

Discussion Paper No. 15

Williams Project on the Economics of Higher Education
Denison Gatehouse
Williams College
Williamstown, MA 0 1267

Organizing Economic Information for Colleges and Universities
An Alternative to Fund Accounting

Gordon C. Winston
Williams College

DP-15
May 1994

© May 1994 (Gordon Winston)

Note: This paper is intended for private circulation and should not be quoted or referred to in publication without the permission of the authors.

ORGANIZING ECONOMIC INFORMATION FOR COLLEGES AND UNIVERSITIES:

An Alternative to Fund Accounting

Gordon C. Winston¹

Williams College

The financial accounts of a college or university do not report economic information, as one would expect, for the institution as a whole. Instead, the college is divided up into separate activities and a separate set of financial accounts -- income statement and balance sheet -- is reported for each of those activities alone. Each is treated as if it were a separate firm [Garner]. Often-complex loans and transfers between those “firms” are recorded in each set of accounts. The system is called “fund accounting.” Eight or nine fund accounts and their interwoven transfers typically make up the annual financial statement for even a small and simple college.

Fund accounts have come to remind one of the old saw about the weather -- that everyone complains but no one does anything about it.² This paper describes the results of a five year effort to

¹ The structure of this analysis was developed during 1986-8 and given an important shot of practicality during my stint as Provost at Williams from 1988 to 1990. The support of the Andrew W. Mellon Foundation through its support, in turn, of the Williams Project on the Economics of Higher Education is gratefully acknowledged. William Bowen, Shaun Buckler, Keith Finan, George Goethals, David Healy, Robinson Hollister, George Keller, Duncan Mann, Charles Mott, Saeed Mughal, Will Reed, Joseph Rice, Morton Schapiro, David Schulte, and Winthrop Wassenar gave me valuable insights into these issues with considerable improvement in the quality of the analysis and understanding. I’m especially indebted to Harold Bierman, Roger Bolton, David Booth, Anne MacEachern, and Michael McPherson. Needless to say, I did not take all of their good advice.

² That is not quite accurate. Almost 20 years ago, Bierman and Hofstedt showed how misleading conventional budget deficits can be, using an analysis similar in some ways to that of this paper. Their effort got them an Andy Rooney segment on CBS, a front page Wall Street Journal article titled “Ten Eastern Colleges Accused of Crying Wolf In Reporting Deficits: Two Cornell Accounting Profs

organize the basic economic information about a college's performance in a different and more useful way. The result is a set of "global accounts" that present an *encompassing* -- all-inclusive, complete, integrated -- view of a college's economic activities and status. It's the kind of information essential to the governance of the college; the kind needed by the Board of Trustees, a faculty oversight committee, the top administrators. It describes the economic effects of a year's activities and most specifically their effect on the college's real wealth. The structure of the global accounts is the antithesis of that of the fund accounts that *divides* a college into a set of discrete -- self-contained, balkanized -- accounting entities. Global accounts bring information about the whole of the college together. Their aim is to be accurate, clear, and accessible to those who aren't steeped in fund accounting.

FUND ACCOUNTS

Fund accounting has a long and honorable tradition of service to government and nonprofit institutions and there are still important questions that only fund accounts -- or something like them -- can answer. The question addressed in this paper is the inadequacy of fund accounts to provide the sole or *primary* way to frame economic information for colleges and universities. The main problems with using fund accounts as the primary way of describing the economic performance of colleges and universities appear to be these -- they are clearly related and all derive from balkanization of the college's activities:

1. Fund accounts obscure an overall, global understanding of an institution's economic performance
2. Fund accounts are very hard to read and understand -- *inaccessible* without a significant investment of time -- with their mass of detailed information repeated separately for each fund and the often complex transfers and interactions among funds.

Contend the Schools Conceal Gains in 'Financial Condition'" and strenuous objections from comptrollers and presidents. But there has been little lasting effect.

3. One result of balkanization and inaccessibility is a focus of attention on understandable information even though it is *partial* and may be *marginally relevant* or even misleading, like operating budget deficits, or endowment wealth, or an endowment payout rate. The operating budget often leaves out a third or more of all current economic activity, budget deficits or surpluses are easily manipulated, and the endowment (and quasi-endowment) is only a fraction of total wealth in even the best endowed schools.³

4. A worrisome result would appear to be an inherent *temptation* -- *usually* resisted but always present -- *to present misleading information*. It may happen unintentionally. But funds are potential shells that invite shell games because their complexity induces some parts of the accounts to be ignored while other parts are given unwarranted attention. In moving \$5 million of current spending off the operating budget in the 1980's, for instance, Williams markedly reduced the apparent, but not the actual, growth of its operating expenditures; Carleton reported large current expenditures in their endowment fund instead of the current fund; Swarthmore noted its forty years of exactly balanced operating budgets,⁴ apparently achieved by transferring to the budget, after the fact, whatever was needed to cover operating expenses; MIT and Harvard followed the same convention in the 1970's [Bierman and Hofstedt].

5. It is important for the broader understanding of higher education that fund accounting *reduces comparability* among schools and even for a single school over time.

The original rationale for fund accounts in colleges was that they made it easier to monitor performance in specific areas supported by outside agents, by donors or governments who gave funds to the college for restricted purposes and needed to know if those purposes were being well served and managed.⁵ But while that stewardship role remains, it doesn't justify the use of fund accounts as

³Winston, 1988.

⁴"The 1986-87 fiscal year was the fortieth consecutive year in which the College operated with a balanced budget." [Swarthmore College, 1987. p. 17]

⁵ "In the absence of [the] implicit regulator [of profits], regulation of the allocation and utilization of financial resources of nonbusiness organizations is often achieved by the imposition of stringent controls..legally imposed..or..imposed through formal action of the governing board... [and] also.. .directly.. .by the individual or groups that contribute such resources.. .the donor.. .In order

the primary way of organizing economic information. Efforts to make fund accounting serve purposes of both stewardship and governance -- by using ratio analysis, for instance [Chabotar, 1989] -- have been only partly successful since they retain the shortcomings of fund account data. On the other hand, global accounts that define the context and inform the governance of a college will always need to be complemented by sub-accounts, fitted within that inclusive **global** reporting, that deal with the more detailed information essential to management and that identify restrictions on the use of funds.

GLOBAL ACCOUNTS

The basic structure of the global accounts is simple. For a year's economic activity, three elemental economic facts are reported:

1. How much the college took in, in total, from all sources.
2. What it did with that money.
3. The effect of these on the institution's real wealth.

That is the essential framework of global accounts.⁶ What is centrally important is that they completely encompass the institution's activities: no flow or claim between the college and an outside agent -- of income or expenditure or saving or assets or liabilities -- should be left out. And no financial flows or claims simply between funds should be included.

The hope in constructing global accounts, initially, was that they would only **reorganize the** economic information already reported in the fund accounts. Global accounts were derived from audited, published information, largely by combining fund activities and eliminating double counting

to account for these legally imposed, externally imposed, and self-imposed restrictions or limitations.. nonbusiness organizations have generally adopted the concepts of fund accounting.” [Harried, **et al**, 1985, p.722]

⁶ It is also the underlying framework -- often honored in the breach -- of the familiar Income Statement and Balance Sheet.

among them [Winston, 1988] And that worked, at first. Indeed, a major question was whether the approach that generated global accounts from Williams' published fund accounts would work, too, for other schools -- a question that was answered when Duncan Mann and I were able to create global accounts for Wellesley, Carleton, Swarthmore, and, for contrast, the State University system of New York [Winston-Mann, in preparation]. The result was an accounting of the year's *total* income, *total* current spending, and *total* real financial saving -- the change in financial wealth.

