



THE LONG VIEW
State University Enrollments, Revenues and Expenditures:
FY 1977 through FY 2002

A Report to the House Appropriations Subcommittee on Higher Education

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INTRODUCTION

INTRODUCTION

In 1990 the Michigan Senate created a Select Committee on Tuition Policy to examine trends in state appropriations for higher education, tuition patterns for resident undergraduates, and revenues and expenditures of Michigan's fifteen state universities during the period of 1977 through 1989.

The Select Committee issued a report that identified tuition restraint, focus on instruction, avoidance of "mission creep," and enhanced and targeted state appropriations as key recommendations.

At that time I served as consultant to the Senate Select Committee chaired by then-Senator William Sederburg. In preparing a report for the Select Committee, I examined data reported annually to the state of Michigan in the Higher Education Institutional Data Inventory (commonly known as the HEIDI database).

Thirteen years have passed since issuance of the Select Committee's report in December, 1990. It is an appropriate time to update the report that I prepared, to determine if any major changes have occurred, and to extend the revenue and expenditure trendlines developed at that time.

Some of the outcomes identified in the earlier report have continued to the present day. State support per fiscal year equated student (FYES) had peaked in FY 1987 for most universities. Appropriation actions in the 1990's and early 2000's have not reversed that trend; hence, the cost burden of a state university education has shifted further to the student and his or her parent or guardian.

The HEIDI data also indicate that the state universities have increased institutional financial aid since issuance of the 1990 report. Hence, the "net price" in FY 2002 for an average resident undergraduate was about 14 % less than the "sticker price" commonly identified as resident tuition and fees.

Enrollment changes in this quarter of a century have been fascinating. Nonresident students have increased at most universities, especially at the University of Michigan, but not at Michigan State. And the growth trend line for nonresident undergraduates at the other twelve state universities has resembled that of UM in recent years.

The data reveals considerable variation among the fifteen universities in terms of General Fund revenue. Some are much more dependent upon tuition as a revenue source. Others have considerable other GF revenue.

When one views the charts related to university expenditures, one will again notice wide variation. UM remains the premier university in terms of GF revenue and expenditures. It has maintained instructional expenditures, adjusted for higher education inflation, at a fairly steady amount per FYES in the last decade. Its largest growth in per-FYES expenditures, like most of the state universities, has been in noninstructional areas.

While this study provides glimpses of enrollment, revenue, and expenditures patterns over time, it does not answer policy questions that the charts may prompt in the reader.

INFLATION INDICES

Figure INDICES1: Income and Price Indices (FY77 = 100)

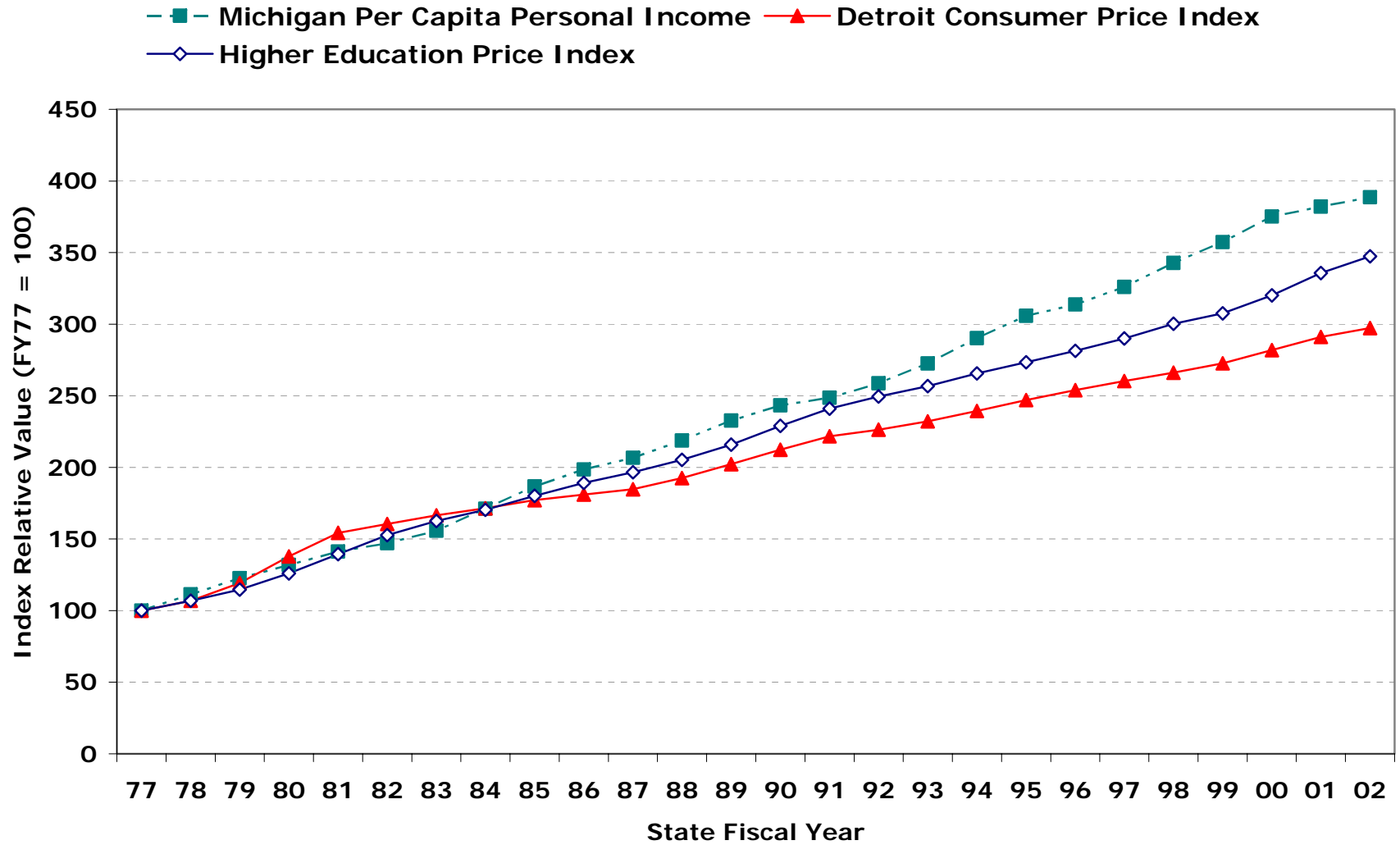


Figure INDICES1: Income and Cost Indices

When one compares university revenue and expenditures over time, one usually adjusts the data by using an appropriate index. Three indices that are frequently used are a per capita personal income index, a consumer price index, and an index that applies to higher education expenditures.

Michigan Per-Capita Personal Income (MPCPI)

This per-capita income index is composed of the income received by Michigan residents divided by the state population at the time of data collection. As Figure INDICES1 reports, Michigan per-capita income nearly quadrupled from state fiscal year (October 1 to September 30) 1977 to fiscal year 2002. From FY 1985, the growth in per-capita personal income has exceeded both the Detroit Consumer Price Index (CPI) and the Higher Education Price Index (HEPI). It has tended to have spurts of accelerated growth followed by a several years of slower progress.

