

THE PROVOST

December 10, 1991

A Letter to the Faculty of Arts and Sciences

During the past two years President Schmidt and I have sent several letters to the Faculty of Arts and Sciences, made other public statements, and have met with the faculty on several occasions to discuss the financial situation confronting the University. Both this letter and the accompanying longer discussion of the budget are part of that ongoing process of communicating with the faculty in regard to financial matters.

Today Yale University confronts a structural deficit in its operating budget--a deficit which, if left unaddressed, will grow over time. This deficit must be eliminated to preserve the long-term academic vitality of the University and to maintain the confidence of the wider Yale community in the capacity of the University to guide itself into its fourth century. Bringing the operating budget into balance will require the University to make significant reductions throughout all areas of its operation. Because this deficit is caused primarily by annual expenditures growing faster than annual revenues, Yale would need to reduce operating expenses significantly to eliminate the deficit even if it could decide to put no money into maintaining and restoring its buildings. The shortfall in revenues, however, places additional pressure on the facilities problem and will further delay addressing it. There may be debate over both the timing and the strategy for addressing both the deficit and the facilities problems, but there can be no doubt that over the next decade each must be dealt with responsibly to meet the academic goals of the University.

Major Institutional Goals

In the face of these budgetary pressures, the University, through faculty committees and its administrative officers, is developing a financial plan that seeks to protect Yale's educational mission while bringing the operating budget back into sustainable balance, including a modest level of capital maintenance. That plan must recognize clear guidelines that foster the academic mission and protect the quality of the institution. The following principles, many of which have been outlined in previous documents circulated and discussed within the community, are intended to guide Yale as it undertakes the task of academic and financial restructuring. Each principle represents in itself an implicit financial decision; each also seems a necessary priority for the institution if Yale is to remain a leading university and to retain its present character.

- The long-term financial plan of the University should above all sustain the traditional mission of Yale, which is the advancement of knowledge and the highest quality education of undergraduate, graduate, and professional students. As the University is reduced in size, it must emerge at the end of the 1990s in a strong and competitive position with respect to the quality of its students, faculty, and programs.

- Yale College should maintain a financial aid policy that enables Yale to admit the most highly qualified and diverse body of students possible and to meet their demonstrated financial need.
- The Graduate School should remain able to attract and train those students who will become the academic leaders of the future.
- Yale should continue to surround the core undergraduate and graduate programs in the arts and sciences with a constellation of outstanding professional schools and collections.
- Faculty and staff salaries should remain competitive.
- The richness of the collections of the University Library should be preserved and remain available to the students and faculty. The primary role of the other collections in the museums and galleries must be to serve the larger academic and educational goals of the University.
- The residential college system should be preserved, and the quality of student life in every school of the University should be sustained.
- Reasonable measures must continue to be taken to ensure the safety and physical security of the University's students, faculty, and staff.
- Yale should make steady progress toward ensuring that its physical plant is functional and safe.
- The endowment should be invested and managed in a way that protects into the indefinite future the purchasing power of its contribution to the programs it supports.
- Yale must return to balanced operating budgets as quickly as possible and in a manner that allows the institution to remain in financial balance thereafter. Its reserves should be replenished to levels that will provide institutional flexibility.

Through the pursuit of these principles the University will seek to reshape itself into a somewhat leaner institution that sustains the highest excellence in liberal learning, teaching, and research throughout its schools.

The Operating Deficit

After many years of program expansion funded by a variety of rapidly increasing revenue sources, Yale has entered a period when revenue growth has slowed substantially, while expense growth has not slowed in a similar way. The University now faces a deficit in its current operating budget of \$8.8 million. This deficit will grow to at least \$50 million in the next few years unless further measures are taken to reverse that trend. There is no easy solution to this predicament. The University's central reserves have been depleted. It is unlikely that the growth rate of revenue streams will increase soon. Consequently, Yale must undertake the difficult process of reducing its expense base to fit those revenues; that is, spending must be brought into line with income. This expense reduction must take place not over the entire \$799 million University budget, but rather where the deficit occurs, which is within the roughly \$265 million of general appropriations and unrestricted endowment expenses subject to the direct control of the central administration under current financial and governance understandings.

During the 1980s, the University's major sources of income -- tuition, grants and contracts, spending from the endowment, medical services income, and gifts -- grew at exceptionally high rates -- i.e., more than 10% annually, over two times the rate of inflation. Toward the end of the 1980s, the annual growth rate of the University's revenues (excluding the School of Medicine) had slowed to 6.9%; however, the operating expenses continued to grow at 8.4%. Most of Yale's income streams have continued to dip toward rates closer to general inflation, and some face pressures that are likely to retard their growth still further. In the current economic climate, it is unlikely that Yale or similar private institutions will be able to return to the very large tuition increases that characterized the decade of the seventies and the first half of the eighties if they still wish to attract a broad range of the most capable students. In the 1990s the equity markets and therefore the endowment income will almost certainly not grow at the extraordinarily high rates they did in the 1980s. Annual unrestricted expenditure fund-raising at Yale continues to produce gratifying results, but changes in the tax laws and the deteriorating state of the national and regional economy make increases from that source more difficult to achieve. Moreover, it seems urgently required that Yale seek to direct the bulk of its major giving into facilities investment. Finally, the federal government is reducing the growth of federally sponsored research support and threatening to lower dramatically the allowable recovery of overhead expenses, both of which have a significant negative impact on the University's annual income. When Yale's current negotiations with the U.S. Department of Health and Human Services are completed, if the overhead recovery rate is set below the previous rate of 68%, the immediate effect will be to increase the projected \$8.8 million deficit in the 1991-92 operating budget possibly by as much as several millions of dollars.

On the other side of the ledger, expense pressures continue to grow despite the difficulties confronting income sources. External forces such as the escalation of costs for student and employee health care, for books and journals, for occupational safety, and for waste disposal account for much of the expense growth. Other increased costs have arisen from Yale's choices over the past decade to make significant gains in faculty and staff salaries, to improve academic programs and support services, to sustain a commitment to need-based student aid, to increase spending on security, and to increase the investment in facilities. During the past two years the University has tried to counteract these expense increases by reducing support and administrative services by \$8 million. These reductions felt throughout the University have not been nearly enough to achieve financial balance. In fact, the gap between expenses and revenues has grown. For the past three years -- as was the case earlier in the 1980s -- Yale has needed to use its limited unrestricted reserve funds to bring the operating budget into balance.

The Facilities Problem

Several decades of underinvestment in the maintenance of Yale's physical facilities compounds the primary financial problem of the deficit. Financial constraints and the University's other priorities will affect the level and timing of the capital maintenance program, but it would be imprudent to delay further undertaking the rebuilding effort. Major postponement will make restoration more expensive in the long run and will force the University to adopt increasingly disruptive and costly stopgap measures as major facility systems will eventually collapse. Moreover, much of the work is required by federal and state regulation (e.g., handicapped access) and legal requirements (e.g., fire-code work). Other projects (e.g., sealing roofs and renovating the power plant) are so fundamental to the infrastructure of the University that no further delay is possible.

Spending on capital maintenance has recently been increased, but it still falls short of what is required to prevent the situation from becoming worse. Studies undertaken over

the past few years indicate that the capital expenditure needed to bring Yale's existing physical plant up to acceptable -- not elaborate -- standards will be enormous. At a much lower horizon of ambition about the facilities, widely used standards indicate that the capital investment required to prevent deterioration of buildings such as Yale's would amount to about \$40 million each year over the next decade for capital maintenance on the central campus. Such spending would halt deterioration and repair major systems, but it would not permit complete restorations. Of course, both these estimates are orders of magnitude only and not precise; but the fact that Yale's historical levels of annual renovation investment have been so far short of the recommended level is the reason the total backlog is so large.

The Financial Problem over the Decade

If one projects revenues and expenses, the operating deficit would reach more than \$50 million annually by the end of the decade. An annual capital maintenance budget for the central and science campuses of \$40 million, financed primarily through external borrowing, would increase that projected gap to over \$100 million. Although any such projections involve considerable uncertainty, the current forecasts make clear that Yale must reduce both its ongoing expenses and its capital maintenance hopes and ambitions. To achieve financial equilibrium will require, first, undertaking major reductions in the operating budget to address the structural deficit and second, scaling back the level of capital maintenance investment to the absolute minimum responsible level. Furthermore, the process will also require the University to embark on a major capital campaign the success of which will determine whether even a modest level of capital maintenance investment may be achieved.

To avoid the wrenching changes that precipitous reductions in the operating budget would cause, and to allow for a thoughtful restructuring of existing programs, the University will have to plan deficits for several years while implementing changes in programs. Those years will then have to be followed by a number of years of financial surpluses to repay the accumulated deficits. This financial and academic restructuring process will require the Yale community to make some of the most difficult and painful choices in its modern history.

At present, put quite simply, Yale is attempting to carry out an academic program beyond its capacity to sustain. The difficult choices that confront Yale and all American higher education lie not between good and bad programs but rather among programs each of which possesses intellectual virtues and values. Yale can no longer afford to support all of those good and worthy activities. This is the fundamental intellectual and institutional dilemma that the University must seek to solve. The process of making choices has begun, and during the rest of this academic year and beyond, the entire Yale community will be engaged in discussion and consultation to ensure that Yale will emerge from this process in the forefront of higher education. If the choices are not made, that position of leadership cannot be sustained.

Planning for Budgetary Balance and Adequate Capital Maintenance

The process of formulating a long-term integrated financial plan to bring the University operating budget into balance and to address the physical facilities problem is now underway. It involves a number of separate but closely related efforts.

Income

The first step is to maximize wherever possible the resources available to the University for its operating and capital budgets. These steps will include increasing tuition income, securing the best possible management of Yale's endowment, seeking a successful outcome in negotiations with the federal government over indirect overhead recovery, and launching a major capital campaign with the goal of raising \$1.5 billion. It is intended that as much as \$500 million in new gifts will be devoted to facilities renovation to relieve the operating budget of a considerable portion of the capital maintenance burden. Some combination of these increases in revenues over the current base projections could by the end of the decade close as much as a third of the budget gap reflected in current projections. The rest of the gap must be closed by expense reductions.

It is important to note that these are aggressive and optimistic income strategies. To the extent that they are not achieved, further reductions will be required in the expense base and in the scope of capital maintenance.

Expense Reductions

Complementing the attempt to increase sources of revenues, the University will also need to reduce many of the expenditures at present included in the budget projection for the next decade.

