

Discussion Paper No. 28

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

**The Economic Performance of Williams, Amherst,
Swarthmore, and Wellesley 1988-9 to 1992-3:
*A Global Comparison***

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DP-28
September 1994

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September, 1994

THE ECONOMIC PERFORMANCE
OF
WILLIAMS, AMHERST, SWARTHMORE, AND WELLESLEY
1988-9 TO 1992-3:
A Global Comparison

Valerie Weber and Gordon Winston*

This paper uses global accounting to compare the economic performance of four highly competitive colleges over the five year period from 1988-9 to 1992-3. The schools -- Amherst, Williams, Swarthmore, and Wellesley -- were ranked (in that order) as the top four national liberal arts colleges in the most recent US News *and World Report*¹. So they represent a closely matched sample.

There is no suggestion that these schools are typical of US higher education. On the contrary -- as will be amply apparent in the numbers below -- they are wealthy and deeply privileged institutions. Yet their use for this kind of study is appropriate because

* This study was undertaken for the Williams Provost's Office during the summer of 1994 with the resources of the Williams Project on the Economics of Higher Education. It therefore benefited importantly from support of the Andrew W. Mellon Foundation. Ethan Lewis and Ivan Yen were of considerable help.

¹ September 26, 1994

they illustrate the power of global accounting to identify and monitor the most basic dimensions of a college's economic performance and economic strategy -- total income, current spending, real saving, and wealth -- that define the economic health of rich and poor schools alike. Wealthy schools, what is more, provide a stronger test of any generalized approach to performance monitoring simply because their economic fortunes are sensitive to most of the major forces that affect higher education -- to pressures on current spending, asset earnings, tuition income, government policy, and the ability to attract gifts. Finally, very similar schools are shown here to reveal significant differences in their economic circumstances, histories, and strategies, despite the fact that their "products" are deemed quite similar.

Real Saving

The 'bottom line' in an evaluation of a year's economic performance in global accounts is a college's saving. Saving is simply total income less total current spending; it is what is left over for future use from a year's resources. Saving is usually positive but it will be negative when the institution (or the nation or the family, since this is all quite general) spends more in a year than it takes in income: that imbalance is made possible by drawing down on net wealth from the past. And it's important in our context that institutional saving includes not just increased financial wealth, but what's spent on the durable capital in the form of the new buildings and equipment that will also be available

for future use: saving means putting resources aside for future use, so we measure total saving in both forms.

Global accounts report *all* of the economic activities and wealth of a college or university -- not just the budget, not just the Current Fund, not just the endowment. So a year's total real saving in a global accounting tells how the college did, economically, over that year. "Did they have a good year or a bad year?" A college whose real saving is negative had a bad year -- it can't *sustain* that economic performance since, sooner or later, it will run out of the net wealth that lets it spend more each year than it takes in. So sustainable performance demands that real saving be at least equal to zero -- that the college not 'dissave.' A college whose year's real saving is exactly zero has had an OK year -- is in a "financial equilibrium" in that it's saving enough that it can go on like that forever. A college that had positive real saving has had a good year.

It is difficult to say how good a good year should be -- *how much* positive saving a college *should* undertake; what represents an acceptable target for real saving. On the one hand, the present considerable wealth of schools like these four is the result, inescapably, of past saving -- of years of using up fewer resources than the college took in. The present generation in these institutions (of faculty, trustees, students, administrators, alumni) owe a considerable debt to their predecessors, a debt that they can repay only by taking similar care of their successors. On the other hand, there is clearly such a thing as *too much* current saving, of accumulating and hoarding wealth to an unreasonable and

socially undesirable extent (concern about this is the basis for the growing resistance to continued tax concessions to charities in the US -- university endowment earnings are already restricted in Germany and Canada -- see Henry Hansmann).

For present purposes, though, we can duck that larger and more awkward question and stick to the issue of the comparison of these schools' economic performance. There, the issue is considerably simpler since we can focus a school's saving **relative** to that of its major competitors. If Williams is saving more than the schools with which it competes, the relentless logic of compound interest means that it will, if it keeps that performance up, have more wealth and resources in the future than they do. If it's saving less, it will fall behind in wealth and in what it can do for its students. So, myopic though this narrower focus on the "right" level of saving may be, it is the appropriate one for the purposes of this comparative study.

The Data

We began by extracting total income and total current expenditure figures from the published treasurer's reports of the four colleges. So long as we stick to global financial accounts -- leaving out detail on physical capital wealth and the division of total real saving between financial and physical forms -- all the necessary information is contained in a typical financial statement. A more detailed description of our method and procedures can be found in the article in Planning in the bibliography (and more specific details can be

got from our “Working Notes”), but in brief global accounting reports (a) a college’s total income for the year, (b) its total current spending, (c) its total saving, as the difference between these and, finally, (d) its wealth at the end of the year (only its *financial* wealth, in these accounts). Total income is the sum of tuition and fees, gifts and grants, asset income, sales, services, and auxiliary income, and other revenues; total spending is the sum of current expenditures and the year’s real depreciation of the physical capital stock. Subtracting the second from the first gives total saving, the amount added to net wealth each year.

We start with a description of Williams’ economic performance as a run-through of global accounting information, looking first at its performance in the average year in the period, then at year-to-year performance changes during the five years. Having established the main dimensions of comparison for Williams, we look at the four schools, comparatively, in the same way.

Williams

Table 1 is a global summary of Williams’ economic performance for the five years from 1988-9 to 1992-3. It reports the figures as they come -- with some adjustments²--

²Largely by way of eliminating the double counting inherent in conventional Fund Accounting. A full global accounting would report the real value of physical capital wealth in current dollars -- data difficult to get with confidence from published sources. Without reliable figures for that part of total real wealth, we have not taken the considerable pains needed to force the required reconciliation of flows and stocks -- of saving and year to year changes in wealth. Instead, we have simply concentrated on translating the reported financial flows into inclusive, global figures.

Table 1
Williams Global Financial Accounts
(1000s of current dollars)

	1988-89	1989-90	1990-91	1991-92	1992-93	5 YEAR AVERAGE
I Income:						
Tuition and Fees	25,918	28,423	31,228	33,567	35,921	31,011
Gifts and Grants	16,957	20,362	23,025	26,591	22,534	21,894
Financial asset income	39,239	35,494	22,472	47,893	49,234	38,867
Sales, Service, & Other	3,110	2,464	3,032	2,576	2,930	2,822
Auxiliary Income	11,716	12,439	13,179	13,559	14,112	13,001
INCOME	96,940	99,183	92,935	124,185	124,731	107,595
II Current Expenditures:						
Current Spending	62,202	68,233	72,063	73,412	76,706	70,523
Depreciation	8,403	8,403	8,403	8,403	8,403	8,403
CURRENT EXPENDITURES	70,605	76,636	80,466	81,815	85,109	78,926
III Saving						
Nominal	26,336	22,548	12,469	42,370	39,622	28,669
IV. Financial Wealth						
Financial Assets	327,767	344,723	357,916	396,323	436,888	372,723
Financial Liabilities	51,135	53,097	49,356	49,093	50,394	50,615
NET FINANCIAL WORTH	276,632	291,627	308,560	347,230	386,494	322,109

from the *Treasurer's Report*, in current dollars, unadjusted for inflation. So on average over these five years, Table 1 shows that \$107.6 million in total yearly income was accompanied by \$78.9 million in current spending, leaving \$28.7 million in saving. Saving was about 27% of total income during this period.

But those figures are misleading because this *nominal* saving figure -- measured simply in current dollars and ignoring the effects of inflation -- overstates the amount the college actually saved. The real value of Williams' total net wealth is heavily affected by changes in the value of the dollar. Inflation reduces the purchasing power of the college's wealth, so after a year of inflation, a dollar of wealth is no longer a dollar of wealth. Consider a school that had a total financial wealth of \$100 million at the beginning of a year of five percent inflation. It would have to end that year with \$105 million, just to keep its wealth constant in real terms -- so it could buy the same amount of goods and services. In other words, \$5 million of its saving goes relentlessly toward maintaining the **real value** of its accumulated wealth. If the College didn't save \$5 million, its real wealth would shrink. So inflation creates, for the institution with considerable financial wealth, the problem of the Red Queen, that it has to keep running (saving), in order just to stay in one place (maintain the real value of its wealth). In our example, \$5 million would have to be subtracted from nominal, current-dollar, saving in order to see the effect of the year's economic performance on the college's real wealth. This adjusted figure is "real saving."