A person could use the MPCPI to measure the relative affordability of university enrollment by comparing the growth rate of resident undergraduate tuition and fees to the growth rate of the MPCPI.

Detroit Consumer Price Index (DCPI)

The most commonly used index for measuring inflationary pricing growth for the same “basket of goods and services” over time is the Consumer Price Index (CPI). Though there is a national measure prepared by the U.S. Bureau of Labor Statistics, a more appropriate index for Michigan is the Detroit CPI; it reflects expenditures in the largest urban area in the state.

As Figure INDICES1 displays, the DCPI has tripled from FY 1977 to FY2002. From FY 1980 to FY 1984, it exceeded both the MPCPI and the HEPI indices during the era of very high inflation in the U.S. Since FY 1985, it has lagged both measures.

Higher Education Price Index (HEPI)

The Higher Education Price Index is a measure initially developed by the U.S. Office of Education and subsequently maintained by Research Associates of Washington, a consulting firm that compiled data collected by other agencies. It measures the impact of distinctive higher education expenditures on the purchasing power of postsecondary institutions.

As noted in the figure, HEPI has exceeded the DCPI since FY 1985. Universities utilize the observable difference between HEPI and DCPI as an argument for additional state resources to both offset general consumer inflation and to provide funding for quality improvements and program expansions in higher education.

FY 1985 also was the low point in state university enrollment in terms of Fiscal Year Equated Students (FYES). From that fiscal year to FY 2002, enrollment increased over 23%; that is equivalent to a compound average annual increase of 1.25 %.

During that same time period, HEPI lagged the growth in Michigan per capita personal income.

ENROLLMENTS

Figure FYES1:
The growth in total Fiscal Year Equated Students has been most evident among the twelve state universities that are not the major research campuses.

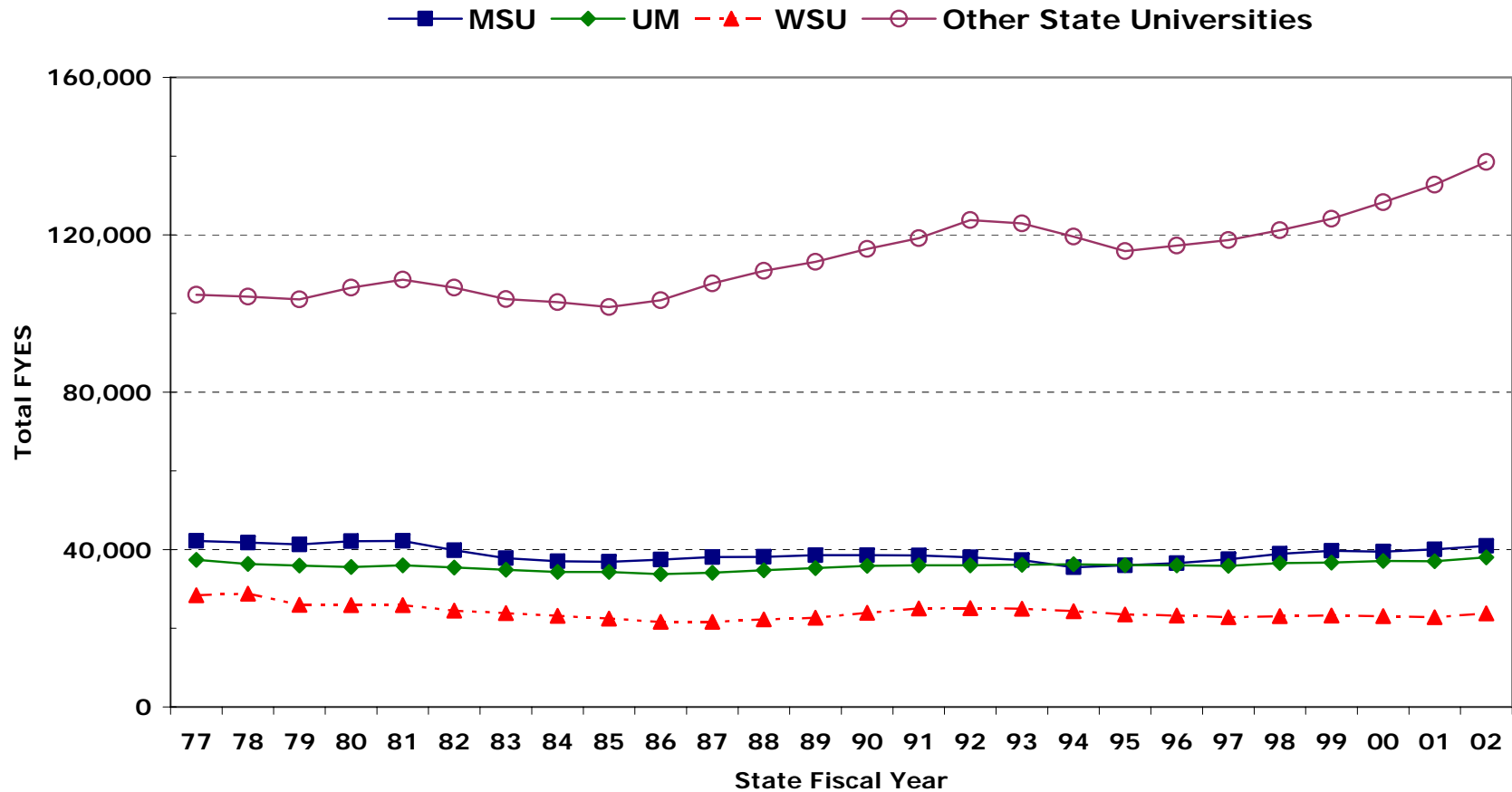


Figure FYES1: Fiscal Year Equated Students

A common acronym in analyzing higher education revenue and spending is FYES, which represents Fiscal Year Equated Students. Prior to FY 1999, one undergraduate FYES was equal to 31 student credit hours (SCH). Due to coordination of the state higher education database (HEIDI) with the federal database (IPEDS) for FY 1999 and subsequent fiscal years, the conversion factor was changed to 30 SCH for that and subsequent fiscal years.

The pre-1999 undergraduate FYES figures used in this analysis of revenue and spending have been recalculated to correspond to the new conversion standard.

Calculation of a graduate FYES is dependent upon the level of graduate education; a master's degree FYES is calculated on the basis of 24 SCH's, while a doctoral degree FYES is equal to 16 SCH's.

Variable Growth Among Campuses

During the 25-year period from FY 1977 to FY 2002, FYES enrollment grew at a compound annual average rate of 0.5 %. The largest annual growth rate occurred at Saginaw Valley State University; it was 4.2 %. In second place was Grand Valley State at 4.0 %. Five of the fifteen campuses had negative compound average change rates, with Wayne State University (-0.7 %) and Michigan Technological University (-0.7 %) shrinking the most in total enrollment.