But not all wealth. It has become increasingly clear that global accounts that simply reorganize existing information create a useful set of *global financial* records that monitor real financial wealth, but they share the shortcoming of the fund accounts in being inadequate to the incorporation of *physical capital wealth*. Neither one can account for all of an institution's wealth: at Williams, for example, they ignore more than half of its \$645 million of net worth.

So the set of genuinely *global* accounts presented here, while still heavily dependent on a reorganization of published information, augments those data with a more realistic treatment of land, plant, and equipment (a treatment very much in the spirit of the current literature on capital planning in colleges [Dunn, 1989; Probasco, 1991]). For some potential users, these full global accounts may go too far -- not everyone is ready to monitor *all* of his institution's wealth. They can retreat to the halfway house of *global financial* accounts, a system that is no worse than conventional accounting in its neglect of capital wealth and is a whole lot better in dealing with the other problems of fund accounting noted above. So considerable improvement lies in using the global financial accounts, even if they are importantly incomplete. (Table 1 is repeated in the appendix as Table 1-A to show the same college in the abbreviated form of a *global financial* account. But the rest of the text will deal with the fully global accounts that include all institutional wealth.)

In a significant and encouraging recent development, Harvard's new annual *Financial Report*, published in March of this year, treats the physical capital stock much as described below -- even though that increased realism raised their reported operating expenses by \$77 million and gave them a \$42 million budget deficit [Harvard, 1992]. Harvard's decision not only reduces the risk to other schools of adopting these innovations in reporting economic information, but it indicates another way for an institution to move *toward* fully global accounts without embracing them all at once.

A caveat, before describing the global accounts in detail. Their application is more immediately appropriate to most *private than* to most *public* institutions. The reason, of course, is the often-Byzantine arrangements of responsibility, ownership, and governance that have grown up between public colleges and state and local agencies, arrangements that can affect, *inter alia*, ownership of the school's capital stock, responsibility for tuition levels, for salaries and fringe benefits, and even control over the use of any endowment wealth. So the scope of responsibility and control may sometimes be very different from that implied by these accounts. It remains, however, that global accounts or something quite like them are essential to public institutions if anyone is to know the real costs of public education and the effects of a state's policies on its educational wealth.

How the elements of global accounts work to form a coherent system of information will be clearer if they are embedded in a concrete example, so two years' data are presented in Table 1 below.⁷ Consider the components in turn.

a. College Income

The income elements in Table 1 are fairly straightforward at a small school, but a few comments are useful, nonetheless. The list of income sources is exhaustive: all income flowing into the college during the year is included, whether it comes from students,⁸ donors, government, borrowers of the college's wealth, or purchasers of services from the college. Gift and Grant Income in Table 1 is separated according to donors' wishes in order to recognize the fact that part of gift income is intended to *expand the* college's wealth and that that part is potentially different from gifts that donors intend should be used at the discretion of the college. Asset earnings include interest, dividends and capital gains or losses (whether realized or not⁹). Auxiliary income, in a small liberal

⁷These are similar to *historical* data from Williams' published sources so no legal issues are raised by their use here. In the description of an economic *plan* below, pains are taken to present transparently unrealistic and uninformative planning parameters to illustrate only the structure of the plan and nothing of Williams' expectations or intentions.

⁸ Tuition and fee income in these accounts is gross. An alternative would leave institutional student aid out of both income and expenditures and report as income only net tuition and fees.

⁹While this is logically necessary because Williams accounts its financial assets at market value, it would be desirable even if they didn't.

TABLE 1
GLOBAL ACCOUNTS

	1989- 1990	1990-1991
	\$	\$
1. COLLEGE INCOME:		
TUITION AND FEES	29,262,691	32,543,540
GIFTS AND GRANTS:		
To Endowment	7,066,669	8,744,806
To Plant	1,016,397	713,124
All Other	12,664,824	13,951,045
ASSET INCOME:		
Interest & Dividends	17,039,521	15,859,257
Appreciation	18,582,670	6,873,486
SALES, SERVICES & OTHER	1,950,970	2,724,059
AUXILIARY INCOME	11,599,559	11,862,813
TOTAL COLLEGE INCOME	99,183,301	93,272,130
2. CURRENT EXPENDITURES:		
OPERATING BUDGET EXPENDITURES	62,425,303	66,924,329
OTHER CURRENT EXPENDITURES	6,304,914	5,634,728
less CURRENT ACCT MAINTENANCE	703,276	642,167
TOTAL CURRENT EXPENDITURES	68,026,941	71,916,890
3. ADDITIONS TO CAPITAL STOCK:		
INVESTMENT IN NEW PLANT	9,334,326	2,310,285
less DEFERRED MAINTENANCE		
REAL DEPRECIATION	7,500,000	8,097,195
less MAINTENANCE SPENDING:		
In Current Account	703,276	642,167
In Plant Fund	3,477,560	4,639,692
TOTAL DEFERRED MAINTENANCE	3,319,164	2,815,336
TOTAL ADDITIONS TO CAPITAL	6,015,162	(505,051)
4. OPERATING COSTS:		
CURRENT EXPENDITURES	68,026,941	71,916,890
REAL DEPRECIATION	7,500,000	8,097,195
TOTAL OPERATING COSTS	75,526,941	80,014,085
5. WEALTH (EOY):		
FINANCIAL WEALTH:		
Assets	346,203,972	358,726,081
less Liabilities	50,596,648	49,355,661
NET FINANCIAL WEALTH	295,607,324	309,370,420
[Endowment Value]	[333,553,551]	[341,572,081]
PHYSICAL CAPITAL WEALTH:		
Replacement Value	323,887,799	341,438,861
less Accumulated Deferred Maintenance	3,319,164	6,290,686
NET PHYSICAL WEALTH	320,568,635	335,148,175
NET WORTH	616,175,959	644,518,595

arts college, consists largely of student charges for room and board; for a university, that line would be both larger and more complicated as would “Sales, services, and other,” the catchall income line here.

b. Current Expenditures

Current expenditures in the global accounts is both a more and a less inclusive category than “spending from the current fund,” in fund accounting: it includes **all** of current expenditures and it excludes maintenance spending. Current expenditures are included whether they appear within the operating budget, elsewhere in the current fund, the capital budget, the endowment fund, or somewhere else in the fund accounts. So in a global accounting, there is no opportunity to reduce the apparent level or growth of current expenditures by shifting some of them from a closely monitored area like the operating budget to a less scrutinized part of the accounts, like off-budget current fund or endowment fund spending. Spending on maintenance of the plant and equipment is excluded because it is not a current expenditure: it is spending that buys a durable good, the restoration -- “renovation and adaption”¹⁰ -- of the physical plant.¹¹

c. Additions to the Capital Stock

Predictably, the greatest departure from conventional reporting comes in the global accounts’ treatment of the physical capital stock -- since that aspect of college management and college wealth is so effectively neglected in fund accounting. The purpose of global accounting of the capital stock is to report its real value and record the effects of the year’s activities on that value. It serves, too, to inform a more accurate measure of the college’s operating costs that recognize both current spending

¹⁰ “Adaption” refers to action to offset depreciation due to obsolescence, in the trilogy described long ago by Terborg. The other sources are depreciation due to use and depreciation due to the **elements** -- **these** would be addressed by “renovation” spending as used here.