Table 2
Williams Global Financial Accounts
(1000s of constant 1993 dollars)

	1988-89	1989-90	1990-91	1991-92	1992-93	5 YEAR AVERAGE
I Income:						
Tuition and Fees	30,085	3 1,475	33,108	34,498	35,921	33,017
Gifts and Grants	19,683	22,548	24,411	27,329	22,534	23,301
Financial asset income	45,548	39,305	23,825	49,222	49,234	41,427
Sales, Service, & Other	3,610	2,729	3,215	2,647	2,930	3,026
Auxiliary Income	13,599	13,775	13,972	13,936	14,112	13,879
INCOME	112,526	109,832	98,53 1	127,632	124,73 1	114,650
II Current Expenditures:						
Current Spending	72,202	75,558	76,402	75,450	76,706	75,264
Depreciation	9,754	9,305	8,909	8,636	8,403	9,001
CURRENT EXPENDITURES	81,956	84,864	85,311	84,086	85,109	84,265
III Saving						
Nominal	30,570	24,968	13,220	43,546	39,622	30,385
Real	15,117	9,491	-1,3 12	33,209	29,701	17,241
In excess of gifts	10,235	540	-11,340	18,349	20,135	7,584
IV. Financial Wealth						
Financial Assets	380,463	381,733	379,464	407,324	436,888	397,174
Financial Liabilities	59,357	58,797	52,327	50,455	50,394	54,266
NET FINANCIAL WORTH	321,106	322,936	327,137	356,868	386,494	342,908

Table 2 reports the same information as Table 1, adjusted fully for inflation. It both expresses each year's figures in constant (1993) dollars and it reports real saving as well as nominal saving for each year. In 1993 dollars, Williams' average total yearly income was \$114.7 million with current spending of \$84.3 million, generating \$30.4 million of average nominal saving each year. Recognizing the effect that inflation has in eroding real wealth, average saving is reduced to \$17.2 million -- to 15% of total income.

Table 2 includes yet a third way of describing a college's saving, "Saving in excess of targeted gifts." Colleges, particularly private institutions like Williams, receive a considerable amount of financial support as gifts from alumni and other benefactors. Some of that money is given without restriction, but much of it carries the specific intention of the donor that those resources be added to the college's wealth, buying additions to the endowment or buildings or equipment. To include that saving in an evaluation of how well the resources of the college were managed by the college's administration in the year would distort the picture in an important way -- a college could show positive saving because of such gifts yet be running itself in such a way that it would have incurred a deficit without them. In other words, such gifts intended to increase wealth could mask a college's underlying dissaving, its unsustainable performance.³

Since saving is the measure of the college's economic performance, it is helpful to monitor its saving *in excess* of the gifts explicitly intended to increase wealth. From this

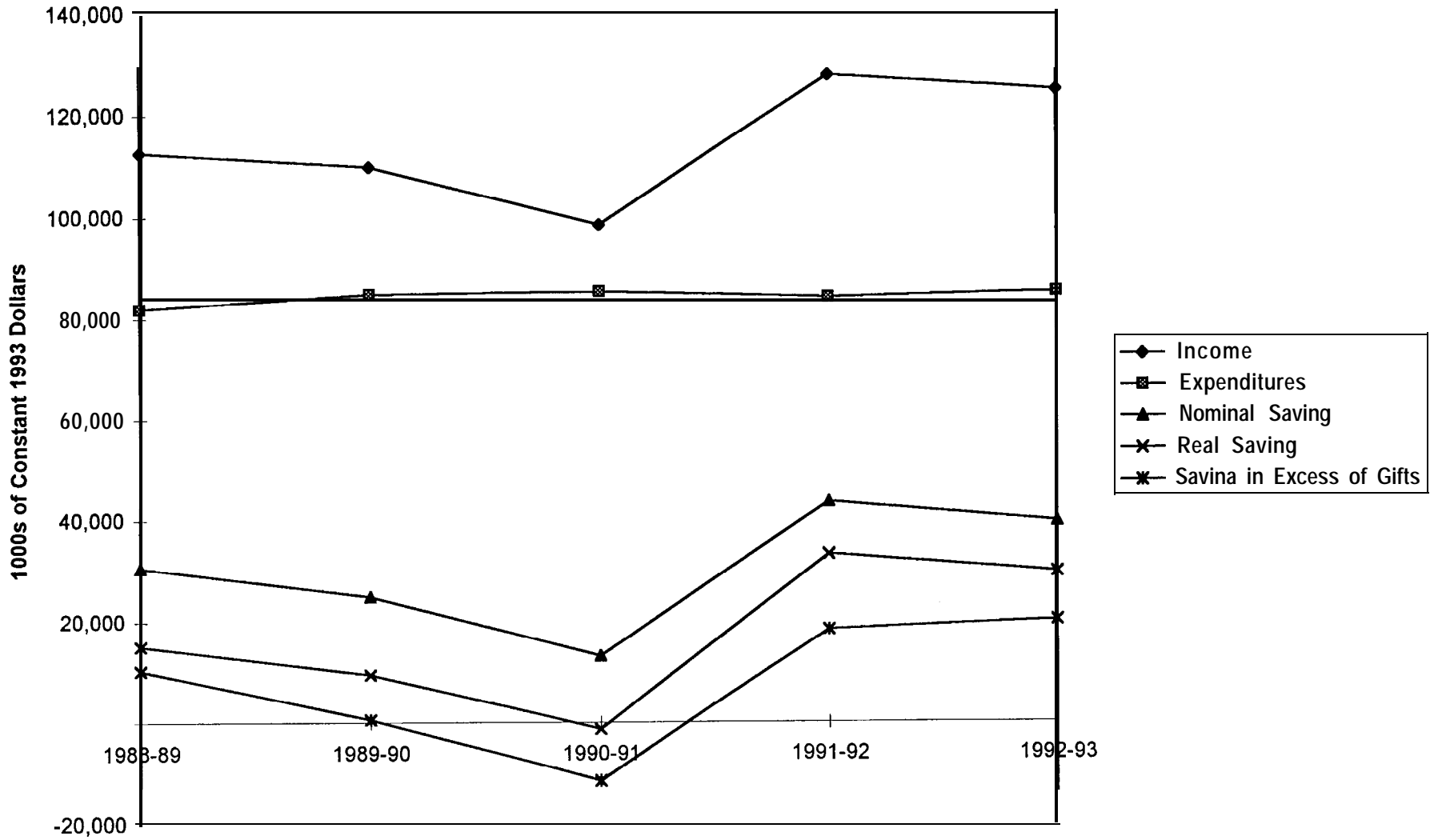
³Issues of stewardship are clearly central if a college uses the inherent 'fungibility' of its resources to mask dissaving with gifts solicited with the understanding that they'll be used to increase its wealth.

we can tell how much saving is truly the result of management decisions. When adjusted for gifts to increase wealth each year, Williams ended up with a bit more than \$7.5 million in average yearly real saving. So nominal saving was about 30% of income, real saving was about 15%, and real saving net of gifts to increase wealth, was a bit less than 7%. If we estimate the total value of the school's wealth⁴ -- including the replacement value of its physical capital -- so that saving can be expressed as the yearly rate of growth of that wealth, Williams' real wealth grew at an annual rate of 2.9%, over this period.

Before looking at comparable data from the other three schools, it is useful to consider the time-pattern of Williams' performance over the five years that underlie the yearly averages we've discussed. Figure 1 uses the data of Table 2 to do that, showing real values of income, current spending, and the three measures of saving -- nominal, real, and excess over targeted gifts -- for each of the five years. There's been a good deal of variability over time. Williams started in 1988-89 with \$15.1 million in real saving but that dropped in the following year to less than \$9.5 million -- by more than 35% -- and the year after that saving turned negative by more than a million dollars. The next two years saw a significant increase in real saving -- to a peak of \$33 million in 1991-92 and finally a healthy \$29.7 million in 1992-93. Figure 1 also shows that these variations in saving -- of all three sorts -- were due primarily to variations in income (those, in turn, were due to variations in asset income) that reflect the recession of '90-91. Current spending held

⁴For Williams, we don't need to go to published government (IPEDS) data on the replacement value of its physical capital since we can get the figures from estimates from B&G. But for the other schools below we don't have that easy source so we use IPEDS data for all four.

Figure 1: Williams Income, Expenditure and Saving



quite steady over the whole of the five years while total income dipped significantly in 1990-91 and then recovered, even more significantly, in the next.