While the overall compound growth rate was 0.5 %, there were noticeable differences between the three largest universities and the remaining twelve campuses.

The three largest (MSU, UM-AA, and WSU) had a negative aggregate annual compound growth rate of - 0.2 %. On the other hand, the remaining universities had a growth rate of 1.1 %; this is a regional growth pattern that may indicate both student interest in smaller-size campuses during this period and possible parental interest in lower-tuition campuses.

Cyclic Growth

As Figure FYES1 displays, there have been two timeframes in this quarter-century with overall declines in FYES, namely FY 1977 to FY 1985 and FY 1992 to FY 1995. The declines were 8.2% and 5.1%, respectively. The first period of decline was predominantly a graduate-enrollment decline, while the second period was primarily a decline in undergraduates.

There have been two growth periods in those twenty-five years, FY 1985 to FY 1992 and FY 1995 to FY 2002. Remarkably, in both of those accelerated-growth timeframes, overall FYES growth was 14.1%. The first period was primarily a growth period in graduate enrollments, while the second time frame had almost balanced but slightly higher percentage growth in undergraduate enrollment.

Figure: RESIDENTUNDERGRAD1:

While resident undergraduates have declined in number at Wayne State and UM and showed a slight increase at MSU, they have increased almost continuously at the other state universities.

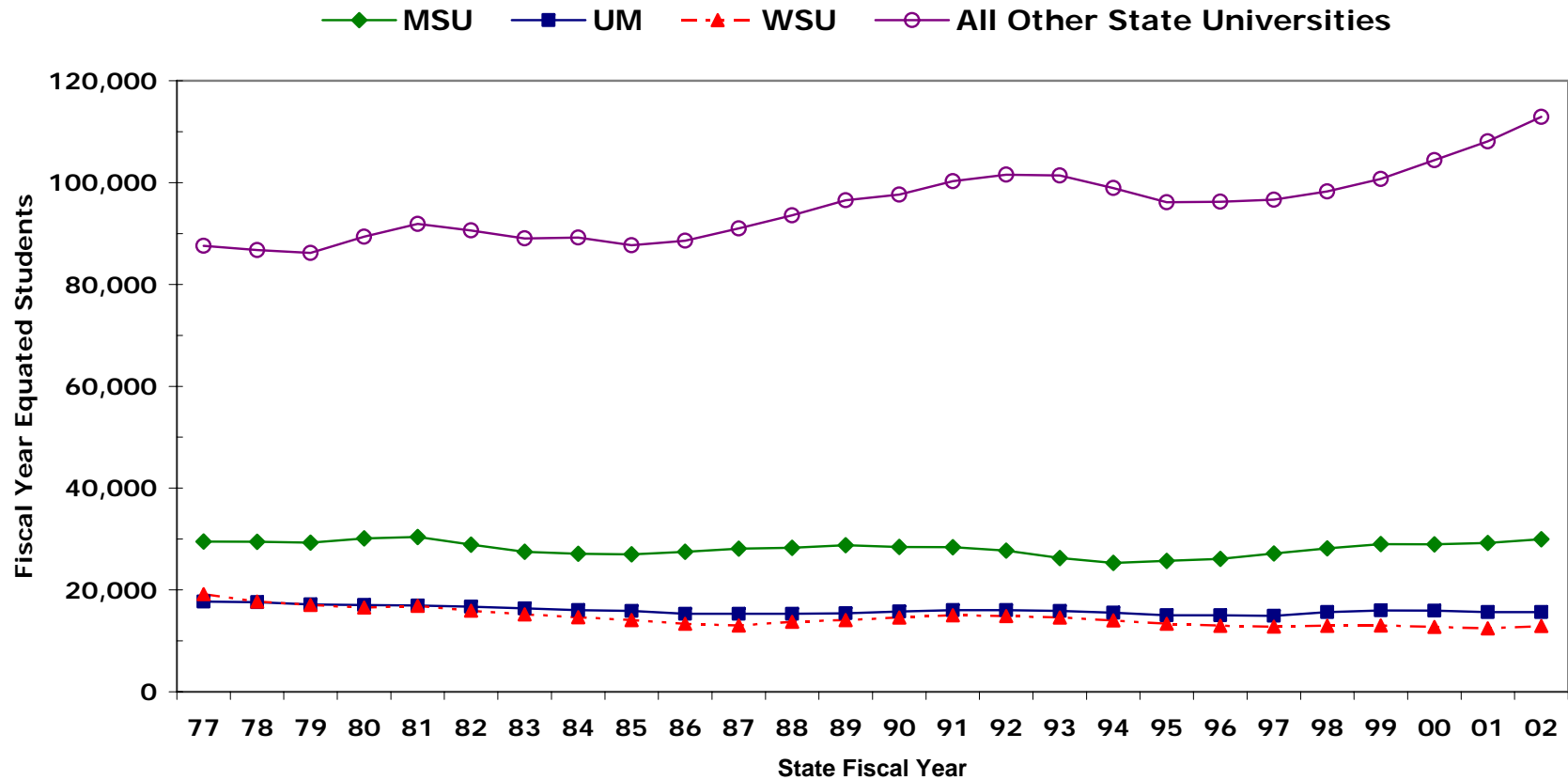


Figure RESIDENTUNDERGRAD1: Resident Undergraduate Students

Students attending Michigan public universities can be divided into two groups: (a) students who pay resident tuition, and (b) students who pay nonresident tuition. Since the majority of students among the fifteen state universities are undergraduates, a profile of the enrollment trend of students paying resident tuition is useful.

Figure RESIDENTUNDERGRAD1 displays the pattern of undergraduate enrollment by students who paid resident tuition in each academic year from 1976-77 through 2001-02.

Varying Trends Among Campuses

One immediately notices the varying trends among the universities represented on the chart. The resident undergraduate enrollment growth by the twelve state universities that are not the major research institutions has been enormous. They experienced a net increase of 25,000 resident undergraduates. That growth occurred in two waves: (a) FY 1986 through FY 1992, and (b) FY 1997 through FY 2002. Among these twelve, Ferris State, Michigan Tech, and Northern Michigan accounted for an aggregate decline of over 4,000 resident undergraduates. The decline in high school enrollment in the Upper Peninsula affected enrollment at the latter two universities.

During this same twenty-five year period, the University of Michigan at Ann Arbor reduced its resident undergraduate enrollment by over 2,000 students. That equates to a compound annual decrease of 0.5 %.

Meanwhile, Wayne State University transitioned from a primarily undergraduate to primarily graduate institution. WSU had over 6,000 fewer resident undergraduates, and it had a compound annual average decrease of 1.6 %.

Michigan State University had a modest increase of 460 resident undergraduates during this period. It had peaked in resident undergraduate enrollment in FY 1981, declined in waves through FY 1993, and then began a steady rise through FY 2002. It is now approaching the FY 1981 peak.

Questions Raised

This chart does raise a number of questions. For example, would the enrollment growth have been as large at the twelve other universities if Wayne State and the University of Michigan had not reduced their resident undergraduate admissions?