¹¹ Under present practice, some of renovation and adaption is embedded in current spending but the largest part of renovation and adaption spending typically appears as capital spending (labeled “investment in plant”) so usually only a relatively small adjustment to reported current spending is needed to purge total current expenditures of what is more accurately capital spending. At Williams, the maintenance part of current expenditures was only \$703,000 in 1989-90 and \$642,000 in 1990-91.

and real depreciation of the college's physical wealth.

Additions to the capital stock are simply the year's gross investment in new plant less any value lost through deterioration of the capital stock; the year's "deferred maintenance." Investment in new plant is uncomplicated: it includes all additions, acquisitions of new land, plant, and equipment, that will augment the capital stock. Deferred maintenance describes how much of the year's real depreciation of the capital stock was not repaired or renovated -- by how much the physical plant was allowed to deteriorate over the year.¹² Given depreciation, repairs and renovation reduce deferred maintenance. Deferred maintenance is not a money expenditure, per se, of course, but it is an expenditure of part of the capital stock -- consequent on time and its use in production -- and therefore a very real cost of the year's operations. Recognition of deferred maintenance is essential if the full effect of the year's activities on the value of the college's wealth are to be reported.

Real depreciation is an estimate of the potential amount of capital stock worn out or used up in the course of the year's operations -- the amount it would have depreciated had there been no repairs, renovation, or adaption. The emphasis on "real" depreciation is intended to distinguish this estimate of actual decline in the value of a capital stock over the course of the year, due to time and its use, from the more familiar but quite different matter of income tax liability in a for-profit firm: for many, that's what "depreciation" has come to mean, both in accounting and the public mind. In the global accounts it is pure economic depreciation.

Finally, maintenance spending, as noted above, is much the same as investment in new plant - it increases the value of durable capital through renovation and adaption -- so it is treated the same in the global accounts. To the small amount of such spending found in the current account is added that portion of a conventional "investment in plant" entry that in fact pays for renovation and adaption.

¹² "Deferred maintenance" is often used to describe the accumulated result of *past* failure to spend enough on maintenance to offset real depreciation. It reduces the value of a stock variable. Here we use the phrase, too, to describe a flow -- the extent to which this year's maintenance spending failed to offset this year's depreciation. As usual, this year's flow is an increment to the previously accumulated stock. Note that there is nothing necessarily pejorative about "deferred maintenance:" often it will be advisable to let physical capital depreciate.

In Table 1, real depreciation was estimated as 2.5% of the \$324 million capital stock with which 1990-91 started, or \$8.1 million.¹³ But since that was offset in 1990-91 by an estimated \$4.6 million of maintenance spending from the capital budget and another \$.64 million from the operating budget, deferred maintenance for the year is estimated, with rounding, as \$2.8 million.¹⁴ If current spending on maintenance had been \$8.1 million for the year, deferred maintenance would, of course, have been zero.

Additions to the capital stock are the net result of all this: investment in new plant is augmented by maintenance spending and reduced by depreciation. Additions to the capital stock will be positive when new plant and maintenance, together, are larger than real depreciation and *negative* when they are overwhelmed by the year's depreciation.

d. Operating Costs

In the global accounts, the year's total real operating costs are reported directly. To total current expenditures is added the year's depreciation of physical plant. So both forms of current spending are recognized as operating costs: current expenditures of the usual sort (less maintenance spending) and current spending of the capital stock through depreciation. Together, these describe the costs of the year's operations.¹⁵

¹³ The 2.5% is a conservative estimate. Economists [Schultz, O'Neill] have put it at 2% of the replacement value of plant and equipment per year, but estimates more carefully done by university capital planners get 1.525% for renovation and another 51.5% for adaption [Dunn, 1989] So the 2.5% used in the text and tables appears to be a conservative estimate of total depreciation and therefore of the spending needed to eliminate all deferred maintenance.

¹⁴ An important departure from the facilities planning literature lies in the fact that the global accounts *identify the* year's deferred maintenance without implying that it must therefore be prevented -- *recognition* of the cost of real depreciation is not the same thing as funding it. See Dunn, 1989, or Probasco, 199 1.

¹⁵ An issue lurks under the surface here: it is the classic neglect of the opportunity cost of capital as a real cost of production in colleges and universities (and nonprofits in general). So it is inaccurate to call "total current costs" total when they leave out, in the case of Williams, roughly \$30 million a year of real costs of production -- half again as much as is typically reported [Winston, 1991] Two facts might recommend that we continue to leave them out, however: (a) that the global accounts are concerned with the total flows of income and spending by the institution from and to outside agents so it may be permissible to neglect a real cost of production that is paid, by virtue of the college's

e. Wealth: Assets and Liabilities

Assets and liabilities, together, describe the state of a college's wealth at the end of each year. They are the college's *stock* variables. Two aspects of the reporting of assets in global accounts should be noted. One is a de-emphasis of the college's *endowment*: it shows up in Table 1 as a parenthetical notation sandwiched into the list of assets and liabilities that make up the college's wealth. The reason for this dismissive treatment is, simply, that the endowment has come erroneously to be seen as synonymous with "total financial wealth." While that was nearly true when colleges had very few non-endowment financial assets and, importantly, very little *debt* aside from some stray accounts payable, it is not true for many colleges now. Again, Williams' numbers are instructive. In 1989, its endowment had a market value of some \$307 million but the college also had another \$22 million in non-endowment assets¹⁶ for total financial assets of \$329 million [Williams, 1991] But those assets were encumbered by some \$51 million in debt. So the global accounts report *net financial wealth* of \$278 million -- total financial assets less total liabilities -- as the appropriate measure of the college's financial wealth. In 1990, the endowment was up to \$334 million but net financial wealth only to \$296 million.

The other important differences in global accounts' wealth reporting are that physical capital assets -- land and plant and equipment -- are (a) accounted for in current replacement values, rather than in the "book values" that the college originally paid for them and (b) adjusted for accumulated deferred maintenance. At Williams, which is an old school, one major instructional building with seven large classrooms and 13,000 square feet has a book value of less than \$50,000 and one faculty residence, not large but pleasant, is valued at \$850 [Williams, 1991] Most other campuses would offer similar examples of the distortions inherent in using book values. So while the estimates of replacement values inevitably involve some guesswork, they are clearly a whole lot closer to the truth

ownership of its capital stock, back to itself as imputed income, even though the resulting accounts seriously distort the costs of production, and (b) that, strategically it may be unwise to try to persuade people of the good sense of both the global accounts and an accounting of capital costs at the same time, though a more courageous effort would take on both at once.