Changes in the inflation rate -- with their potential effect on real saving -- were relevant only toward the end of the period when inflation fell to less than 3% from the 4.5-5% levels that prevailed in the first three years. These lower rates tended to compound the strong increases in nominal saving that were generated by rising income. Finally, the pattern of real saving in excess of gifts is affected not only by nominal saving and inflation but by changes in gift-giving patterns and these were far from constant over the five years: in 1988-89, such gifts were at a five year low of \$19.6 million and in 1991-92, they peaked at \$27.3 million. Those two years also registered the low- and high-water marks for gifts to wealth as a percentage of total gifts and grants.

Amherst. Swarthmore. and Wellesley. and Williams

Global accounts were generated in much the same way for Amherst, Swarthmore, and Wellesley for the same period. Table 3 summarizes the primary categories of that information for Williams from Table 1 and adds similar summary information for the other three schools (Detail for each school equivalent to Williams' in Table 1 is given in Appendix Tables). These are total values, reported in current dollars, pretty much as they appear in their respective treasurer's reports.

Table 3
Global Financial Accounts in 1000s of Current Dollars
Williams, Amherst, Swarthmore, Wellesly

	1988-89	1989-90	1990-91	1991-92	1992-93	5 YEAR AVERAGE
Williams						
Income	96,940	99,183	92,935	124,185	124,731	107,595
Expenditures	70,605	76,636	80,466	81,815	85,109	78,926
Saving	26,336	22,548	12,469	42,370	39,622	28,669
Financial Wealth	276,632	291,627	308,560	347,230	386,494	322,109
Amherst						
Income	86,493	68,618	62,805	92,660	108,480	83,811
Expenditures	60,167	64,799	66,869	70,627	72,073	66,907
Saving	26,326	3,819	-4,064	22,033	36,407	16,904
Financial Wealth	263,132	264,813	262,350	286,395	324,344	280,207
Swarthmore						
Income	83,648	82,173	58,714	106,789	111,613	88,587
Expenditures	45,024	49,581	53,640	57,976	59,296	53,103
Saving	38,624	32,592	5,074	48,813	52,317	35,484
Financial Wealth	316,848	340,768	335,186	383,665	429,657	361,225
Wellesley						
Income	115,089	121,060	109,770	152,487	156,042	130,890
Expenditures	71,943	80,789	85,773	91,238	97,423	85,433
Saving	43,146	40,271	23,997	61,249	58,618	45,456
Financial Wealth	384,167	394,131	411,840	443,380	482,406	423,185

Table 4
Global Accounts in Constant 1993 Dollars per Student
Williams, Amherst, Swarthmore, Wellesly

	1988-89	1989-90	1990-91	1991-92	1992-93	5 YEAR AVERAGE
Williams						
Income	55,025	54,616	48,489	63,310	61,263	56,540
Expenditures	40,076	42,200	41,984	41,709	41,802	41,554
Nominal Saving	14,948	12,416	6,506	21,600	19,461	14,986
Real Saving	7,392	4,720	-646	16,472	14,588	8,505
Saving in Excess of Gifts	5,005	269	-5,581	9,102	9,889	3,737
Financial Wealth	157,020	160,585	160,993	177,018	189,830	169,089
Enrollment	2,045	2,011	2,032	2,016	2,036	2,028
Amherst						
Income	63,584	48,429	42,010	61,243	68,876	56,828
Expenditures	44,230	45,734	44,729	46,680	45,760	45,427
Nominal Saving	19,353	2,695	-2,718	14,563	23,116	11,402
Real Saving	10,254	-6,688	-10,951	8,910	17,920	3,889
Saving in Excess of Gifts	8,272	-9,118	-15,112	6,726	15,224	1,198
Financial Wealth	193,437	186,898	175,486	189,289	205,933	190,209
Enrollment	1,579	1,569	1,585	1,555	1,575	1,573
Swarthmore						
Income	74,119	71,035	47,995	82,958	89,005	73,022
Expenditures	39,895	42,860	43,847	45,038	47,285	43,785
Nominal Saving	34,224	28,174	4,148	37,920	41,720	29,237
Real Saving	21,680	14,335	-8,799	29,432	32,978	17,925
Saving in Excess of Gifts	18,391	10,982	-11,278	27,657	30,169	15,184
Financial Wealth	280,754	294,577	273,991	298,046	342,629	298,000
Enrollment	1,310	1,281	1,297	1,323	1,254	1,293
Wellesley						
Income	61,934	60,550	52,924	70,467	69,630	63,101
Expenditures	38,716	40,408	41,354	42,163	43,473	41,223
Nominal Saving	23,219	20,142	11,570	28,304	26,157	21,878
Real Saving	14,127	10,434	2,738	22,100	20,504	13,981
Saving in Excess of Gifts	9,128	2,715	-5,988	13,324	15,305	6,897
Financial Wealth	206,736	197,130	198,561	204,896	215,264	204,517
Enrollment	2,157	2,214	2,199	2,224	2,241	2,207

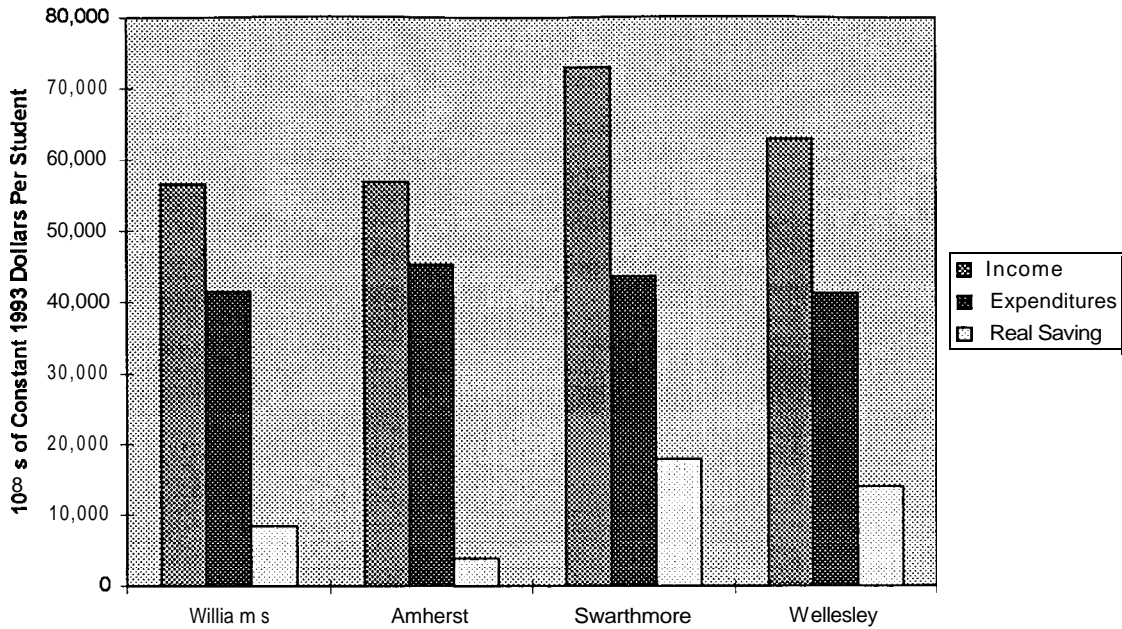
To make meaningful comparisons of economic performance over time, of course, it is necessary to express these values in constant dollars and to make meaningful comparisons of performance among schools of different size, it is necessary to express the numbers in per student terms, rather than as totals for each school. Table 4 does this. Summary global figures -- for all income, all current spending and the three measures of saving -- are reported over these same five years for each school, along with each year's enrollment. Table 4 is in per student values in constant 1993 dollars.

To focus, initially, on the typical performance of each school over the period, Table 5 reports only the key elements of performance averaged over the five years. These are shown graphically in Figure 2.

Table 5
Economic Performance Summary
Five-Year Averages
Williams, Amherst, Swarthmore, Wellesly
 (Constant 1993 Dollars Per Student)

	Williams	Amherst	Swarthmore	Wellesley
Income	56,540	56,828	73,022	63,101
Expenditures	41,554	45,427	43,785	41,223
Nominal Saving	14,986	11,402	29,237	21,878
Real Saving	8,505	3,889	17,925	13,981
Saving in Excess of Gifts	3,737	1,198	15,184	6,897
Financial Wealth	169,089	190,209	298,000	204,517

**Figure 2: Average Income, Expenditures and Savings Per Student
1988-1992**



In comparing these schools' economic performance, the most significant number, of course, is simply real saving per student. The variations within even this selected group of schools are clearly quite wide. Williams saved, on average, more than twice as much (\$8.5 thousand per student) as Amherst (\$3.8 thousand) while Swarthmore (with \$17.9 thousand) saved twice as much as Williams. Wellesley (at \$14.0 thousand per student) fell about midway between Williams and Swarthmore. These, remember, are average yearly figures over the whole of the five years, so transient disturbances are significantly damped.