Did the enrollment decline at Michigan State from FY 1981 through FY 1993 contribute to the enrollment growth at the twelve universities? Or vice versa?

How will the fifteen state universities respond to the impending demographic decline in high school graduates which will begin in Michigan in FY 2008 or FY 2009? How will the universities react to the projected drop of 10,000 high school graduates over the subsequent four fiscal years?

Figure NONRESUNDEGRAD1:
 Since FY 1989, growth in nonresident undergraduate enrollment at the "other" state universities has begun to parallel that of the University of Michigan.

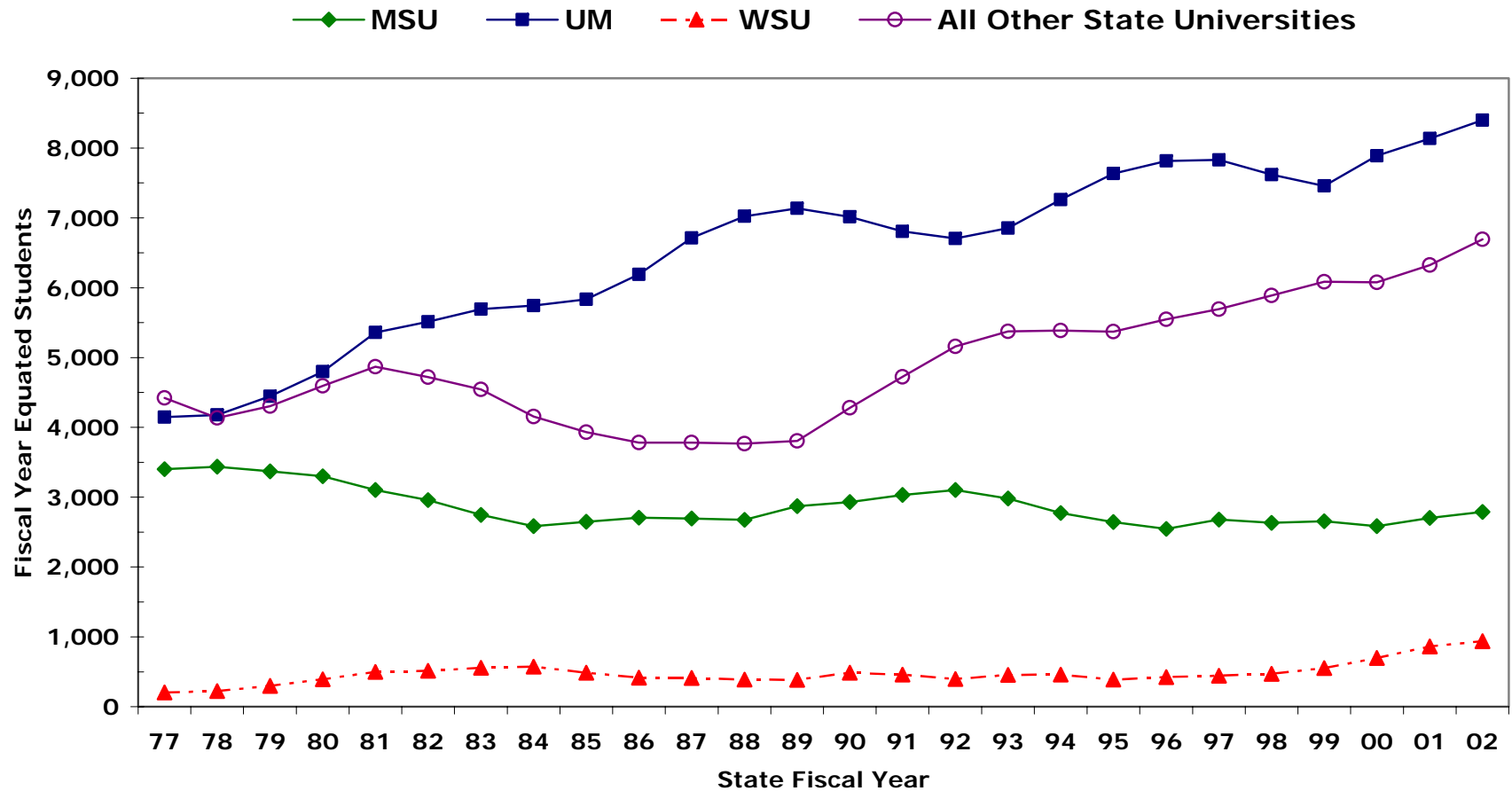


Figure NONRESUNDERGRAD1: Nonresident Undergraduate Enrollment Growth

Students attending Michigan public universities can be divided into two groups: (a) students who pay resident tuition, and (b) students who pay nonresident tuition. Since the majority of students among the fifteen state universities are undergraduates, a profile of the enrollment trend of students paying nonresident tuition is useful.

Figure NONRESUNDERGRAD1 displays the pattern of undergraduate enrollment by students who paid nonresident tuition in each academic year from 1976-77 through 2001-02.

The Big Trend

One immediately notices the varying trends among the universities represented on the chart. University of Michigan at Ann Arbor has increased its nonresident undergraduate enrollment by over 4,000 students. That equates to a compound annual increase of just under 3 %.

Meanwhile, Michigan State University has had fewer nonresident undergraduates enroll, and it had 610 fewer enrollees in 2001-02 than in 1976-77. While MSU had 28 % of the system's total nonresident undergraduate enrollment in FY 1977, by FY 2002 that figure had dropped to 15 %.

Wayne State University had a compound average increase of over 6 % during this same period, and it enrolled over 700 more nonresident undergraduates in 2001-02 than it did in 1976-77.

Paralleling UM's growth pattern has been that of the aggregate of the other twelve universities; they have seen a net increase of almost 2,300 nonresident undergraduates. Only Michigan Technological University had a decline during this period; it enrolled 92 fewer nonresident undergraduates.

Important Questions

Do a greater percentage of UM alumni live outside Michigan and thus increase the number of its "legacy" applicants (and subsequent admittees) from out of state?

One notices that UM had spurts of nonresident undergraduate enrollment growth in 1979-1982, 1986-1989, 1993-1996, and 2000-2002. Did UM increase its nonresident undergraduate enrollment in those periods to generate tuition revenue that would offset weak state appropriations?

How did the other twelve universities reverse their aggregate nonresident undergraduate enrollment decline after FY 1989?

What might be the reasons for Michigan State's decline in nonresident undergraduate enrollment? Has MSU concentrated its recruitment efforts within Michigan since 1978? Do more of its alumni live within Michigan and thus increase the number of its "legacy" applicants from within the state?

These questions are not answerable by use of HEIDI data.

Figure RESGRAD1:
 Since FY 1984, resident graduate enrollment at the "other" state universities has doubled; it increased about 10 % at the major research universities.