¹⁶ Though they may differ from endowment assets in other ways, the defining characteristic of these financial assets is that they are "owned," within the college, by a fund other than the endowment fund.

than are historical values. Accumulated deferred maintenance is treated as an offset against the replacement value of the physical assets, leaving net physical wealth as the measure of value of the capital stock. Table 1 assumes that there was no deferred maintenance before 1989-90 so there is little immediate difference between capital assets and net physical wealth: but Table 4 shows that over a long period, deferred maintenance will significantly reduce the college's net physical wealth -- Yale's current pressing problem [New York Times February 3, 1992]

Because financial and physical assets and liabilities are measured in the same current value terms, they can be added together to report the college's *total wealth*, its total net worth. We are adding apples and apples. For many purposes, it is essential to distinguish between these two forms of wealth (and saving), but for others it is useful to recognize total wealth, regardless of its form. In Table 1, reporting a total 1991 wealth of \$645 million tells a very different and more complete story than either reporting an endowment of \$342 million or financial wealth of \$309 million.

f. Saving and Wealth: Flow-stock Relationships

The usual tautological accounting relationships between economic flows and stocks apply to global accounts: *saving* is the difference between income and spending over the period; any change in wealth between two dates equals and must be due to saving over that period; net worth (wealth) at the beginning of a period plus income minus spending has to equal net worth at the end of the period. Of course, real depreciation must be added to current expenditures to account fully for the year's total spending. This done, the stock-flow identity holds for total saving and wealth (net worth) as well as for financial and physical saving and wealth, separately. It is just as relevant to global accounts as it is to one's checking account.¹⁷

¹⁷ But with one awkwardness caused by the use of current market or replacement values for physical capital wealth in an inflationary environment. It lies in the need for an inflation adjustment to the value of the physical capital stock from year to year that doesn't here (as would be strictly appropriate) appear as nominal income. Strict adherence to the tautology would have to report the gain in physical asset value due to inflation as income (a physical capital gain) and then assign all of that income to saving, thereby justifying the increase in the nominal value of the capital stock. But since that portion of "income" is always "saved" and serves only to keep the replacement value of the capital stock in current dollars, the better choice seems to be to introduce an apparent violation of the stock-flow tautology rather than insert a large piece of funny money income explicitly into the body of the accounts. So the replacement value of physical capital reflects inflation within each year as

g. Operating and Capital Budgets

Operating and capital budgets are **embedded** in the global accounts, serving their managerial and planning functions but firmly in the context of the college's overall activities. So total operating expenditures -- the bottom line in an operating budget like that of Table 2 -- appears in the global accounts as a component of current spending (the largest). The effect, then, of operating budget performance on the college's wealth is incorporated immediately and directly. Though it is not made explicit here, the same is true for a capital budget which is mapped directly into the global accounts in the form of either new investment or as current spending on renovation and adaptation.

Note that while operating **expenditures** are reported in a line in the global accounts, operating **revenues** do not appear. The reason is, simply, that a college's decision on how much of its total income to allocate to an operating budget as "revenue" is an internal and essentially arbitrary one. That decision may be influenced by some accumulated tradition -- tuition and fees, for instance, may all go to the operating budget while only some gifts and a formulaic portion of asset income do -- but a college can, by assignment and transfer of its income to and from the budget, make a budget deficit or surplus virtually anything it wants it to be including, Swarthmore and others have shown, always exactly zero.¹⁸ Clarity is served, then, by focusing the global accounts on **spending** in the operating budget -- or more broadly, on all current spending -- as it encompasses an important set of activities in the college's educational enterprise. Attention to the arbitrary assignment of operating budget

well as showing the effect of net investment. As presented in Table 1, then, the tautology applies directly to financial saving and wealth but not to physical capital or total saving and wealth, unless inflation-induced "physical capital gains income" is included. (For the reader who'd like to confirm this relationship: the replacement value of the capital stock was \$300,000,000 in 1989 while the inflation rate was (rounded) 4.85% over 1989-90 and 4.71% over 1990-91 so the inflation adjustments in replacement value are \$14553,473 and \$15,240,777 in 1989-90 and 1990-91, respectively. With these, net physical wealth and net worth at the beginning of each period, plus saving and inflation adjustment will equal net physical wealth and net worth at the end of the period.)

¹⁸ In addition to Bierman and Hofstedt's brief fame for showing that budget deficits are often highly misleading -- when MIT reported a \$5 million deficit, they actually saved \$100 million; Princeton's reported \$1.5 million deficit went with \$15 1 million in saving; and Harvard's \$1.4 million deficit coincided with \$314 in saving, *inter alia* -- a number of others have tried to sound the same warning. William Nordhaus, economist and Provost at Yale from 1986 to 1988, for instance, recently cautioned against relying on operating budget deficits and surpluses because "actions are generally taken to produce a balanced budget." [Nordhaus, 1989, p. 10]

TABLE 2
GLOBAL ACCOUNTS: CURRENT EXPENDITURE COMPONENT

OPERATING BUDGET	1989-90	1990-91
	\$	\$
SALARY POOLS:		
Faculty	10,194,014	11,415,331
Administrative/Prof	6,029,465	6,315,789
Weekly	11,568,273	12,101,430
TOTAL SALARY POOLS	27,791,752	29,832,550
FRINGE BENEFITS	7,258,226	7,816,225
FINANCIAL AID	6,517,892	7,719,186
OTHER RESTRICTED SPENDING	2,720,321	3,505,429
MANAGERS BUDGETS	18,137,112	18,050,939
TOTAL OPERATING BUDGET EXPENSES	62,425,303	66,924,329
OTHER CURRENT EXPENDITURES	6,304,914	5,634,728
less MAINT. SPENDING IN CURRENT ACCOUNT	703,276	642,167
TOTAL CURRENT EXPENDITURES	68,026,941	71,916,890

revenues -- the result of shifting money between pockets -- and the consequent budget “deficits” or “surpluses” can be replaced by attention to real current spending and to actual performance relative to an approved spending plan.¹⁹

USING GLOBAL ACCOUNTS

The global accounts structure was first used to organize a historical review of Williams’ economic behavior in order to provide a descriptive context for evaluating present and future performance [Winston, 1988] It was done at the height of the public criticisms of cost growth in higher education when it was deemed wise to know how present performance compared with the past. We were able to generate long data series²⁰ on income levels and changes in its composition; on spending, its composition and real rates of growth; and on real saving and its distribution between financial and physical capital wealth. The result provided a foundation for economic policies.

But the broader significance of global accounts appears to lie in their ability to describe, monitor, and evaluate a college’s current economic performance and in the structure they give to economic planning.

a. Monitoring and Evaluating Economic Performance

The global accounts don’t force any specific criteria of performance evaluation on a college except implicitly in describing the *totality* of the school’s economic activity. But they do make it especially easy to monitor the effects on its real wealth of the college’s behavior and the economic circumstances it operates in: the difference between income and current spending is saving (or

¹⁹ Operating revenues are structurally a lot like a child’s allowance -- the part of family income the parents assign for her to spend. Whether or not she can get by on, or even save from, her allowance is not an uninteresting question or one always viewed with dispassion. But it would be a mistake of some significance if the parents (or their creditors) were to represent the child’s deficit or surplus on her allowance as a measure of the family’s economic fortunes for the week. So, in the context of higher education, a number of Princeton faculty members were vocally unimpressed with the University’s recent and much publicized operating budget deficits, convinced that there had to be more going on there than met the eye [Lyall, 1989] Global accounts make it clear that there was.