It is interesting that these institutional differences in average real saving -- unlike Williams' differences over time -- appear only loosely related to differences in income. As in the case of Williams over time, there's a reasonable consistency in spending among the schools -- average current spending per student ranges from a low of \$41.2 thousand per

year for Wellesley to a high of \$45.4 for Amherst -- a difference of only 10%. But disparities in income per student are a good deal wider. Income levels range from Williams' \$56.5 thousand to Swarthmore's \$73.0 -- a difference of nearly 30%.

It might be reasonable to expect that high income would go with high spending *and* high saving, that the ratio of spending to saving, in other words -- the proportion of income spent -- would be pretty much the same among schools and among income-spending levels. But that's not the case. While Swarthmore, with the highest per student income also has the highest per student saving, Amherst, with an income only \$223 dollars above the bottom (Williams) has far and away the highest current spending per student -- some \$1,600 more than Swarthmore's and nearly \$4,000 more than Williams'. The flip side of that fact, of course, is that Amherst's saving is the lowest of the four by any measure.

It appears that Amherst, over the period, saved some 6.8% of its income in real terms, that Swarthmore saved nearly 25%, that Wellesley saved just over 22%, and Williams saved 15%.⁵ Viewed from Amherst's perspective, a conclusion might have to be that they're spending too much and earning too little -- they spend more than the average of the others by about 8% while earning less than the average of the others by about 8%. Together, those create quite a spread. Williams is doing better than Amherst in this central measure of economic performance. But that must be faint, even if welcome,

⁵Note that these are average real savings over the period as percentages of average income over the period, all in constant dollars. They will not be quite the same as the average of yearly real saving as a percent of yearly income.

reassurance since it is not doing nearly as well as Swarthmore and Wellesley. With 12% more income -- \$6,500 per student -- Wellesley has kept its spending per student \$300 below Williams' to generate 40% more in real saving. And Swarthmore, with 29% more income than Williams (\$16,500 more per student), has generated 83% more real saving, despite higher per student spending by 5% (by \$2,200).

It's useful to note that Swarthmore's carefully disciplined size -- keeping its total enrollment below 1300 students despite the considerable temptations to grow -- is important to its very good performance. Swarthmore has been able to spend more per student than the other three schools yet its small size has increased the per student impact of its fixed gift and asset earnings to give it an even higher income base. What its small size costs it in lost tuition income is more than made up in increased asset and gift income per student -- the magic of reducing the denominator. Williams' tendency to let its enrollment drift slowly up over the years has cost it in its ability to perform economically.⁶ But size is not the sole determinant of performance; Wellesley managed, with 9% more students than Williams, to save a good deal more. Wellesley's expenditures per student are even lower than Williams' and (behind these figures) its endowment per student is larger. So size surely makes real saving harder, all other things constant, but Wellesley has offset that disadvantage quite handily. (Amherst's performance carries, in a sense, the

⁶ Had Williams stuck to its original target of 1800 students, its current income per student would be \$3,547 -- or 6% -- higher than it is with 2000 students. It can be argued, of course, that in time the larger student body will yield more alumni and more gifts, hence a larger asset base, but there is a measure of optimism in that.

opposite message about size from Wellesley's -- that even a **small** well endowed school can increase per student spending enough to offset the advantages of small size.)

Global accounts, finally, let us say something about differences among these schools in the sources of their income -- differences that Table 6 shows are sometimes dramatic. That table reports five year averages of the four sources underlying each school's total real income per student -- tuition and fees, asset income, gifts, and sales-service-other.

Most interesting is the sharp contrast between Swarthmore and the other three schools. Swarthmore's large endowment and small size combine to make asset income not only very large in absolute terms -- more than \$37,000 per student compared to \$20-23,000 for the others -- but much more important relative to all other sources of income -- asset earnings account for more than 50% of Swarthmore's income but less than 40% for the others. Williams is relatively more dependent on tuition and fees than the others while gift income is relatively more important to Wellesley. And while it's small peanuts, Amherst's Sales, Services, and Other is double any of the other schools' -- probably through some quirk in their accounting conventions. It's worth noting that the crude distribution of sources of income for the three schools other than Swarthmore -- 40/40/20 between tuition/asset income/gifts -- represents a change from Williams' historic pattern of roughly 34/30/33 from the 30 year study.⁷ Asset and tuition income have become

⁷ "Total College Income: An Economic Overview," in ***Paying the Piper***.

Table 6
Components of Total Income
Five-Year Average and Percent of Total
(Constant 1993 Dollars Per Student)

	WILLIAMS		AMHERST		SWARTHMORE		WELLESLEY	
	Average	% of Total	Average	% of Total	Average	% of Total	Average	% of Total
Tuition & Fees and Auxiliary Income	\$23,126	40.9%	\$21,150	31.2%	\$22,645	31.0%	\$23,999	38.0%
Gifts and Grants	\$11,495	20.3%	\$10,502	18.5%	\$11,495	15.7%	\$16,136	25.6%
Asset Income	\$20,428	36.1%	\$21,980	38.7%	\$31,237	51.0%	\$22,491	35.6%
Sales, Services, and Other	\$1,491	2.6%	\$3,196	5.6%	\$1,645	2.3%	\$475	0.8%
Total	\$56,540	100.0%	\$56,828	100.0%	\$73,022	100.0%	\$63,101	100.0%

relatively more important and gift income -- even in this period of aggressive capital campaigns -- relatively less.

The differences in net financial wealth shown in Table 4 that lie behind these striking differences in the role of asset income⁸ are consistent -- Swarthmore has nearly \$300,000 per student in financial wealth while Williams, at the other end, has less than \$170,000. Amherst and Wellesley have \$190,000 and \$205,000 respectively. Enrollments -- to reiterate that important component of asset earnings per student -- are 1293 for Swarthmore, 2028 for Williams, 1573 for Amherst, and 2207 for Wellesley.

It is important to note, however, that in being forced by accounting conventions to neglect the physical capital wealth that would roughly double the real wealth of these schools, we neglect a great deal. It seems likely (from estimates of replacement values confirmed by casual observation) that Williams' physical asset wealth is greater than that of the other three schools. If so, that might go far to offset, in fact if not in accounting figures, the conclusions we reached above. Significantly, it would mean that Williams was offering its students -- in explicit spending plus the services of an excellent capital stock -- as much as the others even though accounting conventions would conceal a good deal of it.

⁸A year's asset income is the product of the size of its net financial wealth (reported in Table 4) and its total return (not reported) so differences in either will generate differences in asset earnings. We have not looked at total return.