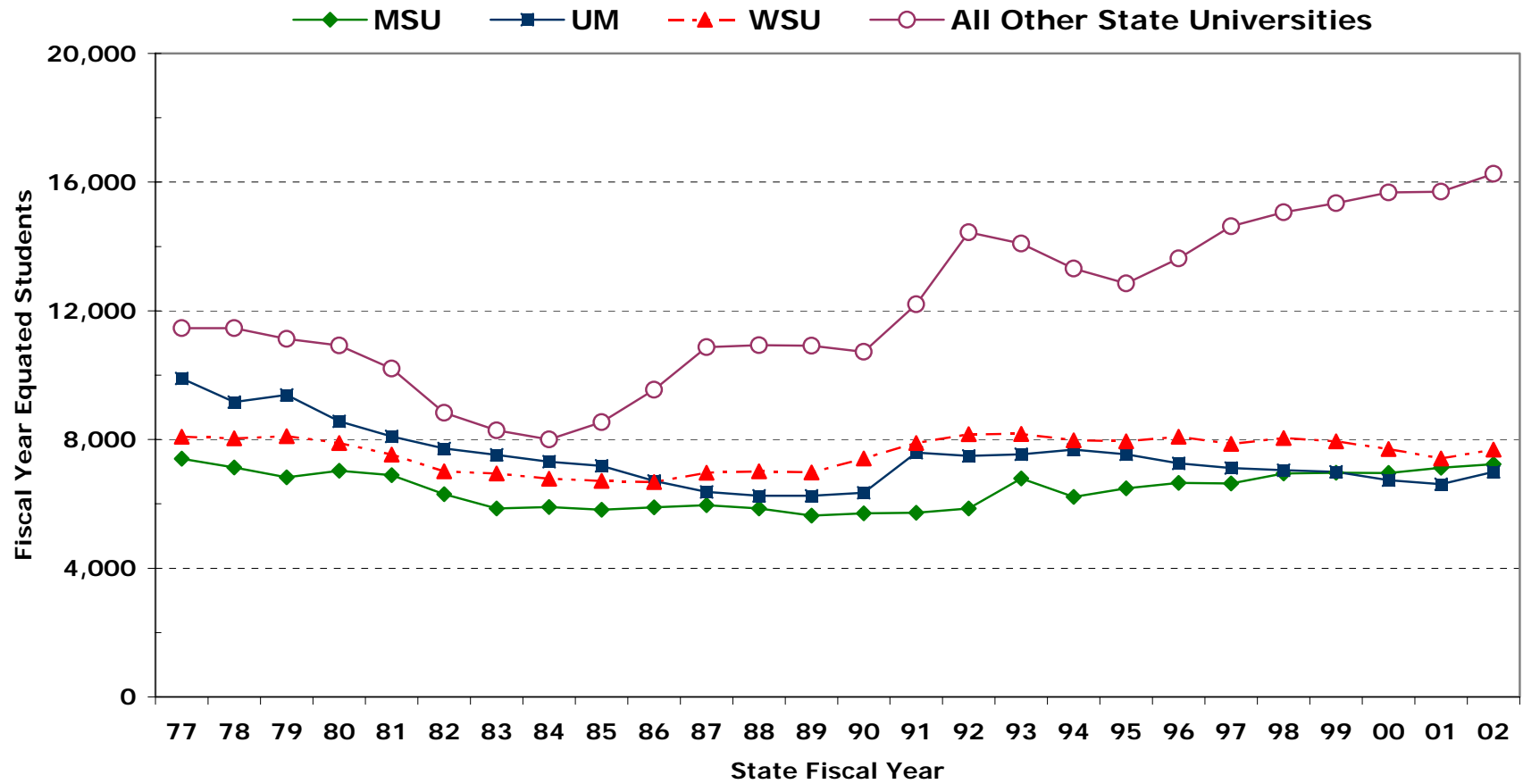


Figure RESGRAD1: Resident Graduate Students

The three major research universities have usually been identified as the institutions with the largest graduate enrollments among the fifteen state universities. That remained true in FY 2002 as it did in FY 1977.

Figure RESGRAD1 reports that trend. While all sectors displayed in that chart showed declines from FY 1977 through FY 1984, the “other” universities shifted to a growth mode in FY 1985. Wayne State countered its previous trend beginning in FY 1987, and Michigan State began to increase its resident graduate enrollment in FY 1992.

Big Three Dominate

MSU generally declined in its resident graduate enrollment into FY 1992. Then it began a steady increase through FY 2002. While the total number of resident master’s degree students decreased by 10 % and the number of resident doctoral degree students declined very slightly at MSU, the number of resident professional degree FYES surged by nearly 40 %. The University of Michigan enrolled 20 % fewer resident doctoral students in FY 2002 than in FY 1977. The number of resident master’s degree students in FY 2002 was 35 % fewer than in FY 1977. Furthermore, the number of resident students in professional degree programs in FY 2002 was about 28 % lower.

The spike up in UM’s resident graduate FYES from FY 1990 to FY 1991 was caused by a change in policy concerning the reporting of doctoral candidates. Since residents and nonresidents paid the same tuition rate for the final phase of their doctoral work, in FY 1991 UM began reporting those students as resident graduate students under the HEIDI guidelines that students are reported by tuition-payment status.

Comparing FY 1977 and FY 2002 figures, Wayne State enrolled 8 % more resident master’s degree candidates, 2 % more resident professional degree students, and 42 % fewer resident doctoral students.

The Other Twelve

However, the “other” twelve state universities have increased their resident graduate enrollments, primarily at the master’s degree level, so that about 43% of resident graduate enrollment in FY 2002 was at those universities. That trend is likely to continue.

Figure NONRESGRAD1:
While UM continues its steady nonresident graduate student enrollment growth since FY 1991 and is now joined by Wayne State and the other twelve state universities, Michigan State has continued its decline in this category of students.