The major reduction in projected expenses can and will be achieved by reducing the scope and ambition of the capital program. Although the facilities problems cannot be ignored, the pace at which they are addressed can be slowed, provided that projects can be chosen carefully and carried out efficiently. As already noted, Yale should be spending approximately \$40 million annually on capital maintenance of the central and science campuses. That level of spending is reflected in the expense projections that forecast a growing deficit. The level of such expenditures over the past four years has been approximately \$20 million annually, an amount that is clearly insufficient in light of essential renovations to inadequate utilities systems and the legal obligation to bring its buildings up to code requirement. With the most efficient and cost-effective procedures, an expenditure of \$30 million annually should be sufficient to address the most pressing problems and make at least some progress toward the rebuilding that must finally take place. This figure of \$30 million represents a 25% reduction in the projected level of capital maintenance.

The impact on the operating budget of projected capital expenditures will also be reduced in a second way. Although the University must continue to borrow from external sources to finance some capital expenditures, it will do so at a significantly lower level than previously considered. The debt service that will not be assumed will thus lower the cost of capital maintenance to the operating budget still further. The remaining burden of the reduced level of capital renovations expenses will be shifted to the less certain source of outside gifts. Thus, to accomplish even the lower capital expenditure level will require that Yale successfully raise four times the amount of facilities gifts in the 1990s that it raised in the 1980s. Together, the reduction in the scope of the capital expenditures and the larger use of gifts should close another 25% of the projected deficit in the operating budget. But to the extent that gifts should not be forthcoming, the facilities problem will take even longer to solve.

The remaining 40% of the projected deficit must finally be eliminated by a reduction in the academic programs and administrative services of the University. That amount, projected as approximately \$45 million in annual expenses for the year 2002,

cannot be achieved simply by trimming the support and administrative services. The academic as well as the administrative scale of the University will need to be reduced to a level that can be sustained by the institution's resources. These reductions will not be easy, particularly since they must be made from within the \$265 million in income flowing from tuition, expendable gifts, and unrestricted endowment which is available for reallocation. Furthermore, many parts of that \$265 million must be protected to meet the institutional goals or pressing requirements described above.

The largest and most complex academic program and expense base of the University (excluding the School of Medicine which is self-supporting) is the Faculty of Arts and Sciences. The expenses arising from salaries and fringe benefits, support staff, academic and research funding, library acquisitions, athletics, and academic space are all related to the number of these faculty members and their students. Reductions in those support areas without reduction in the faculty eventually would undercut the productivity of the faculty and the attractiveness of Yale. Furthermore, it is academic programs that inhabit buildings that require capital maintenance. The size of the faculty also in no small measure generates the number of students in the Graduate School and the accompanying financial aid costs.

Having along with the other Officers and the University Budget Committee reviewed the general financial problem and the key expenses relating to the size of the faculty, I appointed a Restructuring Committee for the Faculty of Arts and Sciences. This group has been looking since last spring at issues of quality, size, and composition of the faculty, the size of the Graduate School, the use of teaching fellows, and the relation among academic departments, in order to determine how best to reduce and restructure that faculty.

Later in this academic year, the Restructuring Committee will make its report to the Executive Committee of the Faculty of Arts and Sciences: the President, the Provost, and the Deans of Yale College and the Graduate School. The Committee's report will also be circulated to the faculty for discussion and comment before the Executive Committee makes recommendations later in the winter or spring to the Corporation about the size and distribution of reductions. The implementation of the Restructuring Committee's recommendations will be carried out over time by the Divisional Committees and the departments themselves.

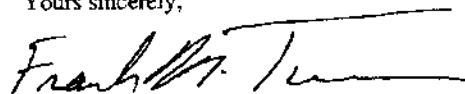
While the Restructuring Committee is looking for appropriate reductions in the Faculty of Arts and Sciences, the University is examining every other component of the expense base to see where reductions can best be made. These will include efforts to reduce administrative staff by a further 15%, in addition to the \$8 million in budgeted reductions made during the past two years, and efforts to contain rising costs of health care. Significant cuts (on average 22%) have been proposed in the central support of those professional schools that depend upon it. These reductions will require those schools either to increase other sources of income or to reduce their programs further over the next several years. The self-supporting professional schools (Law, Medicine, Forestry and Environmental Studies, Nursing, and Organization and Management) will be expected to maintain their programs within their own anticipated resources. They will also need to address their own capital facilities problems. The University Art Gallery and the Peabody Museum have been asked to plan around much lower levels of central support.

The Academic and Financial Challenge

To balance the University's budget all of these increases in income and reductions in expenses must be made. That is, the scope of the projected facilities renewal must be scaled back, the size of the academic programs made smaller, the extent of the administrative costs reduced, health care costs contained, where possible income increased and the campaign made a success. The failure to achieve any of these reductions or to secure increases in income will make it necessary to find other areas for reductions of similar magnitude. Furthermore, any unanticipated decreases in income or unavoidable increases in expenses will require further reductions in the expense base.

The primary question facing Yale is how large an academic program the institution can sustain if it is to meet its highest priorities over the next decade. It is clear that for some time Yale has effectively been living beyond its means, even without fully addressing its capital needs. The financial plan finally adopted must bring the major components of the University budget into a lasting balance. To accomplish this, the University will need all of the reductions it is currently investigating, or failing those, others equally large. The most important goal must be to ensure that Yale will emerge from the decade competitive and strong, both academically and financially. That goal is realistic, but reaching it will require the effort, determination, and cooperation of the entire Yale community.

Yours sincerely,



Frank M. Turner
Provost

The Financial Situation of the University:

A Statement to the Yale Community

December 10, 1991

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THE NATURE AND SCOPE OF YALE'S FINANCIAL PROBLEM

Background

Yale last experienced serious economic stress in the mid-1970s. From 1970 to 1976 the University struggled with annual operating budget deficits ranging from \$100,000 to \$2.6 million. By 1976-77, the situation was extremely serious. The University had a \$6.6 million operating deficit and essentially no central reserves. Faculty and staff salaries stood at 10% to 20% below those at comparable institutions, the endowment had lost a significant fraction of its value and was being spent at an unsustainable rate, and facilities were being maintained at a seriously inadequate level. In 1976-77, the administration and Corporation recognized that the University's budget could not be balanced with annual adjustments and initiated a major planning effort that resulted in major reductions in University expenses and increases in income. The deficit in that year was followed by three years of planned deficits: \$2 million, \$2.5 million, and \$1.9 million.

As a part of the planning process in 1976-77, the Corporation froze the level of spending from the endowment (which significantly exceeded the real rate of return) until that amount represented no more than 4.5% of the endowment's market value. With the attainment of that goal in 1982-83, the University adopted the "spending rule" now in force, to balance current and future spending. That rule determines the amount that can prudently be spent from the endowment in any given year while ensuring that the purchasing power of the endowment will keep up with inflation over the long term.

In the four years following 1976-77, the University's operating expenses grew about 1% faster than the general inflation rate, while capital maintenance expenditures, already small in absolute terms, were essentially deferred, lagging almost 4% below the rate of inflation. During the late 1970s and early 1980s, the endowment spending rate was

gradually reduced to a sustainable level, salaries for faculty and staff were raised toward competitive levels, and the number of faculty and the scope of several programs were reduced. Not until the very end of the period were significant amounts spent on renovation of existing facilities.

Beginning in 1980-81, Yale achieved a balanced budget for eleven consecutive years. In all but four of those years, however, it did so only by drawing upon unrestricted reserves -- reserves that should be maintained at a prudent level until devoted to one-time capital or program improvements. Over the past three years, as a result of the growing imbalance between revenue and expenses -- especially sharp increases in health and other employee benefit costs -- and despite significant reductions in portions of the administrative expense base, this use of reserves accelerated, requiring the use of \$2 million in 1989, \$1 million in 1990, and \$9 million in 1991. On June 30, 1991, the University was left with just \$264,000 in completely unrestricted current fund reserves. The depletion of these unrestricted fund balances now as in the mid-1970s is a matter of serious institutional concern. It is the result of the University's spending exceeding its income.

Table 1 shows the year-end balances of expendable funds at five-year intervals over the past fifteen years for the whole University. Although the aggregate total continues to represent approximately the same fraction of the operating and capital expense base of the University, that total is misleading because of the nature of the fund balances. The unrestricted current and unrestricted building fund balances (lines 1 and 5) are the only ones fully available to cover deficits in the operating budget or to augment capital expenditures. Those balances have not grown over this period, except as the result of a single large bequest in the mid-1980s. All of the recent growth in fund balances is in areas that carry restrictions as to how and when the funds can be spent. For example, the current restricted fund balances of \$78.9 million on June 30, 1991, included \$8.7 million of

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TABLE 1

YALE UNIVERSITY

EXPENDABLE FUND BALANCES

(\$ in millions)

	1975-76	1980-81	1985-86	1990-91
Total University				
Current - unrestricted	(\$1.7)	\$0.2	\$9.0	\$0.3
- designated		28.5	61.6	107.3
- restricted	51.2	44.8	63.4	78.9
	49.5	73.5	134.0	186.5
Building - unrestricted	0.0	2.3	8.0	8.4
- restricted	2.6	5.7	11.9	34.3
	2.6	8.0	19.9	42.7
TOTAL	\$52.1	\$81.5	\$153.9	\$229.2
% of Expense Base	25.6%	25.5%	30.2%	27.8%

research gifts that will fund specific projects in the future and \$11.3 million of endowment income already distributed to certain funds but not spent because donor restrictions have not been met. Current designated fund balances are reserved for specific programs by internal understandings. For example, \$67.4 million, or two-thirds of the \$107.3 million in those fund balances, belongs to specific departments within the School of Medicine. The balance in unrestricted current funds -- as of June 30, 1991, just \$264,000 -- is unacceptably low. Only unrestricted fund balances can aid the financial problems of the central university. Virtually no unrestricted reserves are available to meet unanticipated shortfalls in the 1991-92 operating budget. This situation means that no unrestricted reserves are available to meet any other needs of the University as well.

The Present Imbalance of Revenues and Expenses

The growing disparity between expendable revenues and expenses is the major problem facing Yale in 1991 and the cause of the depletion of unrestricted central fund balances. The growth rates of the major revenue sources and the operating and capital expenses of the non-School of Medicine portion of the University are shown in Table 2, which points to the disparity that has emerged in those growth rates over the past fifteen years. Table 3 presents similar information, but includes the School of Medicine, where sources of income and rates of growth differ significantly from those of the rest of the institution.

Table 2 shows that in the late 1970s, the University's annual 8.5% revenue growth exceeded the general inflation rate by about 1% and nearly matched the growth rate of expenses (8.7%). In this period the growth rate of gifts was extremely high (12.3%), while that of income from the endowment was low (3.4%). In the early 1980s revenue grew even faster (9.7%), largely because of increases in tuition and investment income.