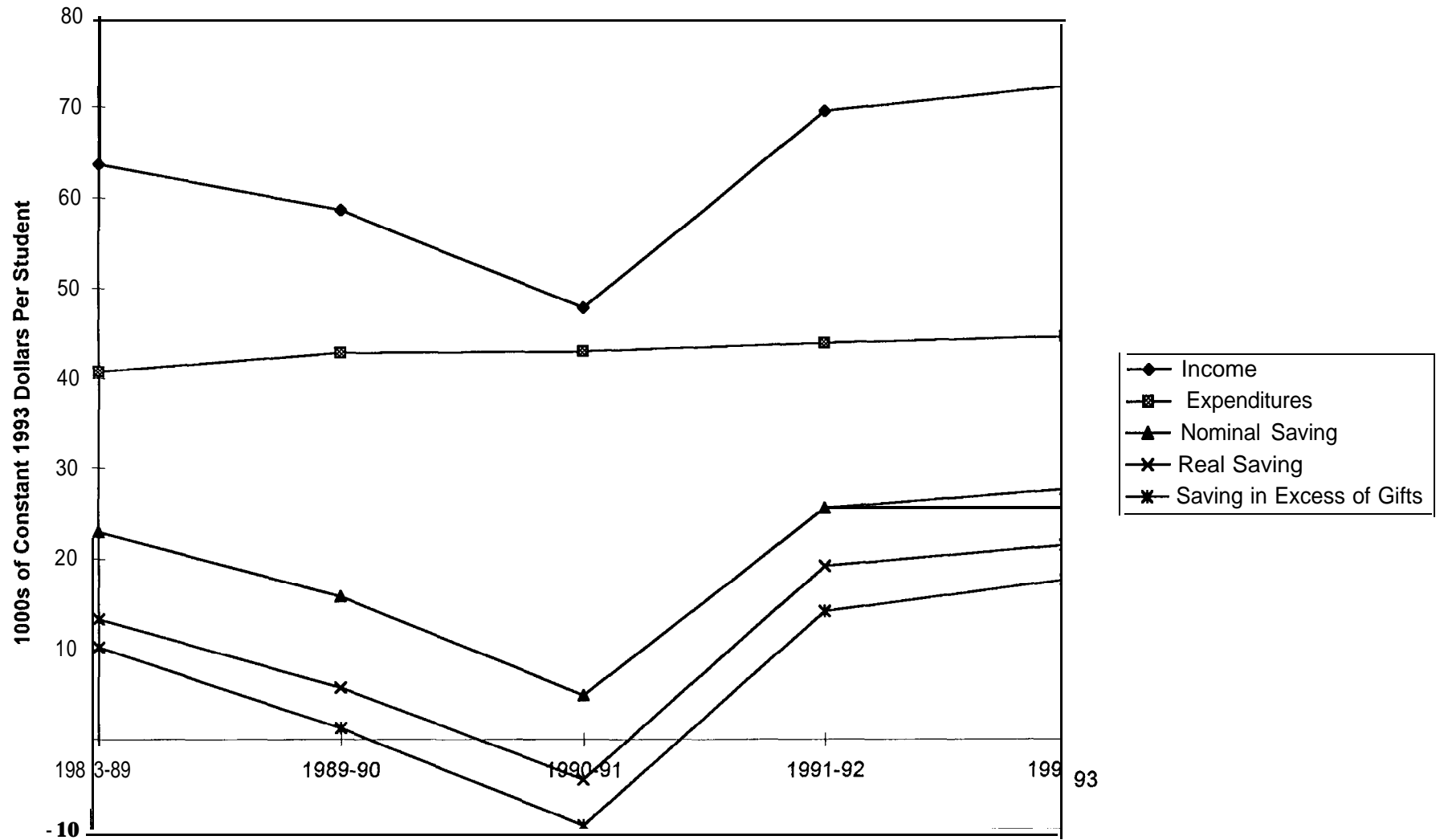
Williams' typical economic performance over the period could be described as "good but not great," compared to Swarthmore, Wellesley, and Amherst. Current spending is low, relative to the competition, but not exceptionally so and income per student is also low. Williams does well by keeping its spending modest in light of its modest income. In contrast, Amherst does relatively badly by combining the highest spending of the group with only a little more income, Wellesley does better than Williams with more income but a little less spending while Swarthmore does the best of all with the highest income combined with moderate average spending.

Trends -- Performance over 1988- 1993

It's useful, now, to look behind the five-year averages to see how these schools were performing within the period from 1988 to 1993. Figure 3 shows the average of the four schools' income, current spending, and the three measures of saving over the period. It pictures the changing environment and common behavior, rather than the performance of individual schools.

This was a period of marked prosperity reflected in a high per student income that took a serious hit in the middle -- in 1989-91 -- and then more than recovered in the last two years. Average real saving per student for these schools fell from more than \$13,000 to a negative \$4,400, then recovered dramatically to \$19,000, and finally to more than

Figure 3: Average Income, Expenditures, and Savings per Student



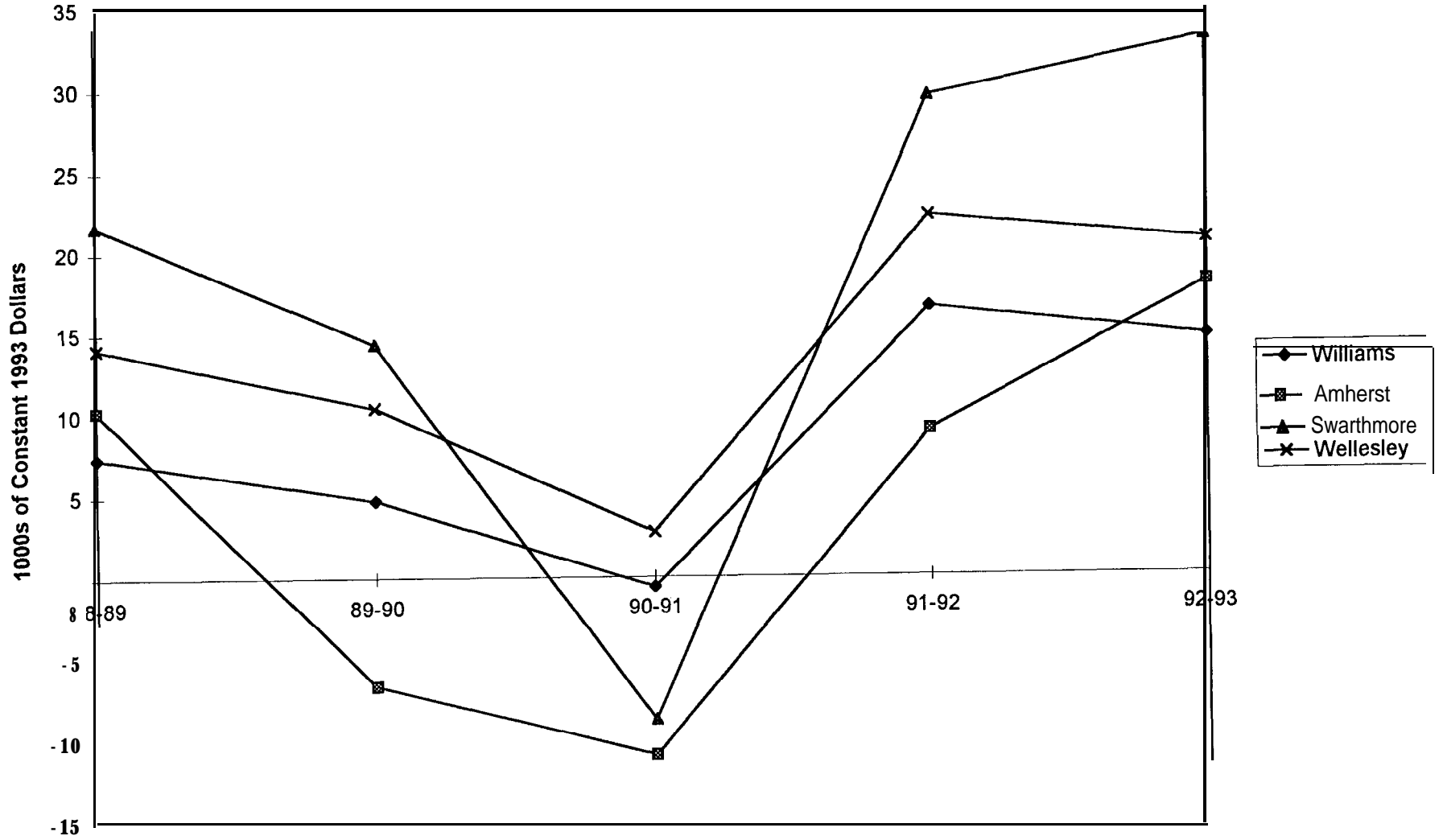
\$21,000 by 1991-92. Through the period, average spending per student was quite stable, rising steadily from \$41,000 to \$45,000, a bit less than a ten percent increase over the five years. It is income that behaved erratically, of course, through the recession and recovery, starting at an average of \$64,000 per student, falling by 25% to \$48,000, then recovering by more than 50% to about \$72,000 for an increase from beginning to end of 12%.

Changes in asset income underlay the volatility in income per student, falling from \$27,000 on average in 1988-89 to less than \$12,000 in 1990-91 then rebounding to more than \$35,000 by 1992-3. Gift and grant income, along with tuition and fees, remained quite steady over the period.

Broadly, for the group as a whole, this was a period of sharply falling and then sharply rising real incomes superimposed on steady but slightly increasing real spending. Putting these together, saving was determined by income with real saving (and saving in excess of gifts) going negative during the worst year, 1990-91. In that year, these schools, on average, spent more than they took in, decreasing their real wealth.