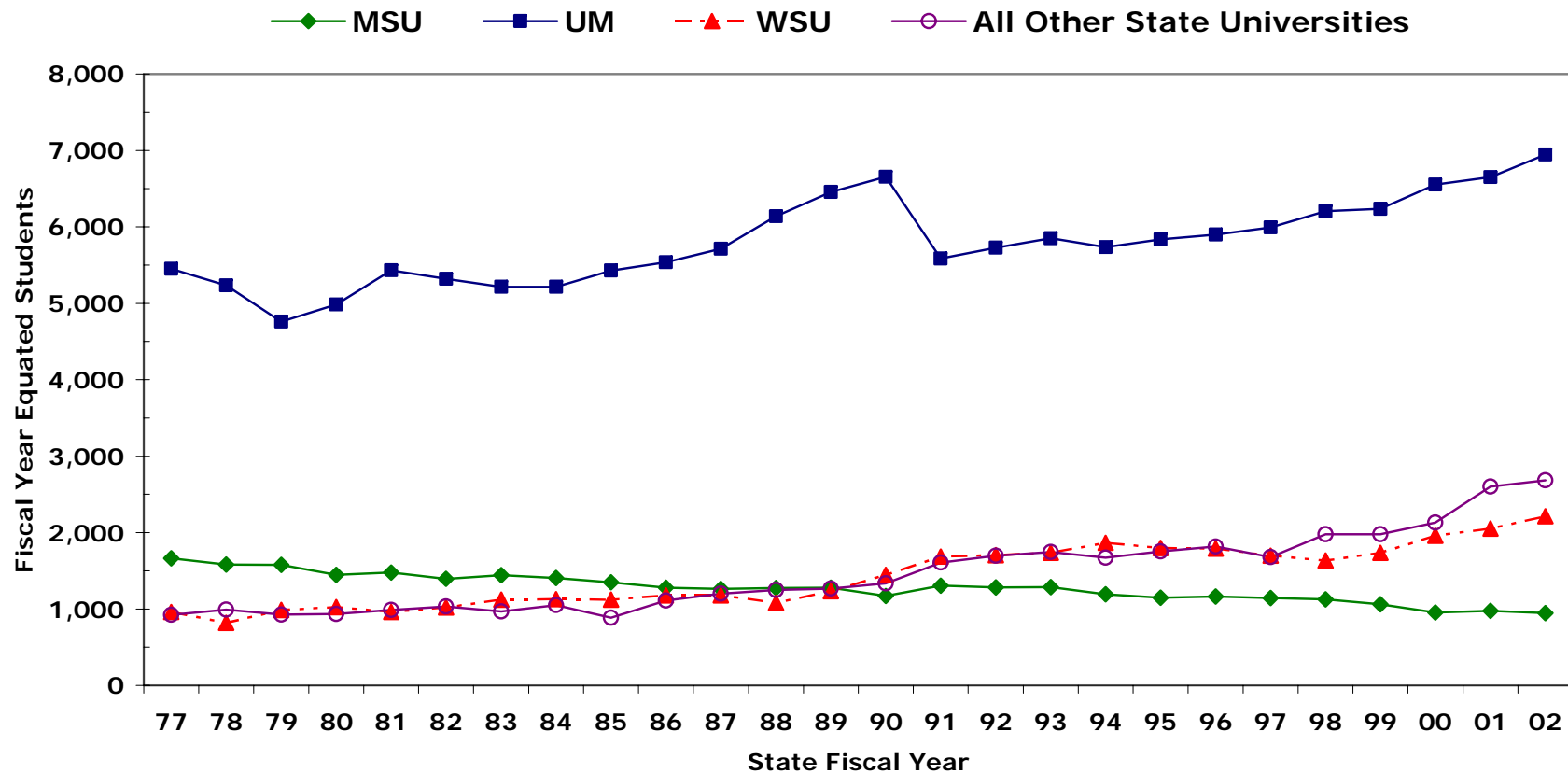


Figure NONRESGRAD1: Nonresident Graduate Students

Figure NONRESGRAD1 displays the pattern of graduate enrollment by students who paid nonresident tuition in each academic year from 1976-77 through 2001-02.

One immediately notices the differential patterns among the universities on the chart. Since FY 1977, the three major research universities have been on divergent paths concerning reduced nonresident graduate enrollment. The largest numerical increase has occurred at the University of Michigan, where nearly 1,500 more nonresident graduate students were enrolled in FY 2002 than in FY 1977. Wayne State also had a large increase approaching 1,300. On the other hand, Michigan State saw its nonresident graduate enrollment decline by over 700 FYES.

Growth at “Other” Institutions

The nonresident graduate enrollment growth by the other twelve state universities has been substantial since FY 1989.

They experienced a net increase of 1,200 nonresident graduate enrollees, approximately a 100 % increase. That growth has been fairly steady through FY 1997 and has accelerated since. The numerical enrollment growth in nonresident graduate students has been most prominent at Western Michigan, Central Michigan, Michigan Tech, and Eastern Michigan Universities. Northern Michigan has experienced the largest decline, a loss of 84 FYES.

The large visible drop in nonresident graduate enrollment at UM in FY 1991 was caused by a change in reporting policy. Since resident and nonresident doctoral candidates paid the same tuition rate for the final phase of their doctoral work, UM began reporting those students as resident graduate students. Hence, the number of nonresident graduate students reported in the HEIDI database dropped in that year.

UNIVERSITY EMPLOYEES

Figure FACULTY1:

The number of full-time equivalent faculty has grown primarily at the "other" state universities and consists substantially of short-term and non-tenure track faculty.