TABLE 2

YALE UNIVERSITY

Expendable Revenues and Their Uses

(Excluding School of Medicine)

	Actual \$	-----Compound Annual Growth Rate-----				Actual \$
	(in Millions) 1975-76	1976-81	1981-86	1986-91	1976-91	(in Millions) 1990-91
Expendable Revenues						
Tuition, Room, and Board	43.7	9.5%	11.5%	7.3%	9.4%	168.3
Grants and Contracts	23.9	9.9%	9.6%	3.4%	7.6%	71.9
Gift	17.6	12.3%	6.6%	1.7%	6.8%	46.7
Investment - Endowment	26.6	3.4%	6.9%	13.9%	8.0%	84.2
- Other	6.7	3.7%	14.4%	-2.2%	5.0%	15.9
Medical Services	1.6	6.6%	-22.9%	52.8%	7.9%	5.0
Other	18.4	9.5%	11.0%	8.4%	9.6%	77.5
TOTAL REVENUE	138.5	8.5%	9.7%	6.9%	8.4%	469.5
Expenses						
Operating Expenses	130.6	8.3%	8.9%	8.4%	8.5%	447.0
Capital Expenditures	9.6	12.8%	7.4%	13.4%	11.2%	47.4
TOTAL EXPENSES	140.2	8.7%	8.8%	8.8%	8.8%	494.4
EXPENDABLE REVENUES						
LESS EXPENSES	(1.7)					(24.9)
GNP Deflator		7.8%	4.7%	3.6%	5.4%	

TABLE 3

YALE UNIVERSITY

Expendable Revenues and Their Uses

	Actual \$ (in millions) 1975-76	-----Compound Annual Growth Rate %-----				Actual \$ (in millions) 1990-91
		1976-81	1981-86	1986-91	1975-91	
----- Entire University -----						
Expendable Revenues						
Tuition, Room, and Board	\$46.1	9.7%	11.5%	7.3%	9.5%	\$179.1
Grants and Contracts	64.8	10.3%	8.4%	6.8%	8.5%	219.9
Gift	18.8	13.7%	7.3%	2.5%	7.7%	57.3
Investment - Endowment	28.7	3.4%	7.0%	14.0%	8.1%	91.8
- Other	7.4	7.5%	13.8%	-3.2%	5.8%	17.2
Medical Services	15.2	16.1%	14.8%	15.5%	15.5%	131.6
Other	18.7	10.4%	11.6%	10.9%	10.9%	88.8
TOTAL REVENUE	199.7	10.0%	10.1%	8.6%	9.6%	785.7
Expenses						
Operating Expenses	190.0	9.6%	9.6%	9.4%	9.5%	745.9
Capital Expenditures	13.5	7.4%	12.0%	17.9%	12.3%	77.4
TOTAL EXPENSES	203.5	9.4%	9.8%	10.1%	9.8%	823.3
EXPENDABLE REVENUES LESS EXPENSES	(3.8)					(37.6)
GDP Deflator		7.8%	4.7%	3.6%	5.4%	

During this time, tuition income, the largest unrestricted revenue source, grew at 11.5% annually, more than twice the rate of inflation. This increase was partly the result of expanding enrollment in the graduate and professional schools, but it also reflected large annual tuition rate increases. Although the expenses of the University grew (8.8%) more slowly than revenues -- the only time this has occurred in the past fifteen years -- that rate was still almost twice the rate of inflation (4.7%). Inflation declined to 3.6% in the late 1980s, and Yale's revenue growth also began to slow, as a result of both policy decisions (e.g., lower Yale College term bill increases) and external factors (e.g., declines in the growth of federal research funding and interest rates). Increased spending from endowment offset some of these reductions. But significantly, and in part because of the decision to increase capital spending, Yale's expenses did not decline in the late 1980s. They continued to grow by 8.8% a year, nearly two-and-a-half times the rate of inflation. During this five-year period, a 2% gap developed between expendable revenues and expenses. In spite of recent efforts to reduce the growth of expenses, the gap between income and expense that appeared toward the end of the 1980s has widened.

Areas of Expense Growth

It is useful to examine the chief areas in which expenses have grown over the past decade because these are the areas in which significant reductions will need to be made in order to bring the budget into balance.

The growth in expenses over the past 15 years has been caused largely by improvement and expansion in the University's academic programs, commitments to competitive salary levels and Yale College financial aid, and escalating employee benefit costs. Since 1979-80 the number of budgeted teaching faculty in the Faculty of Arts and Sciences has increased by 3%, even though the Academic Plan adopted at the beginning of that period called for a decrease of 7.5%. Since 1975-76, faculty in the professional

schools (other than Medicine) have increased by 10.9%. In spite of efficiencies made possible by computerization, the number of staff supporting those academic programs has increased (again outside of Medicine) by 1.8%. Because nearly 60% of the University's expense base supports salaries and employee benefits, this growth has dramatically affected the budget. Furthermore, costs for the market basket of goods and services that support a major research university -- from scholarly journals to laboratory equipment -- have grown much faster than general inflation.

Because the School of Medicine funds its own programs, its expansion has not occurred at the expense of any other part of the University. It has grown at a much faster rate than the rest of Yale, by 66% in faculty positions and 59% in staff positions since 1975-76. This reflects the school's very different programs, particularly in the areas of research and clinical practice, where growth is supported by federal grants and contracts and by medical services income from the clinical departments.

For undergraduates, Yale has maintained a need-blind admission policy and continued to meet the full assessed financial need of all students, despite significant reductions in federal support. The University has also maintained its support of the expensive residential college system.

Since the mid-1970s Yale has significantly enlarged and strengthened the Graduate School, with the number of graduate students increasing considerably. Moreover, whereas in the 1970s Yale's graduate stipend levels lagged behind those at comparable institutions, they are now competitive. In addition, all humanities and social science students have become eligible for year-long dissertation fellowships.

In recent years the University has funded significant increases in the library system and in academic computing. Foreign language teaching and courses in expository writing expanded dramatically, and several new majors were approved. Many new

activities – even a new professional school -- were added since 1975, and several Faculty of Arts and Sciences departments and programs (such as the literature major, Judaic studies, and computer science) were added or grew significantly.

As a result of pressures from outside the University, several activities that support basic academic and research programs were also improved in ways that added significant costs. For example, federally mandated environmental and occupational standards for biological, chemical, and radiation safety have become much more demanding. Campus security also has been expanded significantly, through increases in the police force and transportation services and through capital expenditures for protective gates and screens, lighting and communication, and card-key systems. Health care benefits have been expanded for all of Yale's employees, and the costs for this important benefit have reached double-digit growth rates for several years. Costs for worker's compensation benefits, insurance and related costs, accessibility for the disabled, and enhanced staffing for affirmative action programs have all grown significantly above inflation in recent years. And Yale has increased its contribution to the City of New Haven.

Finally, during the 1980s, the University began to increase capital expenditures. From 1981-82 through 1985-86, the University spent \$45 million on the renovation of facilities, nearly double what it had spent in the previous five years. In the past five years, Yale has devoted \$126 million to capital maintenance and infrastructure expenditures -- a healthier level than before but still not enough to stay ahead of the inevitable deterioration of buildings. The total capital spending of the past five years (including new buildings and improvements to programs) has been \$301 million, \$123 million of which was spent and paid for by the School of Medicine.

Projection of the Current Situation into the Future

The 1991-92 operating budget of \$799 million, which includes an operating deficit of \$8.8 million, contains a number of risks, the largest being the threatened reduction in the University's indirect cost recoveries, further escalation in health benefit costs, and expenditures in excess of budget in Yale College and Graduate School financial aid. Any additional shortfall that occurs will constitute an internal "debt" that in later years must be repaid from the operating budget.

In assessing the significance of this deficit it is important to understand that the portion of the University budget in which it is occurring and must be corrected is less than a third of the University's overall operating budget. That is, although the \$8.8 million represents a 1.1% deficit in the \$799 million budget, it is effectively a 3.3% deficit in the \$265 million of expenses funded with general appropriations and unrestricted endowment income.

The \$534 million portion of the budget that does not directly affect the University's net deficit is funded from revenues generated by and restricted to specific programs, the largest of which is the School of Medicine (\$321 million, or 40% of the University's budget). This portion also includes expenses supported by income from highly restricted sources such as the following: direct grant and contract support for sponsored research outside of the School of Medicine (\$47 million); income from restricted endowments for other professional schools and for programs like the Beinecke Library, the British Art Center, and the Yale Press (\$35.6 million); tuition income and fees in professional schools (\$34 million); gifts that are highly restricted as to purpose (\$26 million); and medical service income to the Yale Health Plan (\$11 million).

The \$265 million constitutes expenses funded from unrestricted University resources -- income from the unrestricted portion of the endowment, from the Yale College

term bill, from the annual Alumni Fund and other unrestricted expendable gifts, and from overhead recoveries for sponsored research. This portion of the University's budget is allocated to cover the expenses in the Faculty of Arts and Sciences (\$167.1 million); academic support services, such as the library, museums, and computing (\$27.5 million); athletics (\$8.3 million); supplemental funding for those professional schools that are not entirely self-supporting (\$7.7 million); and all of the central administrative and operational costs of the University (\$54 million).

Furthermore, this \$265 million portion of the operating budget itself cannot be reallocated easily or quickly. A large fraction of it is constrained by such long-term commitments as tenure and specified term appointments, contracts entered into with bargaining units, federally and state mandated programs, and various ongoing expenses critical to the functioning of the academic and research programs. Other portions cannot be changed without retreating from such commitments as to need-blind admission in Yale College.

Although certain administrative and support expenses have been cut by more than \$8 million over the past two years, the 1992-93 deficit is currently projected to be at least \$23 million, if corrective action is not taken. It could be better or worse for a number of reasons, but the problem could grow even larger in the future. The three major factors expected to contribute to this rapid increase in the projected deficit are the following: (1) escalating medical benefit costs; (2) potential changes in overhead recovery revenue; and (3) additional interest and amortization payments for capital expenditures already authorized.

In the future, the University can to some extent determine the level of additional debt service, but it must negotiate both reductions in benefit costs and the new overhead recovery rate on federal grants and contracts. A significant portion of this amount would

affect the School of Medicine, depending upon the outcome of these negotiations, but some portion would also affect the Faculty of Arts and Sciences. Each percentage point of the indirect overhead recovery rate accounts for \$800,000 of income. Therefore, for each point below the previous 68% rate that the final negotiation settles upon, there is a loss of \$800,000 of unrestricted revenue to the University.

A base projection of the entire University's expendable revenues, expenses, and changes in fund balances over the next eleven years, assuming no change in the current programs, is displayed in Table 4. This projection assumes that the various streams of income will grow at the best current estimates and that operating expenses of the existing programs grow at expected rates of inflation, based on a GNP deflator rate of 4.5%. Income from indirect cost recovery is projected to decline in 1992-93. The capital expenditures projected in this table include the following: (a) an annual investment of about \$40 million in the existing physical facilities on the central and science campuses, excluding the utilities systems; (b) those new construction projects and programmatic improvements to which the University is already committed or which will be funded by restricted fund income (such as the clinical research building at the School of Medicine); and (c) new construction only when funded completely by restricted gifts received for specific capital projects (such as the Luce International Studies building).