Despite the income roller coaster embedded in this period, something useful can be said about the individual schools' performance as it played out -- something that modifies judgments based solely on their averages over the period. There are quite different patterns of behavior underlying the averages for the four schools. Figure 4 pictures the time-pattern of real saving per student for each institution (from Table 4). It's striking that they start and end in the same order -- Swarthmore-Wellesley-Amherst-Williams --

Figure 4: Real Saving Per Student

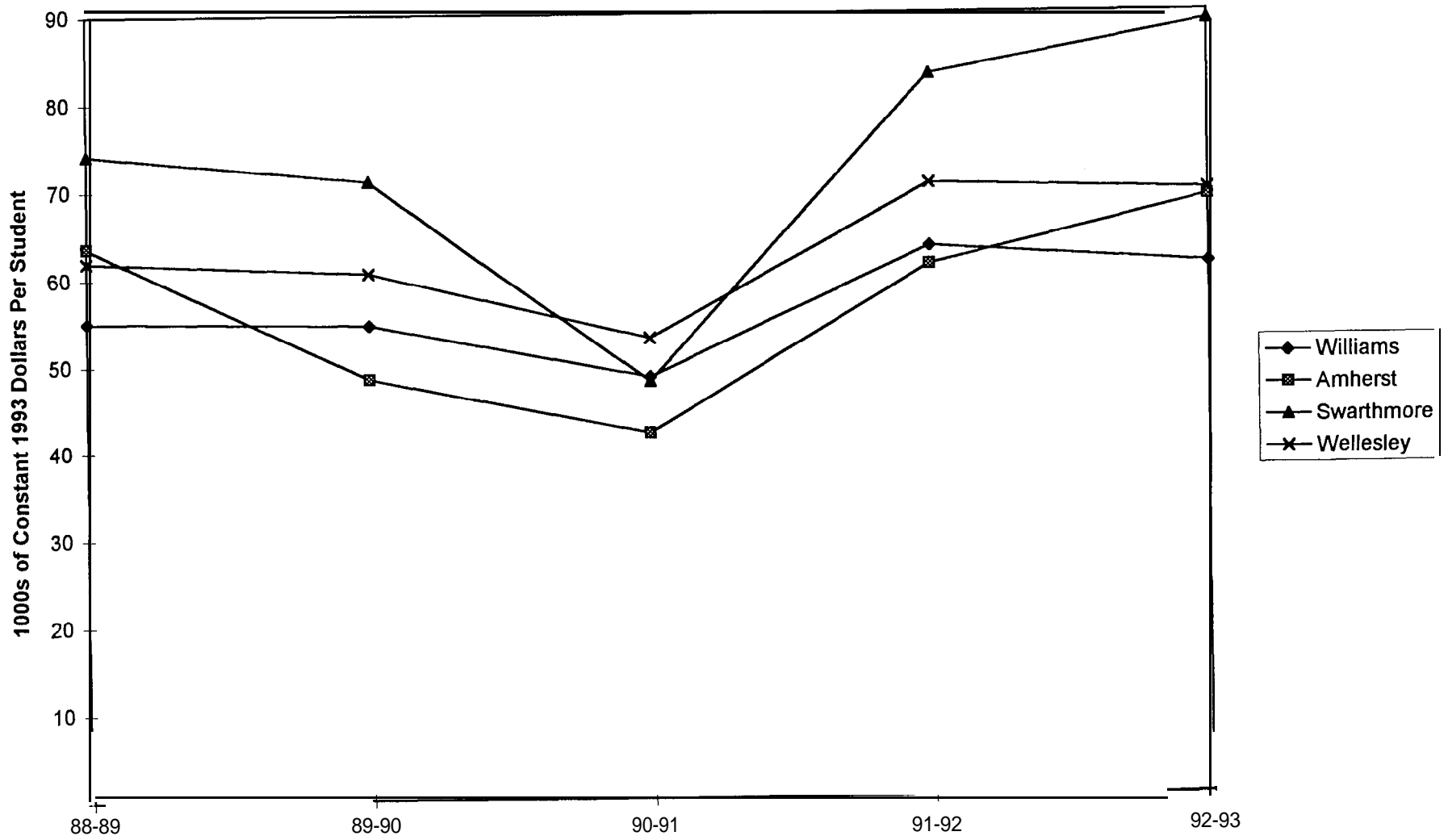


but their behavior in between is markedly different. Williams' real saving is quite steady and Swarthmore's quite volatile, diving, in 1990-91, well below Williams but then rebounding sharply in the next year while Williams came back a good deal less. Wellesley's pattern was like Swarthmore's but more moderate. And Amherst had the worst of both worlds with the sharpest and most prolonged dip in the middle of the period.

These real saving patterns suggest that the rather grim description of Amherst's performance based on their five-year average saving may be more transient than those averaged data reflect -- that Amherst's saving at the beginning and end of the period, in fact, was better than Williams' so while they were hit hard in 89-90 and 90-91, their trend in real saving is respectable and, indeed, better than Williams'.

But it is the time-shape of the components of real saving -- income and current spending -- that are most revealing. Real income per student is shown in Figure 5 with a pattern that largely mirrors that of real saving in the figure above. Again, the big dip and strong recovery of Swarthmore's income is in notable contrast to Williams' lower and more steady pattern. It is a short trend, but it may be significant that both Swarthmore and Amherst saw their real incomes recover steadily from the low of 1990-91 while Williams' and Wellesley's incomes rose to 1991-92 and then fell back a bit in 1992-93. As always, one would like just one more year's data.

Figure 5: Income Per Student



The more significant part of the story, though, may be in Figure 6 that shows the time pattern of current spending per student. Certainly the notion is on the land that a most critical issue for colleges and universities is getting costs under control and this figure shows how well the schools in this group have done it over this period.

Again, there are two broad patterns. Swarthmore and Wellesley have seen their per student spending drift up substantially from 1988 to 1993 (in constant dollars, remember, so inflation plays no part -- they're simply spending more). Swarthmore ends the period spending 18.5% more per student than it did five years earlier. Wellesley ends up spending 12% more. In contrast, Williams' expenditure per student line in Figure 6 is quite flat -- real spending per student at the end of the period is only 4% more than at the beginning, five years earlier. Amherst ended up spending only 3.5% more than at the beginning.

To the extent that what's happened within these five years reflects long term trends, the significant advantage of Swarthmore and Wellesley that appears in average real saving per student over the period is being eroded by expenditures that are rising faster than income over time. It's dangerous to put too much weight on two years, as we do when we look at the percentage change from beginning to end of the period, but that comparison in Table 7 shows quite different patterns of performance for these schools.

Williams showed the largest percentage increase in real saving over the period and Amherst was a strong second. Swarthmore and Wellesley saw much lower rates of growth of real saving: they started (and ended) higher but grew more slowly. But more to the point are the underlying growth rates for income and expenditure that ultimately