²⁰ Initially for the 30 years since Williams was a small, all-male, fraternity-centered college.

dissaving) and that, dollar for dollar, increases (or decreases) wealth. And global accounts make it easy to break that down to monitor, separately, the effects of college behavior on financial wealth and on physical capital wealth. There are good reasons why a governing board might consider a dollar saved in a liquid financial asset to be very different from a dollar saved in constructing or renovating a building -- both are saving, but their different forms carry quite different implications for future flexibility, costs, returns, and performance. Even at the level of total saving, a board may think it wise to maintain real wealth or to increase it or to spend some of it down.²¹ Or it may prefer only to monitor real wealth or income or spending or their components, rather than to define explicit policies in those respects. These are all decisions on which the structure of the global accounts is agnostic.

Using data from Table 1, Table 3 illustrates one sort of evaluative summary that global accounts can produce to describe, in the broadest terms, a college's performance for a year.²² Other summary data could be generated, but these are especially useful in informing broad questions of strategy and governance.

The first line of Table 3 -- saving, or the gain or loss of real wealth -- is, in a sense, "the bottom line" of the global accounts. It describes the change in total real wealth that results from the college's activities for the year, recognizing all its sources of income, all its expenditures on current account and new capital and maintenance, all the depreciation of its physical capital stock, and the contrary effects of inflation in eroding the real value of its financial wealth while increasing the nominal value of its physical wealth. In this fundamental measure, the fortunes of the college illustrated in Table 3 declined by some \$11 million between 1989-90 and 1990-91, from real saving of \$10.2 million to real dissaving of \$.7 million.

The next four lines of Table 3 address two of the many questions that might be asked about the year's total real saving. The first two lines describe the distribution of total real savings between

21 The four alternative objectives that Dunn described for endowment wealth are relevant in this broader context of total wealth: 1. protect its nominal value, 2. protect its purchasing power -- its real value, 3. have wealth grow as fast as operating expenses, or 4. increase wealth per student as fast as that of competing or peer institutions [Dunn, 1991. pp. 34-5].

22 The details of getting from Table 1 to Table 3 are included in an appendix table.

TABLE 3
GLOBAL ACCOUNTS
SUMMARY

	1989-90	1990-91
	\$	\$
1. SAVING - GAIN (LOSS) OF TOTAL REAL WEALTH:	10,171,785	(65,1974)
Gain (Loss) Of Real FINANCIAL Wealth	4,156,623	(146,923)
Gain (Loss) Of Real PHYSICAL Wealth	6,015,162	(505,051)
Gifts to Increase Real Wealth	8,083,066	9,457,930
Savings to Increase Real Wealth	2,088,719	(10,109,904)
2. INCOME	99,183,301	93,272,130
Real Growth Rate	-3.26%	-10.19%
3. SPENDING:		
Operating Costs	75,526,941	80,014,085
Deferred Maintenance	3,319,164	2,815,336
Investment in New Plant	9,334,326	2,310,285
Real Growth Rates:		
Operating Costs	4.51%	1.18%
Deferred Maintenance	36.27%	- 18.99%
Investment in New Plant	4.35%	-76.36%
4. SAVING: GAIN (LOSS) OF TOTAL REAL WEALTH	7,276,151	8,600,747
Using Smoothed Asset Income		

financial and physical wealth. Physical wealth fared better than did financial wealth in 1989-90 but had a slightly larger decline in 1990-91. The next two lines ask what would have happened to saving without the gifts that were targeted to increase wealth. Some of the increase in wealth on line 1 was the result of the explicit intentions of donors who gave the college money for the purpose of increasing its wealth so that component might well be separated out from any change in wealth, saving, that was due, instead, to the college's decisions and external circumstances during the year. Without the gifts to wealth (to endowment and plant) of \$8 and \$9 million in the two years, the college would have saved in other ways some \$2.1 million in the good year and lost a bit more than \$10 million in the bad one. Again, governing boards would differ in their evaluation of these facts: had the school's performance led to neither saving nor dissaving in those years, that might be considered good work by a board interested in real wealth maintenance while it would be considered poor performance by a board that wanted, say, to catch up to Amherst or Swarthmore in wealth per student. So again, the global accounts are agnostic on policy aims.

College Income is reported next in Table 3 in current dollars while its growth is reported in real terms, adjusted for inflation; together they monitor the flow of total resources into the school over the year.

Direct monitoring of costs and spending levels and their real growth, as presented in the third section of Table 3, is a response to the criticisms of higher education in the '80's and the conviction that real spending growth should be watched closely, both in detailed categories and broadly. Operating costs include both current expenditures and real depreciation as reported in Table 1. The year's deferred maintenance is reported as a separate line because of its usual neglect and its potential for causing serious long term mischief. A board might adopt the policy that deferred maintenance should always be zero (giving top priority to protection of physical plant, whatever it costs in other objectives) or it might feel that deferred maintenance is simply one important aspect of performance that needs to be monitored attentively -- a board might conclude that deferring maintenance, like any other reduction in saving, can sometimes provide money to do other, more important, things. Again, global accounts inform policy by defining required maintenance spending and showing the cost of not doing it. Investment in new plant describes only spending for new physical capital.

The last section of Table 3 addresses an evaluation problem for well-endowed schools that report their financial assets at market values and thereby incur potentially large variations in reported income through capital gains and losses caused by market fluctuations: year-to-year comparisons of global performance will be hard to interpret if major changes in asset market value have dominated the numbers. So in this last section of the table, the effect of the year's activities on the college's wealth are re-examined using a five year moving average of asset income instead of actual asset income for each year: that smooths out the volatile element while still reflecting its underlying changes in a subdued form. These data for 1989-90 and 1990-91 illustrate the effect nicely. Between the two years, the school's capital gains income fell by almost \$12 million so much of the striking difference in the effects of performance on real wealth between the two years was due to that sharp (and uncontrollable) decline in income and not, as it might first appear, to the way the college was run in the latter year. Indeed, the effect of operations on real wealth was, with smoothed income, better in the second year: without that abrupt decline in asset income, reductions in deferred maintenance and the growth of current spending would have increased saving by \$1.3 million in 1990-91.

b. The Global Economic Plan

Global accounts easily provide the framework for an economic planning model that has the same inclusive scope and the same ability to integrate detailed management sub-plans while showing the global economic implications of the school's intended behavior and anticipated circumstances. Tables 4 to 6 illustrate such a model. Table 4 is a basic Global Economic Plan; Table 5 is a sub-account giving more detail on planned current spending, "the operating budget;" and Table 6 gives the sort of evaluative summary data just described, here extended to include anticipated future performance over the period of the plan. All values are in current dollars with an assumed 5% inflation rate and past accumulation of deferred maintenance is arbitrarily set at zero at the beginning of 1989-90. All planned and projected values are rounded.