Table 4 suggests what Yale's financial situation might become if no corrective action were taken. The current \$8.8 million deficit would quickly quadruple and reach \$100 million in less than a decade, leaving Yale with an accumulated net deficit of \$652 million. Of course, such a situation will not occur, because expense reductions and revenue increases must and will be made. Nevertheless, even taking into account the large element of uncertainty, the projection provides an important warning about the implication of current trends and a base for testing alternative plans for the future.

3-Dec-91

TABLE 4.

YALE UNIVERSITY

Base Projection

(Excluding Medicine)

	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00	00-01	01-02	10 Year CGR %
Expendable Revenues												
Tuition, Room, and Board	178.9	189.6	201.0	213.1	225.9	239.4	253.8	269.0	285.1	302.2	320.4	6.0%
Grants and Contracts	67.2	63.6	65.9	68.9	72.0	75.2	78.7	82.2	85.9	89.8	93.8	3.4%
Gift	51.0	54.0	57.0	60.6	64.3	68.7	73.6	78.9	84.7	90.9	98.1	6.8%
Investment - Endowment	98.8	105.3	112.5	119.8	127.0	134.5	142.2	150.1	158.3	166.8	175.7	5.9%
- Other	12.0	12.5	13.1	13.7	14.3	15.0	15.6	16.3	17.1	17.8	18.6	4.5%
Medical Services	11.1	12.4	13.8	15.4	17.2	19.3	21.6	24.3	27.3	30.7	34.7	12.1%
Other	73.9	77.6	81.4	83.8	87.6	91.6	95.9	100.3	104.8	109.7	114.8	4.5%
TOTAL REVENUE	492.9	515.0	544.7	575.3	608.3	643.7	681.4	721.1	763.2	807.9	856.1	5.7%
Expenses												
Operating Expenses	477.4	523.2	562.0	594.2	636.3	679.0	724.4	772.8	824.4	879.9	940.0	7.0%
Capital Expenditures	44.6	54.9	69.4	61.2	65.9	66.8	69.6	75.0	80.6	81.3	86.2	6.8%
Increases in Fund Balances	15.7	5.2	5.5	6.1	6.8	7.4	8.2	9.0	10.1	11.1	12.4	-2.3%
TOTAL EXPENSES AND INCREASES IN FUND BALANCES	537.7	583.3	636.9	661.5	709.0	753.2	802.2	856.8	915.1	972.3	1,038.6	6.8%
EXPENDABLE REVENUES LESS EXPENSES AND INCREASE IN FUND BALANCES	(44.8)	(68.3)	(92.2)	(86.2)	(100.7)	(109.5)	(120.8)	(135.7)	(151.9)	(164.4)	(182.5)	15.1%
Capital Expenditures Financed with External Debt	36.0	45.3	58.8	49.7	53.4	53.2	55.0	59.2	63.7	63.2	66.8	6.4%
UNFUNDED EXPENSES	(8.8)	(23.0)	(33.4)	(36.5)	(47.3)	(56.3)	(65.8)	(76.5)	(88.2)	(101.2)	(115.7)	29.4%
* Fund Balances as a % of Operating and Capital Expenses	26.3%	23.9%	23.4%	25.0%	25.3%	25.6%	25.7%	25.9%	25.9%	26.3%	26.4%	

It is clear that Yale's scale of operation (excluding its capital needs) exceeds the capacity of its financial resources. Unless that structural problem is solved, no matter what annual adjustments are made, the budget gap will simply reappear and widen again. Even with excellent fund-raising and a significant reduction in the recommended annual expenditures on capital maintenance, the scope of the University's programs must be reduced if Yale is to meet its major commitments to an outstanding faculty and student body, high-quality academic programs, and facilities that meet the needs of those programs. Achieving these goals within a balanced budget will require a long-term financial plan that takes into account all sources of income and all categories of expense.

WORKING TOWARD AN INTEGRATED FINANCIAL PLAN

Yale's Mission and Priorities

Before a long-range plan to meet the University's academic goals within a balanced financial structure can be proposed, the principles that will govern the process of reduction and restructuring must be articulated. These principles must be consistent with Yale's basic structure and mission: to create, transmit, and preserve knowledge through a premier undergraduate college and graduate and professional schools of the highest quality. This requires the continuing ability to attract the finest faculty and students and to support their activities with a broad array of intellectual and administrative resources. These resources include a great library system, state-of-the-art scientific laboratories and computing facilities, theaters and recital halls, museums and galleries, academic, residential, and athletic facilities and programs, an effective security program, and offices for such purposes as student services, development, budget and planning, grants and contract administration, and operations. All of these components require skilled managerial and

professional personnel, clerical and technical workers, and service and maintenance staff. The academic mission heads the University's priorities, but that mission cannot be separated either from the agencies, personnel, and collections that implement it or the facilities in which it is carried out.

The fundamental goal of Yale College has always been to provide a broad liberal education of the highest academic quality to outstanding students who have the talent and motivation to make use of the University's resources and who may be expected to assume positions of leadership in society. For over a half-century the residential college system has been a distinctive part of Yale College, providing housing, dining, academic, and extracurricular opportunities on a comfortable scale. Since the early 1960s, admission to Yale College has been granted without regard to the ability to pay, and financial aid has been provided equitably to all students with demonstrated need. Since 1969 Yale College has been coeducational, and over the past few decades Yale has attracted students who are members of racial and ethnic minorities in ever-increasing numbers, to the point where minority students now constitute more than 25% of the undergraduate body.

Yale's reputation also relies on a distinguished Graduate School of Arts and Sciences, with a large body of carefully selected and competitively supported graduate students who receive training in their disciplines through nationally ranked programs. While at Yale these students accumulate the knowledge and learn the research and teaching skills that help them to become academic leaders in the nation's colleges and universities.

Serving both undergraduate and graduate students is one of the finest faculties in the world. The Arts and Sciences faculty, the University's largest, forms the intellectual core of the institution. Through its reputation for research and teaching of the highest quality, it draws to Yale outstanding students and faculty, who together advance the scholarly boundaries in the many fields of knowledge it represents.

Yale has also long been known for the number and range of its highly regarded professional schools, from Divinity to Medicine. Unlike any comparable private institution, Yale supports four outstanding schools in the arts: Art, Architecture, Drama, and Music. These schools train many of the nation's best professional artists while they enrich the cultural and intellectual lives of students and faculty as well as the greater Yale and New Haven communities.

Finally, Yale maintains a number of renowned museums and galleries, which provide unique educational resources for students and faculty while they preserve and display their collections for the benefit of the larger community and the world.

Structure of the Integrated Financial Plan

The cost of sustaining a University of this quality, size, and breadth is immense. Few universities have attempted to do as many things as Yale has, but inevitably, no university has the resources to do everything it might wish. As has been the case before, a time has come for Yale to determine how best to balance its ambitions and financial resources. The challenge before the University is to develop a plan for the 1990s that will accomplish that goal within clear guidelines that foster the mission and protect the quality of the institution. Specific guidelines for meeting this challenge were spelled out in the cover letter to this report.

In developing an integrated financial plan, it is appropriate to begin by estimating the maximum achievable level of all revenue sources, including spending from the endowment and the fund-raising campaign. That level of income will determine how large an expense base the University can sustain over time. Next, the entire expense base must be examined to determine where the necessary reductions can most appropriately be made. The major reduction in projected expenses can and will be achieved by reducing the scope

and ambition of the capital program. Although the facilities problems cannot be ignored, the pace at which they are addressed can be slowed, provided that projects can be chosen carefully and carried out efficiently. Any remaining gap between projected income and expenses must finally be closed by reductions in the academic programs and administrative and support services of the University. Those reductions will not be easy, and they cannot be achieved simply by trimming the administrative and support services. Their impact will be felt throughout the University, for they will require, unavoidably, a reduction in the size and number of academic programs.

Specific decisions about both income and expense will need to be discussed further with relevant committees, deans, and directors before detailed plans can be made, and even when completed the integrated plan will indicate only the general direction, not necessarily the specific course, that the University will follow in the 1990s. It will be a guide, not a blueprint.

RESOURCES FOR MEETING YALE'S PRIORITIES

The University has six major sources of expendable revenue: (1) tuition, room, and board fees; (2) endowment and other investment income; (3) gifts; (4) grants and contracts; (5) medical services; and (6) other income. In the long run, the money available to both operating and capital expenditures must come from these expendable revenues. These revenue sources must also furnish the funds to repay any debts that the University may incur to pay for the cost of major capital investments whether for new buildings or renovations of existing ones.

What follows is a brief discussion of the the University's expendable revenue streams and their estimated potential for growth over the decade. All of these estimates involve very considerable uncertainty, but in general each is quite aggressive. It seems

certain that even if one or more exceeds our forecast, others will fall lower. The expenses of the university must be made to conform with the total income. Only by understanding both the potential and limits of income enhancement can the need for programmatic reductions be understood.

Major Sources of Revenue

1. Tuition, room and board fees: This represents the University's largest source of unrestricted income, 22% of all the income budgeted in 1991-92. Yale College tuition represents over half of that total. Given the recent history of steep increases and the potential impact of higher costs on the composition and quality of the student body, it seems inappropriate to anticipate returning to the growth levels that characterized the mid 1980s. Because inflation rates in the operating expenses in higher education – as measured by the Higher Education Price Index (HEPI) – have run approximately 1% to 2% percent above the general inflation rate, the base projection of tuition revenues assumes current enrollments and growth at the rate at 1.5 % over inflation.

Because tuition revenue has such a significant impact on the University budget, various strategies for increasing tuition income are being considered. These include tuition rate increases that are somewhat in excess of those projected, and higher enrollment levels in both Yale College and the professional schools if more residential and programmatic space can be made available through new housing, capital renovation, or reallocation of existing space.

2a. Endowment income and the spending rule: In 1991-92 this revenue source is estimated to release \$106.2 million in expendable income, 12.6% of the University's total revenue this year. As large as this portion of income is, it represents a smaller proportion of income from endowment than at several of our major competitor institutions. That is to

say, Yale has attempted to sustain a program similar to its competitors on the foundation of a smaller endowment. That is one reason why Yale programs at present are not sustainable over the long run.

The endowment is Yale's one truly permanent asset, and by policy it must be managed and spent in such a way as to protect its long-term purchasing power in order to provide a stable, sustainable stream of annual income to flow into the operating budget. Yale's current spending rule assumes that over a long period of time the real rate of return from the investment of the endowment assets, excluding new gifts, is 4.5% (i.e., 4.5% over inflation). To protect that level of endowment, a significant amount of all earnings (both from dividends and from the sale of certain assets) must be reinvested in the endowment.