Figure 6: Current Expenditures Per Student

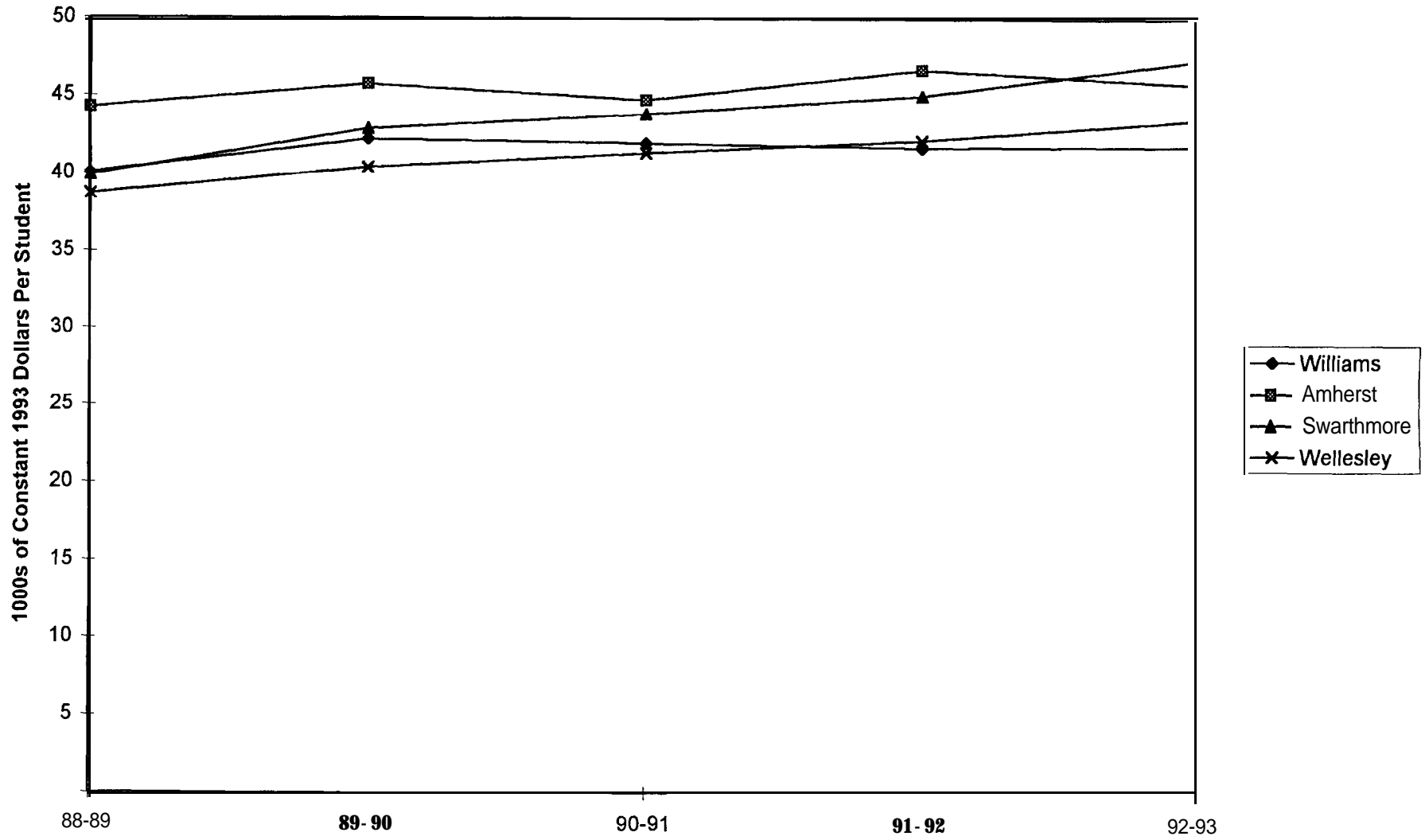


Table 7
Income, Expenditures, and Savings
Five-Year Averages and Five-Year Growth
 (Constant 1993 Dollars per Student)

	WILLIAMS		AMHERST		SWARTHMORE		WELLESLEY	
	Average	% Growth	Average	% Growth	Average	% Growth	Average	% Growth
Income	\$56,540	11.3%	\$56,828	8.3%	\$73,022	20.1%	\$63,101	12.4%
Expenditures	\$41,554	4.3%	\$45,427	3.5%	\$43,785	18.5%	\$41,223	12.3%
Real Saving	\$8,505	97.3%	\$3,889	74.8%	\$17,925	52.1%	\$13,981	45.1%

determine saving. There, Williams' (and Amherst's) performance looks quite a bit better than either Swarthmore's or Wellesley's. Williams' income growth exceeded its expenditure growth by 7 percentage points, Amherst's did so by 5 percentage points, Swarthmore's by only 1 percentage point and Wellesley's, income and spending grew at the same rate. These growth rates relentlessly determine future levels of saving -- if they persisted, average saving would fall for Swarthmore and Wellesley relative to Williams and Amherst. In no case, though, was spending growing faster than income, so all avoided that danger sign that would lead to negative saving.

It's easy to feel that the "real yearly saving per student" on which we've focused is a distant and abstract measure of a college's economic performance, but it's not. A rather dramatic way to convey the significance of real saving recognizes that saving increases wealth, dollar for dollar, so the school with the highest current saving rate will, if the rate is maintained, have the largest future increase in wealth. And the legendary "power of compound earning" means that seemingly small differences in the real saving rate will add up, over time, to very large differences in real wealth. More real wealth, in turn, allows a school, quite simply, to give its students more for their tuition money.

Table 8 presents data on the total wealth of these four schools, combining (as in a complete global accounting) measures of both physical and financial wealth. The total wealth figure is a five year average of net financial wealth from our treasurer's report data for these schools plus reported replacement value of capital from government IPEDS data.

(Were they used for more than illustrative purposes, these data would need some greater precision.⁹)

Table 8
Saving and Future Wealth

	Total Wealth	Enrollment	Wealth per Student	Real Saving as a % of Wealth	Wealth per Student 30-Year Extrapolation
Williams	\$686,431,987	2028	\$338,477	2.89%	\$796,382
Amherst	\$626,198,757	1573	\$398,092	0.96%	\$530,321
Swarthmore	\$534,013,372	1293	\$413,003	4.34%	\$1,477,429
Wellesley	\$678,485,336	2207	\$307,424	4.55%	\$1,167,276

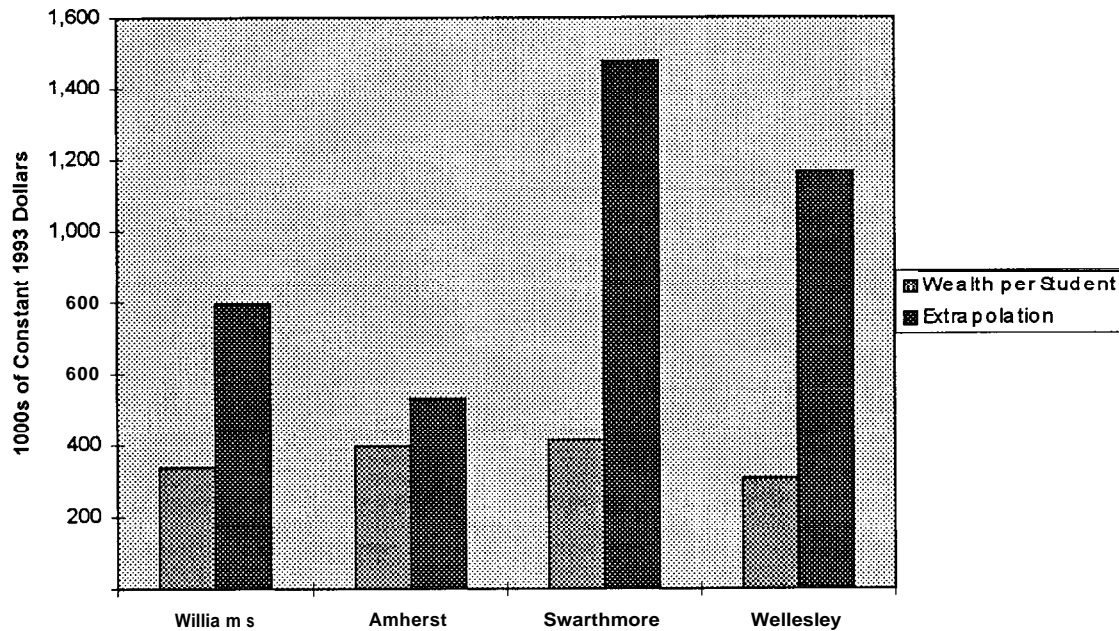
Williams has the largest total wealth of the group (due largely to the size of its physical capital stock), though by only a small margin over Wellesley. At the other end, Swarthmore's considerable financial wealth is complemented by a pretty meager level of physical capital (in this company) to give it the smallest total wealth. But differences in enrollment size (Column 2) quickly transform those total wealth rankings, putting Swarthmore at the top with more than \$400,000 in wealth per student, Amherst just below \$400,000, Wellesley at the bottom with only a bit more than \$300,000, and Williams toward the middle with \$340,000 per student.

These are current levels of wealth per student. Figure 7 (and Column 5) shows what will happen to these schools' respective levels of wealth if they keep on saving at the real rates they have for the past five years -- where they'd be, in total wealth per

⁹While financial wealth is net of indebtedness, the replacement value of physical assets has not been adjusted for accumulated deferred maintenance. See Winston, AIR.

student, at the end of thirty more years of such performance. The results, we think, are striking. If it continues to save only 0.96% of its total real wealth every year -- as it has

Figure 7: 30-Year Extrapolation of Wealth Per Student



on average between 1988 and 1992 -- Amherst will wind up with only 33% more wealth after thirty years, in the year 2023. At the other end of the performance scale, Wellesley's saving has increased its real wealth by more than 4.5% over the recent past and if that's continued, it will wind up with 380% more wealth in thirty years. Swarthmore's per student wealth, at \$413,000 to start with, is large enough that its somewhat smaller 4.3% annual growth rate keeps it the wealthiest of the four in 2023 with a bit more than a 350% increase. Williams, finally, falls somewhere between with its 2.9% real growth rate over the past five years that would, if kept up for thirty years, increase per student wealth by 235%.