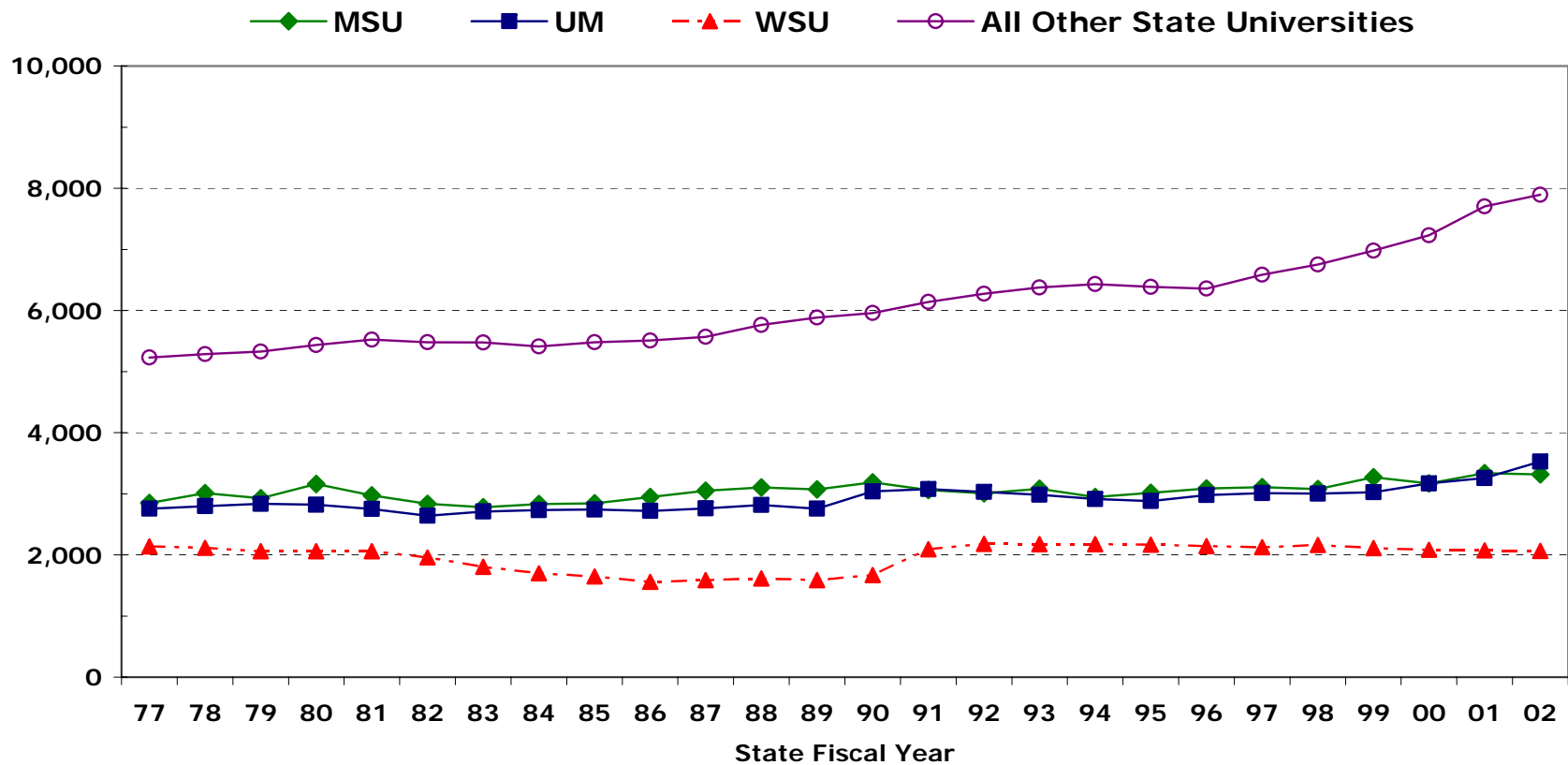


Figure FACULTY1: Full-time Equivalent Faculty

Figure FACULTY11 reports the employment trend of full-time equivalent (FTE) faculty in each academic year from 1976-77 through 2001-02. Full-time equivalent faculty is the sum of the number of full-time faculty and the number of part-time faculty converted to full-time equivalency.

Employee Growth Parallels Enrollment

One immediately notices that the non-major research universities have increased the number of full-time equivalent faculty during this period. This 51 % growth from about 5,200 to 7,900 is mainly attributable to the enrollment growth for those institutions which was displayed in Figure FYES1. The expansion in fiscal year equated students was nearly 33 % in this period.

The major research universities had a 15 % increase in FTE faculty during this same period. While MSU and UM both increased the number of faculty, Wayne State appears to have

reduced its FTE faculty by 3 %. However, former WSU president David Adamany indicated in a letter responding to my 1990 study that WSU had inadvertently underreported faculty numbers to the HEIDI database in the late 1970s and early 1980s. Thus, WSU's reduction in FTE faculty as shown in this graph is understated.

Differential Growth

Much of the growth in FTE faculty during this period, at both the major research universities and the other twelve institutions, was in the number of unranked faculty members. Many of these staff members were short-term or part-time employees and certainly not tenured or tenure-track faculty.

This pattern of employment growth enabled the universities to restrain faculty compensation spending more than if full-time, tenure-track faculty had been hired. That compensation outcome is displayed in charts in a later section of this report.

Figure NONFACULTY1:

The growth in the number of non-faculty employees has occurred primarily at the state universities that are not major research universities and may be linked to the substantial enrollment growth that has occurred at those institutions.

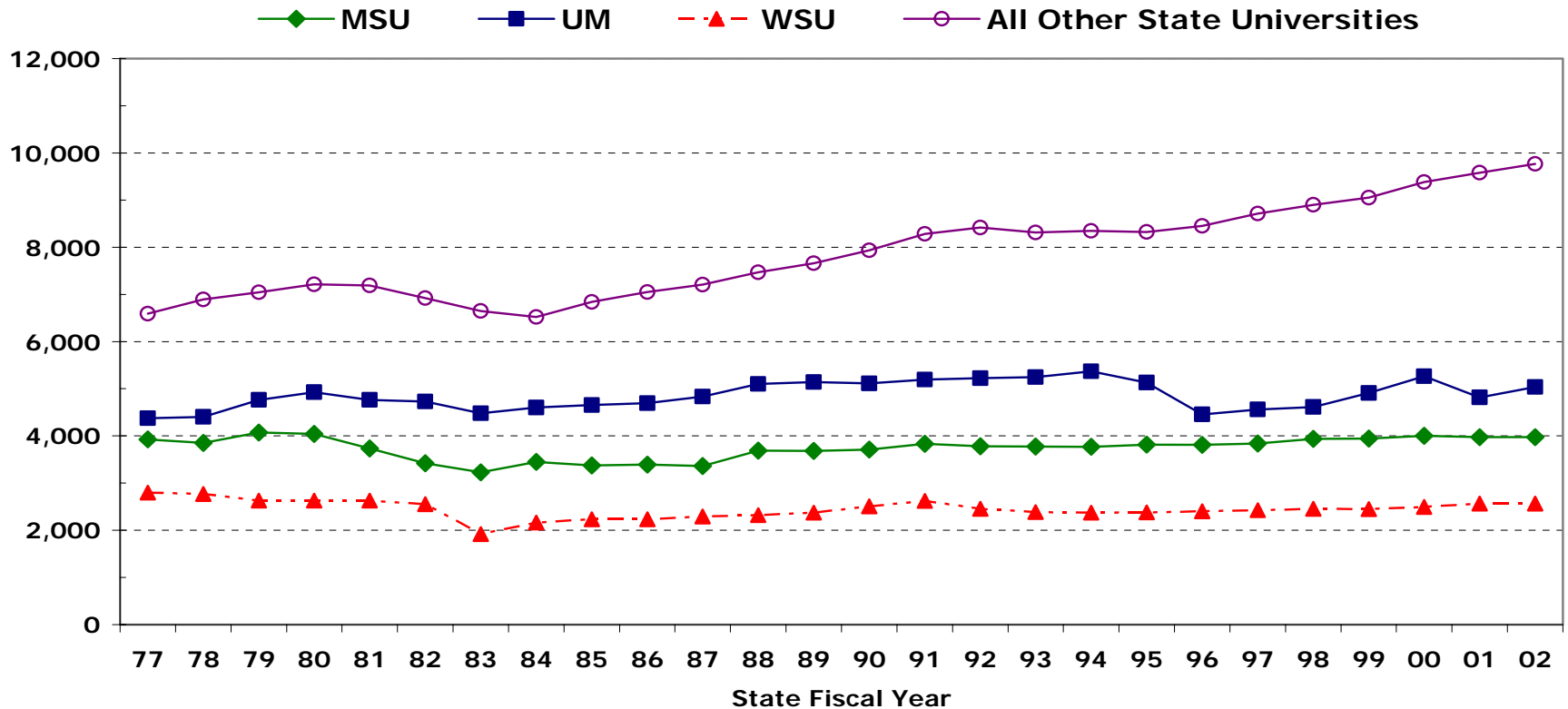


Figure NONFACULTY1: Full-time Equivalent Non-faculty Employees

In addition to faculty employees, the state universities have a number of noninstructional employees on their payrolls. These staff members enable the universities to manage the organization and fulfill noninstructional responsibilities.

Figure NONFACULTY1 reports the trend in the number of employees in this broad category. Just as in Figure FACULTY1, the twelve state universities that are not the major research campuses saw their noninstructional cadre grow from FY 1985 to FY 2002. That period coincides with the time frame of increasing enrollment at those institutions.