Two years of historical performance data -- 1989-90 and 1990-91 -- are the starting point for projections of both anticipated circumstances (inflation, asset market conditions, etc.) and planned college behavior (staffing, salaries, tuitions, resource allocation, etc.). The heart of a planning process is, of course, the thoughtful specification of these "planning parameters" -- projections of

TABLE 4
GLOBAL ECONOMIC PLAN
(Current Dollars - Inflation Rate 5%)

	1989-90	1990-91	PLAN PARAMETERS	PLANNED 1991-92	PLANNED 1992-93	PLANNED 1993-94	PROJECTED 2001-02
	\$	\$	\$	\$	\$	\$	\$
1. COLLEGE INCOME:							
<u>TUITION AND FEES</u>	29,262,691	32,543,540	6.0%	34,500,000	36,600,000	38,800,000	61,800,000
GIFTS AND GRANTS:							
To Endowment	7,066,669	8,744,806	\$9 m.	9,000,000	9,000,000	9,000,000	9,000,000
To Plant	1,016,397	713,124	\$1 m.	1,000,000	1,000,000	1,000,000	1,000,000
All Other	12,664,824	13,951,045	\$14 m.	14,000,000	14,000,000	14,000,000	14,000,000
ASSET INCOME:							
Interest & Dividends	17,039,521	15,859,257	6.0%	16,800,000	17,800,000	18,900,000	30,100,000
Appreciation	18,582,670	6,873,486	6.0%	7,300,000	7,700,000	8,200,000	13,000,000
SALES, SERVICES & OTHER	1,950,970	2,724,059	6.0%	2,900,000	3,100,000	3,200,000	5,200,000
AUXILIARY INCOME	11,599,559	11,862,813	6.0%	12,600,000	13,300,000	14,100,000	22,500,000
<u>TOTAL COLLEGE INCOME</u>	99,183,301	93,272,130		98,100,000	102,500,000	107,200,000	156,600,000
2. CURRENT EXPENDITURES:							
<u>OPERATING BUDGET EXPENDITURES</u>	62,425,303	66,924,329	On Table 5	70,900,000	75,200,000	79,700,000	127,000,000
OTHER CURRENT EXPENDITURES	6,304,914	5,634,728	On Table 5	6,000,000	6,300,000	6,700,000	10,700,000
less CURRENT ACCT MAINTENANCE	703,276	642,167	\$650,000	650,000	650,000	650,000	650,000
<u>TOTAL CURRENT EXPENDITURES</u>	68,026,941	71,916,890		76,300,000	80,900,000	85,800,000	137,100,000
3. ADDITIONS TO CAPITAL STOCK:							
<u>INVESTMENT IN NEW PLANT</u>	9,334,326	2,310,285	\$7 m. constant	2,100,000	2,100,000	2,200,000	2,600,000
less DEFERRED MAINTENANCE							
REAL DEPRECIATION	7,500,000	8,097,195	2.5% K-stock	8,500,000	9,000,000	9,500,000	14,600,000
less MAINTENANCE SPENDING:							
In Current Account	703,276	642,167	\$650,000	650,000	650,000	650,000	650,000
In Plant Fund	3,477,560	4,639,692	6.0%	4,900,000	5,200,000	5,500,000	8,800,000
<u>TOTAL DEFERRED MAINTENANCE</u>	3,319,164	2,815,336		3,000,000	3,200,000	3,300,000	5,200,000
<u>TOTAL ADDITIONS TO CAPITAL</u>	6,015,162	(505,051)		(900,000)	(1,000,000)	(1,200,000)	(2,600,000)

TABLE 4 continued

	1989-90	1990-91	PLAN PARAMETERS	PLANNED 1991-92	PLANNED 1992-93	PLANNED 1993-94	..	PROJECTED 2001-02
4. OPERATING COSTS:								
CURRENT EXPENDITURES	68,026,941	71,916,890	As Above	76,300,000	80,900,000	85,800,000	..	137,100,000
REAL DEPRECIATION	7,500,000	8,097,195	As Above	8,500,000	9,000,000	9,500,000	.	14,600,000
TOTAL OPERATING COSTS	75,526,941	80,014,085		84,800,000	89,900,000	95,300,000	..	151,700,000
5. WEALTH (EOY):								
FINANCIAL WEALTH:								
Assets	346,203,972	358,726,081		373,500,000	387,100,000	400,200,000	..	481,100,000
less Liabilities	50,596,648	49,355,661	\$50 m.	50,000,000	50,000,000	50,000,000	.	50,000,000
NET FINANCIAL WEALTH	295,607,324	309,370,420		323,500,000	337,100,000	350,200,000	..	431,100,000
[Endowment Value]	[333,553,551]	[341,572,081]	\$350 m.	[350,000,000]	[350,000,000]	[350,000,000]		[350,000,000]
PHYSICAL CAPITAL WEALTH:								
Replacement Value	323,887,799	341,438,861		360,600,000	380,800,000	402,000,000		617,000,000
less Accumulated Deferred Maintenance	3,319,164	6,290,686		9,600,000	13,200,000	17,200,000	.	66,200,000
NET PHYSICAL WEALTH	320,568,635	335,148,175		351,000,000	367,600,000	384,800,000		550,800,000
NET WORTH	616,175,959	644,518,595		674,500,000	704,700,000	735,000,000		981,900,000

TABLE 5
GLOBAL ECONOMIC PLAN: CURRENT EXPENDITURE COMPONENT

	1989-90	1990-91	PLAN PARAMETERS	1991-92	1992-93	1993-94	...	2001-02
OPERATING BUDGET	\$	\$		\$	\$	\$		\$
SALARY POOLS:								
Faculty	10,194,014	11,415,331	6.0%	12,100,000	12,800,000	13,600,000	...	21,700,000
Administrative/Prof	6,029,465	6,315,789	6.0%	6,700,000	7,100,000	7,500,000	...	12,000,000
Weekly	11,568,273	12,101,430	6.0%	12,800,000	13,600,000	14,400,000	...	23,000,000
TOTAL SALARY POOLS	27,791,752	29,832,550		31,600,000	33,500,000	35,500,000	. . .	56,600,000
FRINGE BENEFITS	7,258,226	7,816,225	6.0%	8,300,000	8,800,000	9,300,000	...	14,800,000
FINANCIAL AID	6,517,892	7,719,186	6.0%	8,200,000	8,700,000	9,200,000	...	14,700,000
OTHER RESTRICTED SPENDING	2,720,321	3,505,429	6.0%	3,700,000	3,900,000	4,200,000	...	6,700,000
MANAGERS' BUDGETS	18,137,112	18,050,939	6.0%	19,100,000	20,300,000	21,500,000	. . .	34,300,000
TOTAL OPERATING BUDGET EXPENSES	62,425,303	66,924,329		70,900,000	75,200,000	79,700,000	. . .	127,000,000
OTHER CURRENT EXPENDITURES	6,304,914	5,634,728	6.0%	6,000,000	6,300,000	6,700,000	...	10,700,000
less MAINT. SPEND. IN CURRENT ACCOUNT	703,276	642,167	\$650,000	650,000	650,000	650,000	...	650,000
TOTAL CURRENT EXPENDITURES	68,026,941	71,916,890		76,300,000	80,900,000	85,800,000	...	137,100,000

TABLE 6
GLOBAL ECONOMIC PLAN: SUMMARY
(Current Dollars • Inflation Rate 5%)