The moral of this story is that differences in average real saving among these schools have been large enough that if they were to continue they'd create striking and very significant differences in wealth per student -- in their ability to support expensive education. It's simply hard to imagine that if Amherst had \$530,000 per student in real wealth thirty years from now they'd be able to provide the same educational services as Swarthmore with nearly \$1.5 million. Wellesley would be within striking distance of Swarthmore's educational quality (and catching up) while Williams would do better than Amherst but fall well behind the leaders -- it would have two thirds of Wellesley's wealth to work with, and barely half of Swarthmore's.

While these are not, we should hasten to say, to be taken literally as a forecast of where we think these schools will be in thirty years, they are, we think, a useful illustration of the key role of real saving and the potential long run leverage of current economic performance. Differences in real saving are not trivial.

Conclusion

In judging these four schools, it's important to keep in mind -- in an era of real stringency for US higher education -- that these are, indeed, unusual and privileged institutions. The resources they have to work with are off the charts for most of the country's schools -- where average spending per student is in the order of \$10,000 a year - - and their underlying wealth would be considered by many to be nearly obscene. Yet viewed in their own context, while they do have access to lots of resources they also

produce a very high quality and expensive education, giving their students massive subsidies,¹⁰ and they do it in intense competition with each other.

Their performance, as a group, is quite good. All of them, on average over the period from 1988 to 1993, added to, rather than subtracting from, their real wealth -- they resisted the considerable temptations to let current spending absorb all of current income and more. And with laudable responsibility and stewardship, all of them resisted the temptation to use gifts intended to increase their wealth to fund, instead, current spending.

Viewed specifically from Williams' perspective, its average performance over this period is a mixed bag. Williams' average real saving was considerably less than that of both Swarthmore and Wellesley and the 30-year simulations above show that if those differences were to persist, they'd have a very large impact on the college's ability to compete in delivering a high-quality-high-cost-low-price education in the future. The fact that Williams' performance, both now and in the projection, is considerably stronger than Amherst's is meager (if welcome) consolation.

But if Williams' average economic performance over these five years is not reassuringly strong, the patterns of behavior within the period are more encouraging. Those trends suggest that Swarthmore and Wellesley have not been disciplining their spending growth effectively. If that were to continue, it would eliminate their superior saving performance and with it their simulated future dominance of Williams. Complementing that, Williams has done better in keeping its current spending growth under control with a 4% real increase in per student spending over the whole of the five year period. Swarthmore's was over 18%.

¹⁰ At Williams in **1991-2**, the average student got a yearly subsidy of just under \$40,000. **This** is typical, too, of the others.

The primary reason for Williams' weak average performance despite doing the best job of controlling spending -- with both a low level and controlled growth -- is, inescapably, its relatively low income per student, the lowest of the bunch. So spending control that is entirely laudable when looked at in isolation may not still be enough when judged against Williams' more modest income.

The global accounting of a college's economic performance encompasses all its income, all current spending, and hence all its real saving. And real saving is the ultimate answer to the questions "Did the College have a good year or a bad year?" A good year is one where its total income kept up with its current spending and a bad year is one where it didn't, where it spent more than it took in and had to draw down some of its wealth -- financial or physical -- in order to make ends meet. Positive real saving, puts some current resources aside for the inevitably greater demands of the future.

These four (wealthy) colleges did quite well over this period, all of them staying in the black, in the average year. But despite their advantages and their apparent similarities, the figures show that they started with very different strategies and behaved very differently during the period with -- the projections suggest -- very different implications for the future. And the school that saves the most now will be able to give its students the most for their money in the future -- to spend more on educational services, or charge a lower net tuition, or both.

Appendix Table A
Amherst Global Financial Accounts
(1000s of current dollars)

	1988-89	1989-90	1990-91	1991-92	1992-93	5 Year Average
I. Income:						
Tuition and Fees	26,817	28,424	31,738	33,261	35,850	31,218
Total Gifts and Grants	18,299	16,620	15,567	12,631	13,495	15,322
Financial asset income	37,710	20,040	10,722	40,310	53,898	32,536
Sales, Service, & Other	3,666	3,534	4,779	6,458	5,237	4,735
Auxiliary Income						
INCOME	86,493	68,618	62,805	92,660	108,480	83,811
II. Current Expenditures:						
Current Spending	53,067	57,699	59,769	63,527	64,973	59,807
Depreciation	7,100	7,100	7,100	7,100	7,100	7,100
CURRENT EXPENDITURES	60,167	64,799	66,869	70,627	72,073	66,907
III. Saving						
Nominal	26,326	3,819	(4,064)	22,033	36,407	16,904
IV. Financial Wealth						
Financial Assets	295,359	297,969	294,573	330,518	368,094	317,302
Financial Liabilities	32,226	33,157	32,222	44,123	43,750	37,096
NET FINANCIAL WORTH	263,132	264,813	262,350	286,395	324,344	280,207

Appendix Table B
Swarthmore Global Financial Accounts
(1000s of current dollars)

	1988-89	1989-90	1990-91	1991-92	1992-93	5 Year Average
I. Income:						
Tuition and Fees	22,883	24,376	27,105	29,361	29,005	26,546
Total Gifts and Grants	13,848	14,109	10,902	15,963	14,669	13,898
Financial asset income	43,322	41,478	18,306	58,686	64,442	45,247
Sales, Service, & Other	3,595	2,210	1,229	1,106	1,588	1,946
Auxiliary Income			1,172	1,673	1,909	1,585
INCOME	83,648	82,173	58,714	106,789	111,613	88,587
II. Current Expenditures:						
Current Spending	42,071	46,628	50,687	55,023	56,343	50,150
Depreciation	2,953	2,953	2,953	2,953	2,953	2,953
CURRENT EXPENDITURES	45,024	49,581	53,640	57,976	59,296	53,103
III. Saving						
Nominal	38,624	32,592	5,074	48,813	52,317	35,484
IV. Financial Wealth						
Financial Assets	359,591	386,130	406,662	453,398	506,496	422,455
Financial Liabilities	42,743	45,362	7,147	69,733	76,839	61,231
NET FINANCIAL WORTH	316,848	340,768	335,186	383,665	429,657	361,225

Appendix Table C
Wellesley Global Financial Accounts
(1000s of current dollars)

	1988-89	1989-90	1990-91	1991-92	1992-93	5 Year Average
I. Income:						
Tuition and Fees	27,459	30,981	33,775	36,648	38,523	33,477
Total Gifts and Grants	33,448	3 1,865	35,810	36,149	28,616	33,178
Financial asset income	39,831	41,690	23,522	61,128	68,533	46,941
Sales, Service, & Other	755	829	827	1,387	1,155	990
Auxiliary Income	13,596	15,695	15,836	17,175	19,214	16,303
INCOME	115,089	121,060	109,770	152,487	156,042	130,890
II. Current Expenditures:						
Current Spending	67,378	76,224	81,208	86,673	92,858	80,868
Depreciation	4,565	4,565	4,565	4,565	4,565	4,565
CURRENT EXPENDITURES	71,943	80,789	85,773	91,238	97,423	85,433
III. Saving						
Nominal	43,146	40,271	23,997	61,249	58,618	45,456
IV. Financial Wealth						
Financial Assets	440,907	452,675	469,417	506,549	568,372	487,584
Financial Liabilities	56,740	58,544	57,576	63,168	85,965	64,399
NET FINANCIAL WORTH	384,167	394,131	411,840	443,380	482,406	423,185

BIBLIOGRAPHY:

Amherst College, *Report of the Treasurer to the Trustees of Amherst College*, (Amherst, MA; 1988-89 to 1992-93).

Hansmann, Henry, "Why Do Universities Have Endowments?" Journal of Legal Studies, vol. XIX, January, 1990, pp. 3-42

McPherson, Michael S., Morton Owen Schapiro, and Gordon C. Winston, *Paying the Piper: Productivity, Incentives, and Financing in U.S. Higher Education*. (Ann Arbor: The University of Michigan Press; 1993)

Swarthmore College, *Swarthmore College Bulletin: The President's Report, 1988-19 (and subsequent)*, vol LXXXVII, No. 3.

Wellesley College, *Annual Report for the year ended June 30, 1989 (and subsequent)*. Wellesley, MA.

Williams College *Audited Annual Financial Statements and Treasurer 's Report, June 30, 1989 (and subsequent)*, Williamstown, MA.

Winston, Gordon C., "The Necessary Revolution in Financial Accounting," *Planning for Higher Education*, Vol. 20, No. 4, Summer, 1992, pp. 1-16.

Winston, Gordon C. "The Capital Cost Conundrum," *The NACUBO Business Officer*, (June, 1993) pp. 22-27.