Spending in a given year is determined by adding two amounts: the previous year's spending, increased by expected inflation, weighted at 70% in the calculation, and an amount equal to 4.5% of the previous year's average endowment market value, weighted at 30% in the calculation. By weighting more heavily the previous year's spending, the rule eliminates large fluctuations in annual income. By adjusting 30% of the spending toward the long-term rate of 4.5%, the rule ensures that the endowment will constantly move toward that sustainable real rate of return and thus retain its long-term purchasing power. Thus in a year in which the endowment return is well over inflation plus 4.5%, the rule limits spending growth by allowing that superior return to affect only 30% of the amount flowing into the budget. Conversely, if the value of the endowment declines or its increase is below inflation plus 4.5%, the rule permits a higher rate of spending in that year than would in the long-run protect the endowment's purchasing power. This rule thereby ensures that the endowment will constantly move toward the sustainable real rate of return.

The proof of a spending policy lies in performance over time. Such policies work well only if the discipline they impose is respected. Unequal pressure tends to be applied toward those policies. In periods of above average investment performance, many University constituencies urge higher annual spending from endowment funds. However, in poor investment markets pressure is seldom exerted to trim annual spending from the endowment.

During the past two decades, including poor markets of the 1970s and ebullient markets of the 1980s, Yale's investment and spending policies have performed very well. They have effectively maintained the endowment's purchasing power, but have not enlarged it. Over the past decade, the Yale endowment has grown from \$799 million to \$2.6 billion, more than tripling in nominal terms and generating annual compound growth after spending of 11.6%. The enormous surge in the value of the endowment during this particular ten-year period might lead to the conclusion that endowment growth has exceeded its target. But over the past 35 years the endowment did not keep up with inflation. In fact, excluding the effect of new gifts added to the endowment during that period, Yale's endowment would now have to be approximately \$3.5 billion instead of \$2.6 to maintain the purchasing power it had in 1950. This illustrates the importance of taking into account the poor capital market performance (the 1960s and 1970s) as well as the strong markets (the late 1950s and the 1980s) when assessing endowment performance.

Although the endowment has performed well during the past decade, by several measures Yale's endowment is smaller than might be desirable. Over time, the expansion of Yale's programs at a rate much greater than inflation has diluted the endowment's ability to support the budget. In 1950 the endowment was approximately nine times the operating budget and provided more than 35% of the University's income. In 1991, the ratio is less

than four-to-one, and the endowment provides only about 12% of that income. As already noted, this is a smaller proportion than other competing institutions.

The base projection assumes that the investment return on the endowment will continue in the long run to be 4.5% above the general inflation rate. It also assumes that Yale will continue to receive approximately \$25 million annually in new endowment gifts. Given the University's current needs, it would of course be desirable to derive more income from the endowment if doing so did not threaten its long-term value. It would of course not be appropriate to contemplate a change in order to meet a budget gap or to profit from a short-term excellent market, such as that of the 1980s. The only prudent way to increase the annual income would be to review the current asset allocation of the investments in the endowment in order to determine whether the long-term financial plan might include an increase in the target rate used in the annual spending policy from the endowment.

The question is often raised whether the income from the endowment might not be increased through changing the spending rule. In assessing the effect of a change in the spending rule, it is essential to recognize that at least 75% of the University's 3,300 endowment funds (which together constitute the endowment) are restricted in accord with the donor's wishes. Some are restricted as to use (e.g., a professorship, a prize); others are restricted as to unit (e.g., the Law School, the Beinecke Library). As a result, only about half of the additional expendable income that would be released from any change in the endowment spending rule would be available to meet the unrestricted expenses of the University and thus reduce the projected deficits. The rest would increase spending from restricted funds residing in the schools and other independent units.

2b. Other investment income: This income derives primarily from using the balances in Yale funds to invest in the short- and medium-term government-security

markets. Because this program depends on interest rates and balances available, it is a highly variable source of revenue. Interest income has ranged from a high of 10% to a low of just above 6% over the past five years, reflecting the changes in rates over this period. It is currently assumed that over the decade the balances on which Yale earns annual income will continue to increase at the rate of inflation and that funds can be invested at an interest rate of 7%.

3. Current use gifts: In 1990-91, expendable gifts, including fiduciary income and non-federal grants, amounted to \$81.7 million. Gifts represent the most variable and unpredictable of the University's sources of income. They may take the form of outright gifts, gifts of property, pledges payable over time, or bequests at an unspecified date in the future. They may be expendable in the year they come ; they may be held for expenditure in future years; or they may be placed in a fund for long-term use. Some annual gifts, like the Yale College Alumni Fund, may be used for any purpose and are thus budgeted as unrestricted income. Annual gift totals are also highly variable. For example, during the past decade annual bequest proceeds have ranged from \$3.2 to \$33 million. Total gift figures thus reveal little about the actual impact of the money. One must look at the form of the gift as well as its restrictions to assess its effect on Yale's expense base.

Over the past five years, the growth of expendable gifts has slowed to only 2.4% annually, after an annual growth of 8.2% over the previous five years. In part this reflects a low year in facilities gifts in 1990-91. The four-year growth before 1990-91 was 4.1%, or just about the rate of inflation over the period. Non-expendable capital gifts over the past five years grew annually at 9.5%. The year 1990-91 was a good one for endowment gifts, including portions of the Bass family gifts and several bequests. Before 1990-91 the four year annual growth in endowment gifts was only about 2%.

The base projection assumes that gifts will continue to grow at or near the actual annual rate of growth over the past five years, adjusted to exclude the unusual number of very large gifts received in 1990-91. However, the University is about to embark on a major fund-raising campaign, the objective of which is to increase the total amount of new gifts over the next decade, to support both the endowment and current program expenditures, including capital ones.

Given Yale's current needs, the primary use of any additional gifts during the next decade will be to accomplish Yale's facilities refurbishment. To the extent that the University is successful in allocating new gifts to facilities, it will reduce the need for the University's operating budget to meet the annual debt obligations required for large capital expenditures. The strategy for the long-term plan therefore will allocate as many of the new gifts as possible to the capital program.

The projected fund-raising goals during the next decade are viewed by the professionals in this field as extremely aggressive. If Yale is successful in raising these funds, even beyond the time period set for the campaign, a total of \$2.7 billion will flow into the University. It is important to realize that this is not all "new" money. If fund-raising simply continues to grow at rates experienced over the past five years, the University might hope to raise and spend on its normal operations \$2.1 billion over that time period. At the projected higher rates, the campaign may bring in up to \$600 million that Yale would otherwise not have received. This incremental amount is critical to the University's plans, and as much of that \$600 million as possible must be directed toward facilities renewal.

To that end the University must make significant changes in the historical patterns of giving. If Yale is successful, a total of about \$500 million might be available for all building needs. As has been mentioned, the capital plan assumes that over \$430 million in gifts will be available for capital maintenance projects. To achieve this, close to half of the

incremental funds must be designated for renovations of existing buildings. The campaign thus faces a triple challenge. It calls for raising more money than Yale ever has, convincing potential donors to alter their giving patterns toward facilities, and directing nearly all facilities gifts into the renovation of core facilities rather than the building of new buildings.

4. Grants and contracts revenue: This is the largest source of expendable revenue to the University, estimated to account for \$218 million in 1991-92, or 26% of total revenue. Approximately 80% of this amount is funded by the federal government, primarily through the National Institutes of Health and the National Science Foundation. The School of Medicine accounts for two-thirds of the University's total.

Grants and contracts revenue comes in two forms. The larger portion, \$162 million in 1991-92, supports the direct expenses of specific research projects under the supervision of the principal investigators who applied for and receive the grants. The smaller portion, \$56 million, is called the indirect cost recovery. It pays for a portion of overhead (the buildings, utilities, and administrative expenses) that the University incurs in supporting that sponsored research. The rate of this indirect cost recovery through the end of 1990-91 was 68%. That rate meant that for every dollar of direct research support the University received, it received another 68 cents toward indirect or overhead costs. Given the posture of the federal agency charged with setting Yale's indirect cost recovery, and shifting federal policies on indirect cost recoveries, it seems clear that the growth rates of this revenue will decline, even if Yale is successful in maintaining or even increasing its share of federal research budgets.

There is no area of the University's budget currently as uncertain as this indirect overhead recovery. Although much controversy has surrounded alleged misuse of some funds from indirect cost recovery at other institutions, the far larger issue is that the federal government is reviewing cost reimbursement policies, and in some ways seems to be

retreating from its commitment to fund the full cost of the research it sponsors. The consequence is to require universities to identify other revenues to fund a significantly greater part of that research. In the long run this will have a deleterious effect on the amount and quality of research that universities such as Yale can undertake.

Because of this uncertainty and the pressure to reduce the federal budget, grant and contract revenue is currently difficult to project. Its future growth will depend on several factors. On July 1, 1991, the University's three-year negotiated overhead rate expired. Although negotiations between the University and its cognizant federal agency, the Department of Health and Human Services, are still underway, it appears that beginning in the current year, the rate may drop significantly, and that downward pressure will continue. The federal Office of Management and Budget has also introduced a cap on the administrative portion of the overhead rate at all institutions effective July 1, 1992. For Yale, that cap may result in a reduction of between four and eight percentage points in the overhead rate.

A separate factor affecting grant and contract revenue is the volume of grants that might be expected, given federal budget constraints. Over the past five years, total grant and contract income has grown in excess of inflation, on average approximately 6.8% annually. This growth has not been divided among the schools of the University proportionally. The School of Medicine has averaged 8.7%, while the Faculty of Arts and Sciences -- partly as the result of a major reduction in one of the University's largest grants - has averaged only 2.3%. The University's base projection assumes that the budgets of its major funding agencies, the National Institutes of Health and the National Science Foundation, will grow only modestly above inflation, but it assumes that Yale will continue to receive the current share of the agencies' funding. This projected growth is 6 % in Medicine and 4.5 % in non-Medicine programs -- aggressive in this federal budget climate,

given that overall grant activity at Yale has grown just 6.2% annually during the past two years.

5. Medical services income: This revenue, estimated at \$148 million in 1991-92, has been the fastest growing revenue source of the University over the past five years, but except for a small amount that comes to the Yale Health Plan, medical services income affects almost exclusively the School of Medicine. It derives primarily from fees paid for the clinical activities of the faculty of the school. Practice costs and discretionary expenses, including salaries and fringe benefits, are the responsibility of each department. Any excess income accrued to departmental reserves may be expended for approved purposes by the department. A portion of the fees collected for patient services is allocated to the Dean of the School of Medicine for general school purposes. The base projection assumes that this revenue will increase about 10% annually.