	PLAN PARAMETERS						
	1989-90	1990-91	1991-92	1992-93	1993-94	...	2001-02
	\$	\$	\$	\$	\$		
1. SAVING - GAIN (LOSS) OF TOTAL REAL WEALTH:	10,171,785	(65,1974)	(2,200,000)	(3,600,000)	(4,900,000)	..	(16,300,000)
Gain (Loss) Of Real FINANCIAL Wealth	4,156,623	(146,923)	(1,300,000)	(2,600,000)	(3,800,000)	...	(13,700,000)
Gain (Loss) Of Real PHYSICAL Wealth	6,015,162	(505,051)	(900,000)	(1,000,000)	(1,200,000)	...	(2,600,000)
Gifts to Increase Real Wealth	8,083,066	9,457,930	10,000,000	10,000,000	10,000,000	.	10,000,000
Savings to Increase Real Wealth	2,088,719	(10,109,904)	(12,200,000)	(13,600,000)	(14,900,000)		(26,300,000)
2. INCOME	99,183,301	93,272,130	98,100,000	102,500,000	107,200,000		156,600,000
Real Growth Rate	-3.26%	-10.19%	0.12%	-0.45%	-0.39%		0.03%
3. SPENDING:							
Operating Costs	75,526,941	80,014,085	84,800,000	89,900,000	95,300,000	..	151,700,000
Deferred Maintenance	3,319,164	2,815,336	3,000,000	3,200,000	3,300,000	...	5,200,000
Investment in New Plant	9,334,326	2,310,285	2,100,000	2,100,000	2,200,000	..	2,600,000
Real Growth Rates:							
Operating Costs	4.51%	1.18%	0.93%	0.96%	0.95%	.	0.93%
Deferred Maintenance	36.27%	-18.99%	0.40%	1.13%	1.02%	...	0.26%
Investment in New Plant	4.35%	-76.36%	-14.18%	-2.25%	-2.32%	...	-3.10%
4. SAVING: GAIN (LOSS) OF TOTAL REAL WEALTH	7,276,151	8,600,747	2,600,000	4,000,000	(2,000,000)	...	(17,100,000)
Using Smoothed Asset Income							
5. ACCUMULATED DEFERRED MAINTENANCE	3,319,164	6,290,686	9,600,000	13,200,000	17,200,000	...	66,200,000

future intentions, plans, and expectations. But in terms of the plan *structure* that is at issue here, after the college has decided on those planning parameters -- how it wants and expects the components of the accounts to change in the future -- a global economic plan will show the effects of that behavior on the college's real wealth over the period of the plan. It is, then, a "consistency-and-implications" model: the pieces have to fit together over any year and they have to fit together from one period to the next, satisfying the truism that wealth at the beginning of the period plus income less spending has to equal wealth at the end of the period -- each period's performance is anchored in the past year's and the projections are anchored in the most recent history. The result is neither an optimization model nor is in an equilibrium model. It can be made into a "long run financial equilibrium model" if a constant rate of growth of wealth is imposed, but that remains an option and not a characteristic. It is hoped that its more modest logical structure may well be of greater practical value than the more abstract alternatives in actual planning, administration, and governance. The global plan takes the concrete form of a Lotus spreadsheet that is easy to use to ask, repeatedly, the question "What will be the economic implications of the following behavior, now and in the future?"

The data in Tables 4 through 6 are based on Tables 1 through 3 but it is important that they carry no implication about future plans or projections for any actual school. They are illustrative only of the *structure* of the economic plan. To make that very clear, planning parameter values in these tables have been entered as caricatures -- most either as the constant rate of growth of 6% (nominal) or as a constant nominal quantity²³ -- with the hope that that high level of artificiality will make it starkly clear that these tables deal only with model structure and no privileged information is conveyed.

A cost of that artificiality, though, is that the numbers in these tables are less revealing of an actual planning exercise than they would be with more realistic parameter values. Nonetheless, they show that if a college, starting with the historical performance described in the first two columns, were to plan its spending and anticipate income as described by these rates and levels, it would wind up as described in the last four columns: it would see increasing yearly dissaving, loss of more real

²³In practice, three kinds of parameter values might be used to describe plans and projections: (a) rates of growth (constant or changing from one year to the next), (b) levels (constant in real or nominal terms or changing over time), and (c) functionally dependent parameters reflecting things like the way institutional need-based financial aid expenses depend on tuition decisions.

financial wealth than physical wealth, an increased underlying dissaving that is hidden in part by gifts intended to increase wealth, real income growth hovering around zero with real operating costs that are increasing modestly, declining real new investment and declining but still positive real deferred maintenance. If that pattern of behavior (and circumstances) continued until the academic year 2001-2, the college would find itself dissaving at an annual real rate of \$16 million, despite \$10 million a year in gifts intended to increase its wealth. Most of that dissaving would take the form of drawing down financial assets but there would still be an accumulated deferred maintenance of some \$66 million or a bit less than ten percent of its capital stock (all in 2002 dollars). A governing board, looking at these results, would have to conclude that the projected behavior under the projected circumstances isn't sustainable. Elimination of asset income volatility makes a significant difference in the evaluation of short run performance, but, predictably, it has a declining effect on the evaluation of smoothly projected future performance. So the plan reveals that something more fundamental than asset income volatility is producing unsustainable results.

Given the artificiality of these numbers, the results of these plan projections probably don't deserve much more discussion, but they should serve to give a sense of the kind of strategic information that is generated by the global plan: it is, most generally, a description of the future resource implications of the behavior and circumstances envisioned by the college.

PREMISES AND PROMISE

The premise of the global accounts has been that a college's administration or governing board wants to have meaningful and accessible economic information about the college's performance. But that may sometimes be naive. The fact that the operating budget can be a political document is often acknowledged and usually described as regrettable, but it is also of considerable value in avoiding questions and discussions that might be time consuming, tedious, and challenging to administrative decisions. The fact that fund accounts can selectively hide or reveal transactions is often convenient. So is the emphasis on endowment wealth, as though there were no other kind of financial assets and no offsetting debt. And so on. But the difficulty with the manipulation of economic information or selective optimism in its reporting is the old one that plagues any departure from scrupulous efforts to report the economic facts -- that the first victim of distorted economic information is often the author of those distortions. It is simply hard to manage a place if you don't

know what's going on. This is a lesson learned and re-learned in contexts ranging from the Soviet planned economy to the current gyrations of state and city budgets in New York. Unfortunately, as the government parallel suggests, governors and mayors change and so do college administrations, increasing the temptation those transients face to keep their economic numbers looking good and let the sober facts show up eventually, "but not on my watch."

But more positively -- and more importantly -- global accounts appear to represent a marked improvement over fund accounting both in informing the long run policy issues that confront colleges and universities and in monitoring their most basic economic performance. The information these accounts present has proven to be the sort that induces and encourages the discussion of strategic fundamentals, of issues that are basic to the governance of the institution, issues that take the form "If we keep on doing what we're doing, or what we're planning to do next year, what will happen to our economic wealth?" Such elemental questions are not so readily induced or addressed by the kind of economic information now readily available to colleges and universities.

Global accounts describe the effect of a year's activities -- actual or planned -- on all of the college's real wealth, on the distribution of that wealth between financial and physical assets, on deferred maintenance, on levels and real growth of income from its various sources and of spending on its various objectives; this, in an environment of inflation with its opposing effects on the values of financial and physical wealth. Global accounts describe the whole of an institution: their data are designed to avoid omissions and partial truths, to be clear and accessible, and to direct attention to the most basic economic implications of a college's behavior.

REFERENCES:

Bierman, Harold, Jr., and Thomas R. Hofstedt. "University Accounting (Alternative Measures of Ivy League Deficits)," Non-Profit Report May, 1973, 14-23.

