007	$ -
	Convexity Capital	$ 500,000,000
	Formative Ventures Emerging Technology Fund	$ -
	Garnett & Helfrich Capital	$ -
	Grantham, Mayo, Van Otterloo & Co., L.L.C Equities – World ex-US/EAFE	$ 310,000,000
	Harvard University Beacon Yards, LLC	$ -
	Ixion Investment Company	$ -
	J.P. Morgan Investment Management Inc. (New York) Equities - Growth	$ -
	JP Morgan - Global Emerging Markets - Core	$ -
	Old Lane Partners	$ -
	Sowood Capital	$ -
	SSgA - S&P 500 Index Strategy	$ 109,500,000
	State Street Global Advisors (US) Equities - World ex-US/EAFE	$ 219,000,000
	TWC Asset Management Company Equities - Large-cap Growth	$ 96,000,000
	Vanguard Group, Inc - Various Funds	$ 168,000,000
	Wellspring Capital Partners Fund III	$ -
	Whippoorwill Associates, Inc. - Distressed Securities	$ 149,900,000

Source: Tellus Institute; Thomson Reuters Nelson; US SEC; IRS 990; Massachusetts Filings; New York Times, Press Releases.

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