6. Other income: This income, which is estimated to be \$99 million in 1991-92, comes from a variety of small sources, including application fees, ticket sales for athletic and performance events, and the sale of utilities services to the Yale/New Haven Hospital. It is often directly tied to the program or unit that "earns" the income. The base projection assumes that this revenue will grow at the rate of growth of the relevant expense base (e.g., utility charges) or inflation, depending on the specific income item. Given the regional economy and the current level of prices, it would be unrealistic to expect more from this income source.

Total Revenue Expectation

Taking all these sources of revenue together and under the assumptions mentioned above (including a decrease in the indirect cost recovery rate), the base projection estimates a 5.1% increase annually in centrally managed unrestricted funds over the next five years, or

just 0.6% greater than assumed general inflation. Even if the revenue for the School of Medicine and for other restricted units is included, the projected growth is just 6.2 % over the next five years. The current long-term plan is to increase income -- primarily tuition and fund-raising -- to reach and sustain an annual expendable revenue growth of 6.6% in centrally managed unrestricted funds. If successful, this would generate an additional \$58 million in such revenue in the year 2002. Of course, the University has less than perfect control over even these revenue sources, so considerable analysis will be necessary before concluding that so aggressive a projection of revenues is possible.

CAPITAL EXPENDITURE GOALS AND STRATEGIES

If the University is to be asked to make such major academic reductions as are being contemplated, then faculty, students, and staff must be assured that capital expenditures will be well planned and responsible. No category of expense has generated more interest and controversy in recent months than the University's commitment to rebuilding its physical facilities. It is clear the problem must be addressed. It is no less clear that addressing it will require major changes in the academic programs and the administrative units of the University. During the 1970s the University chose to protect its academic activities by postponing capital maintenance wherever possible. By the middle of the 1980s, after the operating budget had been restored to balance, President Giamatti and Provost Brainard took the first important steps to address some of the long-deferred maintenance problems. Soon after arriving at Yale, President Schmidt was persuaded of the need to continue that program. Under the direction of Provost Nordhaus, five committees of faculty and administrators conducted a comprehensive study of the University's capital needs. Those committees examined in detail the residential, science, non-science academic, classroom, and support facilities and reported their findings to a

central Capital Planning Committee, which identified the highest priority buildings and spaces and recommended to the Officers and the Corporation that a systematic reinvestment of resources into those facilities be undertaken.

Subsequently, detailed engineering surveys generated preliminary estimates of the expected cost to put each of Yale's buildings into functional condition and prevent further deterioration. In light of these surveys and guided by the priorities set by the Capital Planning Committee, the most important buildings and projects were designated and priorities suggested for renovating them over the next decade. Finally, based on these reports, on professional standards for the normal cost of renovating space according to use, and on past Yale experience, three possible levels of annual capital maintenance expenditure were identified. These levels were based on the thoroughness of the program and the speed with which the University might address capital maintenance estimated between \$1.2 and \$1.5 billion (in 1991 dollars).

At the request of the Corporation Building and Grounds Committee their separate levels of capital maintenance were projected. The highest of the three levels considered is \$163 million (in constant 1991 dollars) annually and represents the maximum level of spending that could effectively be achieved with Yale's capacity for facilities management. This scenario includes some new construction and renovations designed to meet new programs, as well as funds to address continuing deterioration of buildings. It therefore exceeds the \$1.5 billion estimate of current capital maintenance needs. The intermediate level is \$105 million annually, an amount that would address over time the accumulated maintenance problems as well as provide an appropriate amount for ongoing capital maintenance. This intermediate level was initially recommended by the Corporation Building and Grounds Committee. The lowest level of annual expenditure considered by the Corporation, \$57 million, was characterized as keeping the University from allowing further deterioration of its facilities. Based on professional standards of recommended

levels of capital maintenance (2% of the estimated value of the 10.5 million square feet of space in Yale's buildings), annual spending at that level would leave little room to address the backlog of deferred capital needs. Although none of these levels of annual spending would allow the University to meet all of its potential facilities needs within the next decade, even the lowest level is significantly higher than the average spending over the past decade -- approximately \$20 million in 1991 dollars for capital maintenance and utilities.

Given the constraints on the University budget and the competing critical academic needs, the administration believes that even the "minimum" level of spending considered by the Corporation and included in the base projection may not be possible over the coming decade. The University is currently looking at a significantly reduced program, and one that shifts a large portion of capital expenditures from debt to gifts. This program is shown in Table 5, which summarizes by category the annual facility expenditures and sources of funding proposed over the next decade. It separates out the School of Medicine, which represents about 15% of the University's space and which is responsible for its own capital needs. The table also compares these levels to the average annual expenditures over the past five years.

At the \$57 million level identified by the Corporation as the minimum for total annual capital expenditure, \$40 million was expected to be spent on the central and science campuses for capital renovation of core buildings and \$3.3 million on renovations of the utility delivery systems. The remaining quarter of the total expenditure was to be spent at the School of Medicine. Under the plan currently being considered by the administration, only \$30.6 million would be spent on central capital renovation and \$3.9 million on utilities, a significantly higher level than the \$20 million achieved over the past decade, but 20% less than the minimum target. A total of \$44.3 million would be spent annually on the central and science campuses, including anticipated but unspecified programmatic improvements and new buildings. This category of capital expense, projected to be about

\$9.8 million, represents the likely outcome of a fund-raising campaign, which will generate some restricted capital gifts that cannot be used for basic renovations. The projects would be undertaken only if the gifts were received. What might be accomplished with this \$34.5 million for facility renovation and utility improvements? The University must first address non-deferrable renovation of the utility plants and delivery systems. The main utility plant on the central campus has not had significant renovation since 1918. The systems for delivering and controlling heat and chilled water throughout the campus are antiquated and barely functional. Failures in these systems are accelerating at great financial and programmatic cost to the institution. This work will require on average \$3.9 million annually, with a large fraction of those expenditures made early in the decade.

Second, Yale must honor legal agreements it has signed with state and city agencies to continue bringing the ten original residential colleges and the residential portions of the Hall of Graduate Studies and the Law School up to fire and safety code equivalency over the next several years. This will cost at least \$4 million annually.

Third, the University must make a number of other imperative renovations meet in the areas of health, accessibility, and various other aspects of code compliance. Here a choice can sometimes be made to close a building or cancel a program, rather than meet the costs of required improvements. Based only on Yale's historical average spending on such projects -- before the new and much more detailed requirements recently passed by Congress -- it is estimated that work to meet this kind of compliance will require annual spending of at least \$1 million.

The remaining \$25.6 million will be applied to as many of the highest priority capital renovations currently in the backlog of deferred maintenance as possible and to new capital maintenance needs as they emerge. The potential list of needs in these areas so far exceeds the potential dollars that over at least the next decade choices will be very difficult

and the rate of improvement slow. It is important to recognize that this level of capital expenditure will permit no complete reconstruction projects, like those of Calhoun College or William L. Harkness Hall. Instead, projects will be limited in scope, and target the most essential categories such as security, roofs, masonry, and plumbing and electrical systems. There will be no room for improvements generated by program needs, except as they follow naturally from better functioning buildings. The 1992 capital budget contains only a fraction of the list of needs identified as pressing by the managers of Physical Plant. The budget includes such projects as card-key access to entryways in the residential colleges and bathroom renovations in Wright Hall and Saybrook College. It excludes such projects as the Sterling Chemistry Building roof, the Art Gallery heating system, and further improvements to the Payne Whitney Gymnasium masonry. Progress will be made at this level of expenditure, but the pace will be slow.

It is important to look carefully at the funding proposed for this level of capital expenditure (Table 5). One prudent way to fund capital renovations is through outside borrowing, with the interest and amortization costs carried in the operating budget. The level of additional borrowing assumed over the eleven years in the proposed capital program for the whole University is \$28.3 million (in constant 1991 dollars) annually for a total of \$311 million. Approximately one third of this will be borrowed and repaid by the School of Medicine for projects there. Two thirds -- about \$198 million, or \$18 million annually -- will be used for central and science campus projects, including central utilities. Because of the increased expectation for capital gifts, the total amount of borrowing proposed is in fact smaller than the approximately \$350 million in plant debt that Yale currently has outstanding or has committed to undertake through December, 1991.

On the central and sciences campuses borrowing will be used only for high priority capital maintenance and utilities (Table 5). That amount (\$18 million annually) will provide only about half of the \$34.5 million proposed in those categories. Funding for the

TABLE 5

YALE UNIVERSITY

ANNUAL FACILITY SPENDING AND ITS SOURCES

(in millions of constant 1991 \$'s)

	1987-1991			1992-2002		
	-----Historical Average-----			-----Proposed-----		
	Central/ Science Campuses	Medical School Campus	Total	Central/ Science Campuses	Medical School Campus	Total
Capital Expenses						
Facility Renovation	20.9	1.1	22.0	30.6	5.1	35.7
Utilities	1.0	3.4	4.4	3.9	3.7	7.6
New Construction	4.5	14.6	19.1	0.0	5.6	5.6
Programmatic Improvements	9.8	6.9	16.7	9.8	3.2	13.0
Total	36.2	26.0	62.2	44.3	17.6	61.9
Revenue Sources						
Borrowing				18.0	10.3	28.3
Gifts						
for target projects				16.5	1.0	17.5
for other projects				9.8	0.0	9.8
Other				0.0	6.3	6.3
Total				44.3	17.6	61.9

rest (\$16.5 million) is expected to come from annual gifts. This assumption entails a high degree of risk, because it depends on a significant increase in facilities gifts, as well as a successful redirection of those gifts into projects that donors may consider very mundane. Nevertheless, if the University is unable to raise that \$16.5 million of gifts annually for capital renovation projects, the expenditures even for high priority projects will fall accordingly. Debt will not be incurred beyond the levels projected, even to accomplish core capital renovations.

Every other potential capital project also depends upon the receipt of gifts. That is, all of the remaining capital expenditures will require external fund raising. The table includes \$9.8 million annually for a category called programmatic improvements. This category does not include specific projects beyond those already authorized, such as the Luce International Studies and the Perry and Mary Lee Bass Structural Biology buildings. Fund-raising experience indicates, however, that the University should expect an accelerated fund-raising campaign to bring in as much as \$9.8 million annually that cannot be diverted to basic capital renovations. Such funds would allow renovations or new facilities specifically identified by the donors. The plan does not seek that kind of gift, but despite every effort to direct gifts toward renovation and maintenance, it is likely that some capital gifts will be restricted and donor-directed. The University will use them for projects that serve high priority programs, thereby indirectly relieving maintenance and renovation costs elsewhere. The \$9.8 million is therefore included both in the expenses for programmatic improvements and the gift revenue for "other projects." But only if and when such gifts are raised and meet the full costs of the buildings will the expenditures be authorized.

Only by carefully allocating resources and efficiently accomplishing renovations will a program at the projected level of \$34.5 million improve the University's physical structures and utilities systems. The University is developing an improved review process

to ensure that funds are spent wisely and effectively. Specific responsibility for project preparation and management has been placed in the newly reorganized Facilities Planning and Facilities Management offices. Projects suggested by these offices will be subject to rigorous review and approval by committees that include both faculty and administration, including the reconstituted University Buildings and Grounds Committee.