Chabotar, Kent John. "Financial Ratio Analysis Comes to Nonprofits," Journal of Higher Education, Vol 60, No. 2 (March/April, 1989), 188-208.

Dunn, John A., Jr. Financial Planning Guidelines for Facilities Renewal and Adaption. Ann Arbor: The Society for College and University Planning; 1989.

DUM, John A., Jr. "How Colleges Should Handle Their Endowment," Planning for Higher Education, Vol 19, No. 3 (Spring, 1991).

Garner, C. William. Accounting and Budgeting in Public and Nonprofit Organizations. San Francisco: Jossey-Bass Publishers, 1991. Chapter 2, "The Role of Funds."

Harried, Andrew A., Leroy F. Imdieke and Ralph E. Smith. Advanced Accounting, 3rd ed. New York: John Wiley and Sons, Inc.; 1985.

Harvard University, Financial Report to the Board of Overseers of Harvard College. Cambridge: Harvard University, 1992.

Lyll, Sarah. "Strife Over Style and Substance Tests Princeton's Leader," New York Times, December 4, 1989, B1.

Nordhaus, William. "Evaluating the Risks for Specific Institutions," Yale University, March 14, 1989.

O'Neill, June. Resource Use in Higher Education: Trends in Output and Inputs 1930 to 1967. A Technical Report Sponsored by the Carnegie Commission on Higher Education. Berkeley: The Carnegie Commission on Higher Education; 1971.

Probasco, Jack. "Crumbling Campuses: What Are the Real Costs?" Business Officer, Vol. 25, No.5 (November, 1991), 48-51.

Schultz, Theodore W. "Capital Formation by Education," Journal of Political Economy, Vol68, No. 6 (December, 1960).

Swarthmore College. "The Treasurer's Report 1986-87," in The President's Report, 1986-87. Swarthmore: Swarthmore College; 1987.

Williams College. "The Treasurer's Report 1990-91, " Williamstown, MA: Williams College, 1991.

Winston, Gordon C. and Duncan Mann. Global Accounts: Reorganizing Economic Information for Colleges and Universities, in preparation

Winston, Gordon C. "Why Are Capital Costs Ignored By Colleges and Universities and What Are the Prospects for Change?" Williams Project on the Economics of Higher Education, Discussion Paper No. 14, July, 1991.

Winston, Gordon C. "Total College Income: An Economic Overview of Williams College, 1956-57 to 1986-87," Williams College, April 10, 1988.

Appendix A
TABLE 1-A
GLOBAL FINANCIAL ACCOUNTS

	1989-1990	1990-1991
1. COLLEGE INCOME:	\$	\$
<u>TUITION AND FEES</u>	29,262,691	32,543,540
<u>GIFTS AND GRANTS:</u>		
To Endowment	7,066,669	8,744,806
To Plant	1,016,397	713,124
All Other	12,664,824	13,951,045
<u>ASSET INCOME:</u>		
Interest & Dividends	17,039,521	15,859,257
Appreciation	18,582,670	6,873,486
<u>SALES, SERVICES & OTHER</u>	1,950,970	2,724,059
<u>AUXILIARY INCOME</u>	11,599,559	11,862,813
<u>TOTAL COLLEGE INCOME</u>	99,183,301	93,272,130
2. CURRENT EXPENDITURES:		
<u>OPERATING BUDGET EXPENDITURES</u>	62,425,303	66,924,329
<u>OTHER CURRENT EXPENDITURES</u>	6,304,914	5,634,728
less CURRENT ACCT MAINTENANCE	703,276	642,167
<u>TOTAL CURRENT EXPENDITURES</u>	68,026,941	71,916,890
3. CAPITAL EXPENDITURES:		
<u>INVESTMENT IN NEW PLANT</u>	9,334,326	2,310,285
<u>MAINTENANCE IN CURRENT ACCOUNT</u>	703,276	642,167
<u>MAINTENANCE IN PLANT FUND</u>	3,477,560	4,639,692
<u>TOTAL ADDITIONS TO CAPITAL</u>	13,515,162	7,592,144
4. FINANCIAL WEALTH (EOY):		
<u>ASSETS</u>	346,203,972	358,726,081
[Endowment Value]	[333,553,551]	[341,572,081]
less <u>LIABILITIES</u>	50,596,648	49,355,661
<u>NET FINANCIAL WEALTH</u>	295,607,324	309,370,420
5. FINANCIAL SAVING:		
<u>TOTAL FINANCIAL SAVING</u>	17,641,198	13,763,096
<u>BREAKEVEN SAVING (Inflation Offset)</u>	13,484,575	13,910,019
<u>REAL FINANCIAL SAVING</u>	4,156,623	(146,923)
<u>" NET OF GIFTS TO ENDOWMENT</u>	(2,910,046)	(8,891,729)

Appendix B
PERFORMANCE CALCULATIONS

		1989-90	1990-91
		\$	\$
SAVING - GAIN (LOSS) OF REAL WEALTH:		10,171,785	(65 1,974)
TOTAL REAL SAVING:	$Y - X - [hK^*(t-1) - (mc + mk)] + iK^*(t-1)$	38,209,833	28,498,822
BREAKEVEN SAVING:	$iNFW(t-1) + iK^*(t-1)$	28,038,048	29,150,796
<hr/>			
Gain (Loss) of Real Financial Wealth: Real Saving		4,156,623	(146,923)
Total Financial Saving:	$Y - X - K$	17,641,198	13,763,096
Breakeven Saving (Inflation Offset):	$i(NFW)(t-1)$	13,484,575	13,910,019
Gain (Loss) of Physical Wealth: Real Saving		6,015,162	(505,051)
Total Physical Capital Saving:	$K - [hK^*(t-1) - (mc + mk)] + iK^*(t-1)$	20,568,635	14,735,726
Breakeven Saving (Inflation Offset):	$iK^*(t-1)$	14,553,473	15,240,777
<hr/>			
COMPOSITION OF SAVING:			
Financial Saving		4 1%	23%
Physical Saving		59%	77%
<hr/>			
WITH SMOOTHED ASSET INCOME			
SAVING - GAIN (LOSS OF TOTAL REAL WEALTH): Smoothed		7,276,151	8,600,747
TOTAL SAVING		35,314,199	37,75 1,543
Gain (Loss) of Real Financial Wealth		1,260,989	9,105,798
Total Financial Saving: Smoothed		14,745,564	23,015,817
<hr/>			
SPENDING:			
DEFERRED MAINTENANCE:	$hK^*(t-1) - (mc + mk)$	3,319,164	2,815,336
Real Yearly Growth		36.27%	- 18.99%
CURRENT EXPENDITURES:	$X - (mc + mk)$	68,026,94 1	71,916,890
Real Yearly Growth		4.72%	0.97%
OPERATING COSTS:	$X - (mc + mk) + hK^*(t-1)$	75,526,941	80,014,085
Real Yearly Growth		4.51%	1.18%
INVESTMENT IN NEW PLANT		9,334,326	2,310,285
Real Yearly Growth		4.35%	-76.36%

K = new investment; K^* = replacement value of capital stock; h = depreciation rate;
 mc and mk = maintenance spending in Current and Capital-Budget, respectively (both included in X);
 i = inflation rate; Y = income; X = current spending = (current expenditures + mc + mk).
 $(t-1)$ = end of previous period.