It will be the responsibility of the Buildings and Grounds Committee to assess both the intrinsic and relative merits of projects brought before it, to judge them in light of the University's priorities, to examine the level of renovation and the standard of work proposed, and to test the proposed budgets against industry costs for such work. In addition, a formal capital budget will continue to be prepared annually, setting forth in detail projected spending for the year. That budget will be approved and monitored by the University Budget Committee and the Corporation Finance Committee.

Guidelines for the Capital Program

Throughout the decade, capital expenditure on core buildings and work on the infrastructure must take precedence over new construction, and the University must make conscious decisions about the level, quality, and long-term cost of every project. In addition, the University will retire a significant amount of poorly used and hard to maintain space. The proposed guidelines for the capital program are as follows:

In the competition for funds, capital maintenance of facilities housing core activities, security work, safety improvements, and code-required work take precedence over new construction and programmatic improvements.

Projects will be chosen on the basis of urgent need. The University will generally not do comprehensive renovations of complete buildings. Rather, systems and portions of buildings most in need of repair will be replaced or renovated.

Exceptions to this policy will occur if (a) restricted gifts for a full renovation project are received or (b) there is a clear financial benefit to comprehensive renovation.

The University will evaluate the level and quality of every project, taking into account such factors as the cost of the relevant options, the nature of the building, aesthetic considerations, and the long-term financial implications of the relevant options, including comparative costs of maintenance.

The cost of all projects will be compared wherever possible with the costs of similar projects elsewhere. Significant discrepancies in costs must be justified.

The operating and long-term maintenance implications of all projects will be considered and will be a factor in the decision whether or not to proceed.

No new construction beyond present commitments will be undertaken unless (a) it serves a critical and demonstrable University need and will be completely funded from restricted sources or (b) it has a demonstrable cost-recovery benefit that is greater than its cost. The University will also pursue a policy of raising endowment funds for ongoing maintenance any time that it raises capital for new construction.

The University will identify and retire a significant amount of poorly used, high maintenance space during the next decade, resulting in a more compact and efficient use of space.

Given the magnitude of the financial imbalance and the competing needs of the academic programs, it is clear that the University cannot spend as much as it would like on capital maintenance without seriously endangering programs that are at the heart of its teaching and research mission. Progress will be made at the levels proposed, but the

complete renovation of existing facilities cannot be accomplished until well into the next century.

Special Strategies for Financing Capital Projects

In taking a long-term view of capital needs, the University must maintain the right balance among the human, financial, and physical assets of the institution. One could say that over the past fifteen years, Yale successfully strengthened the human and financial assets. In spite of the unfavorable economic environment, during the coming decade the University must increase its attention to facilities. While gifts have provided support funding for new construction in the past, they have never provided the major funding for renovation of existing facilities; and although the operating budget must assume somewhat more of the capital maintenance burden, it cannot do so primarily by direct expenditures. Two potential sources for financing major capital projects deserve special attention because of the importance of the capital program: (1) the financial assets in the endowment and (2) the use of borrowed funds. These financing strategies have been considered not because they can generate more money for Yale in the long run, but because they alter the timing of when funds will be available for operating and capital expenditures.

Should assets be extracted from the endowment to fund capital projects?

The role of the endowment, particularly as it relates to the use of debt, has become a critical issue. Most of the funds in the endowment cannot be extracted under any circumstances, but the quasi-endowment, approximately 25% of the total endowment portfolio, is potentially available. This amount represents funds, currently functioning as endowment, that were given to Yale with the understanding that they need not be held in perpetuity. In considering whether some of these funds could be applied to the facilities needs of the University, several factors must be taken into account. First, approximately

80% of these funds carry donor restrictions that require the gift and its income to be used for a specific program or purpose, although some restrictions are sufficiently general that some funds might be used to renovate the facilities of the designated school or program. Second, the remaining 20% (\$135 million), which is composed of unrestricted University funds functioning as endowment (ULFFE), serves as a primary asset that creditors look to when the University borrows funds. Therefore, any plan to shift these funds from the endowment into facilities would have to take into account the potential effect on the University's credit rating and the resultant increased rate of interest on future and existing debt. Third, the current investment revenue projections presume that these quasi-endowment funds will remain in the endowment, so extracting them would reduce the projected annual revenue, thereby increasing the potential deficit.

Finally, there is the question of whether the endowment, including the funds functioning as endowment, is large enough to serve the institution effectively. By two critical measures, Yale's endowment funds are small relative to the size of the institution. Yale is behind Harvard and Princeton in total endowment per student, and significantly behind a number of its peers in unrestricted quasi-endowment per student, the class of funds that could be considered for reallocation to facilities. Several comparable institutions, including Harvard, have stated their intention to increase the portion of their operating budget that is supported by endowment and, as Yale did during the last campaign, have made endowment gifts a focus of ongoing or future fund-raising campaigns.

Nevertheless, the options of removing or borrowing some funds from the endowment have been considered and compared to the effect of borrowing the same amount of money from outside Yale. The options are: (1) borrow funds functioning as endowment to fund facilities renovations, or (2) permanently remove some funds functioning as endowment on a one-time basis.

The first option raises the question of whether it is better to borrow internally or externally. The opportunity cost of borrowing internally is in effect the total return on the endowment funds thus lost, while the cost of borrowing externally is for Yale the taxable AAA (Aaa) rate. Given the asset allocation and historical performance of Yale's endowment, its long-term total return surely should exceed the long-term taxable borrowing rate. Thus, it is clearly more expensive to borrow from the endowment than to borrow externally.

The second option, permanently removing funds that are functioning as endowment, is similar to the first in terms of comparative cost, except that it also raises long-term intergenerational issues. Constructing or renovating a building requires large outlays of cash in advance of the benefits of its use. Because building renovations have a useful life of anywhere from thirty to fifty years, the costs of the renovation should reasonably be spread over that time. Furthermore, at the end of that period, the building must be replaced or major renovations repeated, so costs of renovation should never be viewed as one-time expenses. Given the long-term effect on the value and thus on the spending from the endowment, extracting funds from that asset is relatively easy on the current generation of students and faculty, but will be increasingly costly for those at Yale in the future.

As an example, assume the University has a \$10 million capital renovation project and is debating whether to use existing endowment assets or to borrow the money to finance the project. The effect on the operating budget of these two options, given the current endowment spending policy and assuming a twenty-five year debt to be paid off at 9% interest is depicted in Exhibit 1. In the early years, the operating budget bears less of a burden by using endowment (black bars), primarily because extracting the \$10 million only "costs" the operating budget the \$450,000 annually produced by the the target spending

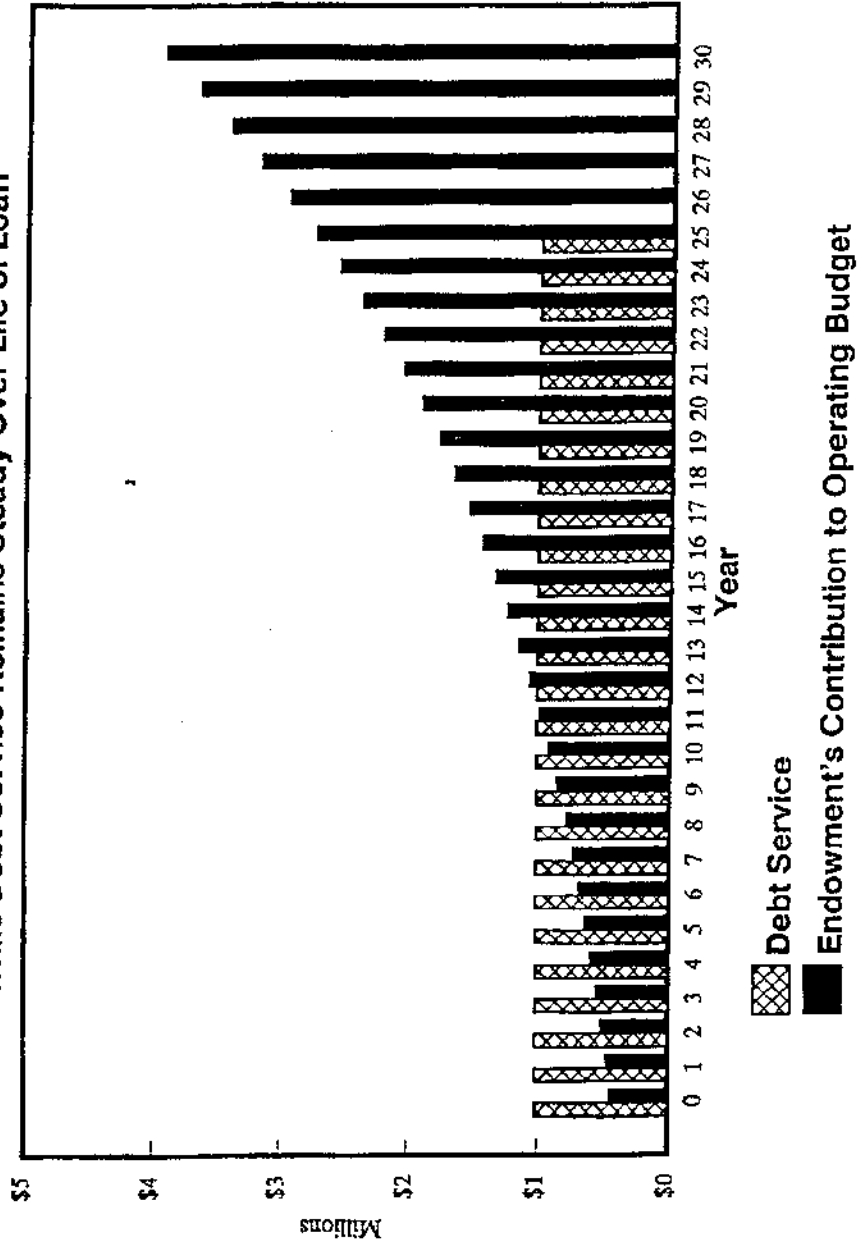
rate of 4.5%. This cost grows each year and continues indefinitely. By contrast, the cost of debt service (hatched bars) at a fixed borrowing rate of 9% is approximately \$1 million a year for twenty five years. Obviously in later years, the income forever lost to the budget far outstrips the debt service costs, which come to an end. Furthermore, at the end of that time, the building is again in need of renovation. If the operating budget had absorbed the annual cost of interest and amortization, the pattern could be repeated, though presumably at a higher level. Otherwise, an additional and even larger amount would have to be extracted permanently from the endowment. Thus, although it places a more difficult short-term burden on the operating budget to borrow money to finance capital renovations, in the long-run it is far preferable to using up endowment assets. Using endowment funds, one would effectively be taking an asset (the endowment) that is growing in value and converting it into another asset (a building) that begins immediately to depreciate.

How much can reasonably be borrowed for capital renovations?

Borrowing is a reasonable method of undertaking many of the substantial renovations Yale must accomplish, but it is, of course, merely a financial mechanism, not a new source of capital, and Yale must use the operating budget to repay any funds borrowed plus interest. Over the past fifteen years, debt service (interest and amortization) has increased as a percentage the operating budget. In 1975-76, that expense was \$2.8 million, or 1.5% of operating expenses. During the most recent intervening years, the amount of interest and amortization charged to the operating budget of the entire University grew as follows: 1986-87, \$9.7 million; 1987-88, \$11.9 million; 1988-89, \$13.8 million; 1989-90, \$16.1 million. In 1990-91 debt service costs to the operating budget were \$19.6 million, or 2.6 % of expenses. In 1991-92 they are expected to exceed \$25 million.

In 1991, Yale had \$237 million of outstanding indebtedness, most of it in long-term tax-exempt bonds. In addition, the 1991 capital budget has authorized projects to be

**Endowment's Contribution to Operating Budget Grows Over Time;
While Debt Service Remains Steady Over Life of Loan**



funded with an additional \$113 million in borrowing. As a result of the 1986 Tax Reform Act, this new borrowing will have to be in the taxable market (at a rate about 2% higher). Nevertheless, Yale's debt position is healthy, which means that the University can borrow additional funds at a favorable rate to help finance some of its capital needs. The University's current debt levels are comparable to its peer institutions. The primary constraint on additional borrowing is the impact of debt service on the operating budget. At current interest rates, the annual debt service costs on this additional borrowing will be about \$12 million, which must be absorbed by the operating budget over the next several years as the projects funded with this borrowing are completed.

Nevertheless, the University's capital maintenance needs suggest that Yale should plan to borrow an additional \$422 million in nominal dollars over the next decade, which would bring the University's outstanding indebtedness to more than \$700 million. If the endowment investment returns and future gifts follow assumptions, the debt-to-endowment ratio would increase from 10% in 1991 to just 11% in 2002, a comfortable level given the important needs that this borrowing would allow the University to address.

PLANNING A REDUCED EXPENSE BASE

After having taken all possible steps to maximize revenue, and after having made major reductions in the capital program, the University will still be forced to reduce somewhat the scale and range of its academic programs and administrative and support services from the current level to one that can be sustained over time within available resources. These reductions must total approximately \$45 million in annual expenses for the year 2002, or approximately 40% of the projected deficit. As noted earlier, these reductions will not be easy, particularly since they must be made from within the \$265 million in income flowing from tuition, expendable gifts, and unrestricted endowment

which is available for reallocation. Furthermore, many parts of that \$265 million must be protected to meet the institutional goals or pressing requirements described above.

The University will face many difficult choices as it develops a plan to reduce its expense base, and even more importantly, to slow the growth rate of expenses to a level commensurate with the growth of revenue. The full details of that plan are yet to be developed, but two features of it are clear. The first is that the expense reductions cannot be achieved simply by trimming the support and administrative services; the academic scale of the University will need to be reduced as well. It is the size and breadth of the academic programs, and the size of the faculty in particular, that drives costs in administrative and support services. Second, the impact of the expense reductions will be felt in every area of the University--in the Faculty of Arts and Sciences, the professional schools that rely on support from unrestricted University funds as well as those that are self-supporting, the Library, the museums and galleries, student services, and all areas of administration. In all these areas, the University will become smaller, though in a way that protects the most outstanding and essential programs and services.

The largest and most complex academic program and expense base of the University (excluding the School of Medicine which is self-supporting) is the Faculty of Arts and Sciences. The expenses arising from salaries and fringe benefits, support staff, academic and research funding, library acquisitions, athletics, and academic space are all related to the number of these faculty members and their students. Reductions in those support areas without reduction in the faculty eventually would undercut the productivity of the faculty and the attractiveness of Yale. Furthermore, it is academic programs that inhabit buildings that require capital maintenance. The size of the faculty also in no small measure generates the number of students in the Graduate School and the accompanying financial aid costs.

Having along with the other Officers and the University Budget Committee reviewed the general financial problem and the key expenses relating to the size of the faculty, the Provost appointed a Restructuring Committee for the Faculty of Arts and Sciences. This group has been looking since last spring at issues of quality, size, and composition of the faculty, the size of the Graduate School, the use of teaching fellows, and the relation among academic departments, in order to determine how best to reduce and restructure that faculty.

Later in this academic year, the Restructuring Committee will make its report to the Executive Committee of the Faculty of Arts and Sciences: the President, the Provost, and the Deans of Yale College and the Graduate School. The Committee's report will also be circulated to the faculty for discussion and comment before the Executive Committee makes recommendations later in the winter or spring to the Corporation about the size and distribution of reductions. The implementation of the Restructuring Committee's recommendations will be carried out over time by the Divisional Committees and the departments themselves.

While the Restructuring Committee is looking for appropriate reductions in the Faculty of Arts and Sciences, the University is examining every other component of the expense base to see where reductions can best be made. In the current planning process significant cuts (on average 22%) have been proposed in the central support of those professional schools that depend upon it. That support provides approximately one-quarter of their total program budgets. In addition, the increase in that support will be held to the rate of inflation, effectively further reducing it by about 1.5% annually over the next decade, requiring those schools either to increase other sources of income or to reduce their programs over that period.

The self-supporting professional schools will be expected to maintain their programs within their own anticipated resources. Their plans take different forms, depending upon whether the school's needs are primarily in programs or facilities. The Law School, for example, is facing capital renovation expenditures that will require constraints on its programs and a significant increase in its fund-raising over the next decade. Planning in the School of Organization and Management focuses on the development of incremental income to replace the use of reserves and to deal with substantial costs of deferred maintenance.

The School of Medicine has completed its own long-range plan, which includes significant reductions in many areas. That school is relatively underendowed and very dependent on income from grants and contracts and clinical income, so its plans must be extremely flexible. The school's plan includes only modest increases in income for scientific research and training. Revenues from medical practice and patient care are still expected to be the fastest growing sources for the school, but year-to-year increases are expected to decline over the decade. Projected growth in the faculty is expected to average between 1% and 2% each year. The administrative staff is expected to decline by almost 7% over the ten-year period. The School of Medicine, which represents 40% of the University's budget but only about 15% of its space, expects to add 170,000 gross square feet of program space mostly for laboratory and laboratory support. It is planning a capital expenditure program of approximately \$226 million over the decade for laboratory space for the clinical sciences, the building restoration program, and a patient-parking garage.

University-wide, strategies are being developed to reduce the number of staff and administrative services by a further 15%, in addition to the \$8 million in budgeted reductions made in some administrative and student support services over the past two years. In the collective bargaining that is taking place during this academic year, the

University must ensure that, as a percentage of the University's budget, the resources devoted to the two bargaining units do not increase. Ways to contain the increasing costs of health care, including the current retiree health programs are also being explored, in order to control the extraordinary rate of growth in this expense.

Reductions in the current projections for staff and faculty salary increases could also be contemplated. This option would have a major effect on the budget, but to make that choice without observing a slowing in the growth rate of competitive salaries would be to retreat from one of the stated priorities of the institution. Similarly, planning assumes that the current financial aid policies will remain in place and that the percentage of students receiving aid will continue at present levels.

The base projection assumes that most expenses for goods and services will grow at the rate of inflation for that type of expense. For most non-compensation costs, that rate is the general inflation rate, with higher assumptions for medical services, library acquisitions, and radioactive waste removal. Because the University has virtually no control over the inflationary effect on these expenses, it is unrealistic to expect significant reductions by category, but some savings in these areas will result indirectly from targeted reductions in programs.

In the base projection, centrally managed operating expenses are expected to increase at an unsupportable 7.7% annually during the next five years. Given the total amount of expendable revenues the University can now realistically anticipate, it is clear that spending at this level would be impossible. In broad terms, after applying all of the most aggressive plausible strategies for increasing the potential revenue for the University, the growth of unrestricted University revenues during the 1990s might be increased to about 6.6% annually. To eliminate the current deficit of \$8.8 million and repay any further deficits that may be required in the next few years, expenses over the decade may not grow

at a rate greater than 6.2% annually on average. Obviously, some portions of the University's budget (e.g., security and debt service) must grow at rates higher than the rate of revenues. Other high priority areas might have to grow less rapidly than the anticipated growth of revenues -- perhaps closer to the anticipated general inflation rate (4.5%). Finally, support to the professional schools, museums, auxiliary services, and general administration will have to grow at varying rates that are even lower than inflation. Various plans to accomplish this are currently being studied, and the deans of the professional schools and the directors of the major University support units have been given preliminary targets reflecting these differential growth rates and asked to develop ten year plans that bring their programs into conformity with these reduced levels of growth.

The primary question facing Yale is how large an academic program the institution can sustain if it is to meet its highest priorities over the next decade. It is clear that for some time Yale has effectively been living beyond its means, even without fully addressing its capital needs. The financial plan finally adopted must bring the major components of the University budget into a lasting balance. To accomplish this, it seems clear that the University will need all of the reductions it is currently investigating, or failing those, others equally large. The most important goal of this work must be to ensure that Yale will emerge from the decade strong and competitive, both academically and financially. That goal is realistic, but reaching it will require the effort, determination, and cooperation of the entire Yale community.

CONCLUSION

Yale's current financial condition is fundamentally sound, but the University is burdened by an expense base that is larger than can be sustained by the available resources and a capital renovation need that will require higher levels of annual expenditure. The endowment has experienced healthy growth for more than a decade, and the University's investment and spending policies have allowed those assets to keep pace with the expenses of the programs they support. Yale's alumni are perhaps the most generous and loyal supporters of any institution of higher education in the nation. The faculty is very strong and well supported by federal research agencies. Salaries and benefits across the entire University are at competitive levels. The capital renovation program has started well. But given the slowing of growth of all Yale's revenue sources, the recent trend of expenses outpacing revenues, the higher than inflationary costs that the University expects, and the need to address overdue capital renovation projects, the University must develop an effective plan to bring its expense base within its means.

No long-term plan is yet in place, and more conversations and consultation will have to occur during much of this academic year before such a plan can be completed. Currently, the University is considering possible ways to increase the revenue stream over the next decade. As has been discussed, options under review include a careful evaluation of the endowment spending policy to determine whether, given the changed nature of the investment assets, the University should increase somewhat the target rate of spending. The fund-raising campaign has set very high goals and has plans to divert a large fraction of gifts to capital maintenance, thus reducing the projected cost of interest and amortization in the operating budget. Appropriate committees will also look at ways that income from Yale College tuition might be increased.