The 48 % aggregate increase at the twelve universities was not matched at the three major research campuses. While Wayne State reduced its noninstructional staff by 8.3 % from FY 1977 to FY 2002, Michigan State increased its staff by 1.3 % and UM by 15.2 %.

As the graph displays, most universities reduced their noninstructional staff from FY 1980 through FY 1983 as the state economy soured and state appropriations per FYES plunged. Then a gradual increase occurred at most campuses.

The substantial growth in administrative/professional employees since FY 1983 has been concentrated in four institutional areas: (a) institutional support, (b) individual and project research, (c) institutes and centers, and (d) computing support.

Wide Fluctuation over Time at UM

While MSU and WSU reported fairly steady noninstructional staffing between FY 1994 and FY 2002, UM showed wide variation in numbers; the pattern was down 700, up 800, down 400, and up 200 in that eight-year period. For example, between FY 1995 and FY 1996, UM reduced its administrative/professional staff by 300 and its service staff by 380.

By FY 2001, the Ann Arbor campus had increased its administrative/professional staffing through new hires and through reclassification of some service staff to administrative/professional status. At the same time, it had reduced the number of its remaining service staff.

Figure FYESPERFACULTY1:
 The ratio of Fiscal Year Equated Students to full-time equivalent faculty has declined about 0.5 % annually since FY 1977.

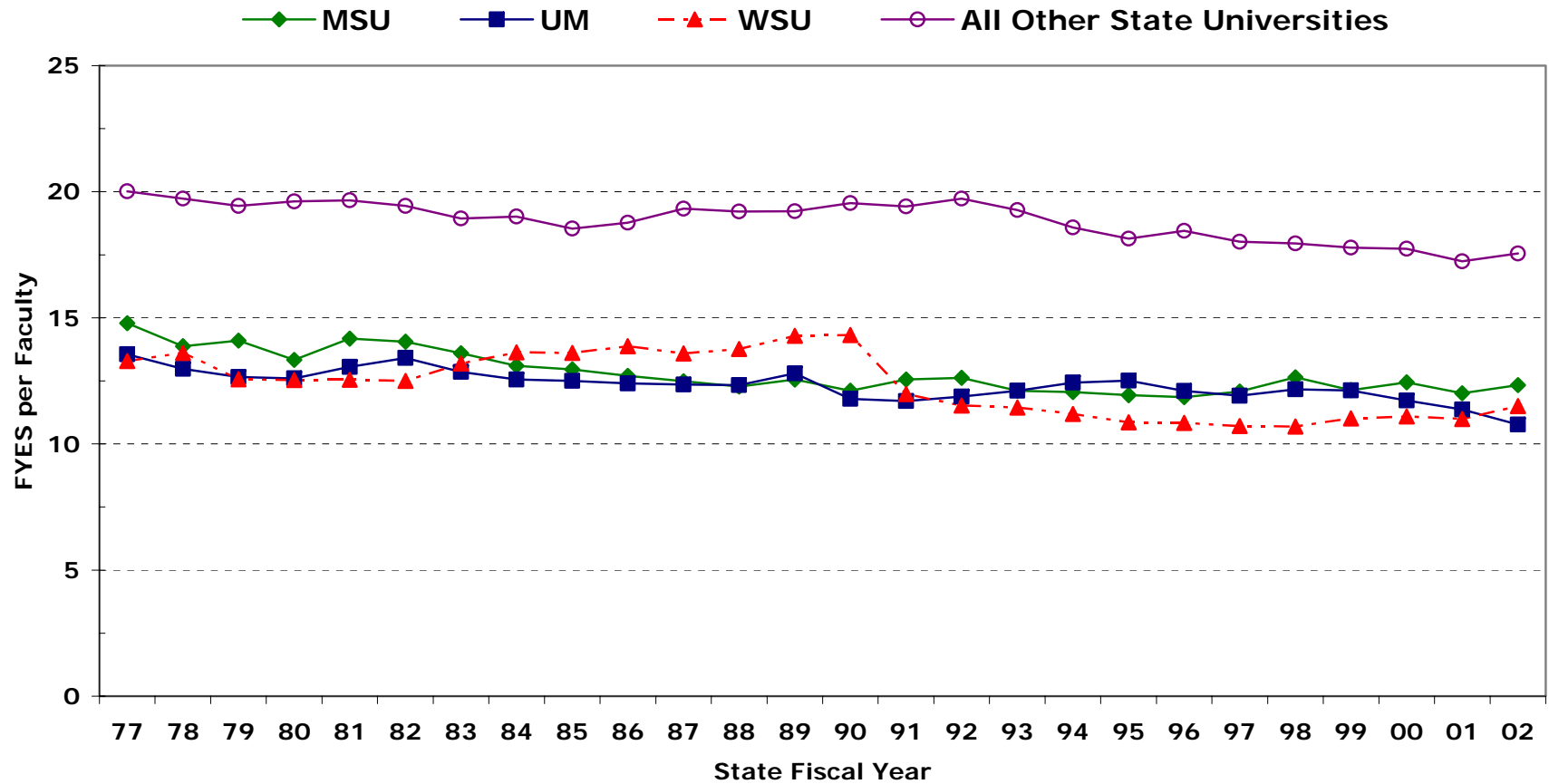


Figure FYESPERFACULTY1: Fiscal Year Equated Students per Faculty Member

An examination of the higher education enterprise frequently turns to a consideration of faculty productivity. One method of gauging that measure would be to divide the number of students enrolled by the number of faculty.

Figure FYESPERFACULTY1 displays that ratio for the three major research campuses and for the aggregate of the other twelve state universities. An initial observation is that the research universities clearly differ from the other campuses on this measure. While the twelve campuses in FY 1977 had employed faculty to instruct enrolled students at a ratio of about 20 students per FTE faculty member, the major research universities had ratios that coalesced around a ratio of 14 to 1. Former WSU president David Adamany indicated in a letter responding to the 1990 study that WSU had underreported faculty numbers in the late 1970s and early 1980s. Thus, WSU's ratio in that period is likely to be slightly overstated.

Declining Ratios

By FY 2002, the ratio of FYES to FTE faculty had declined for the four categories displayed in this chart. The major research universities had reached ratios of 12 to 1; the other twelve universities now had a ratio of about 18 FYES to each FTE faculty.

One explanation for the decline in the ratio for the "other" twelve state universities is the small shift that has occurred in the ratio of graduate students to total FYES. In FY 1977, graduate students on those campuses composed about 12 % of total FYES. In FY 2002, that percentage had risen to 14 %. With smaller class sizes at the graduate level, a portion of the decline displayed in this chart is likely due to that increase in graduate enrollment.

At the major research universities, about 31 % of FYES in FY 1977 were graduate students. In FY 2002, the percentage was very similar. Hence, change in the graduate student proportion of total enrollment at those institutions does not appear to explain the trend to smaller student-to-faculty ratios.

Figure FYESPERNONFACULTY1:
 The ratio of Fiscal Year Equated Students to full-time equivalent non-faculty employees has declined very slightly in this period. In FY 2002 the major research universities were clustered with similar ratios as in FY 1977.

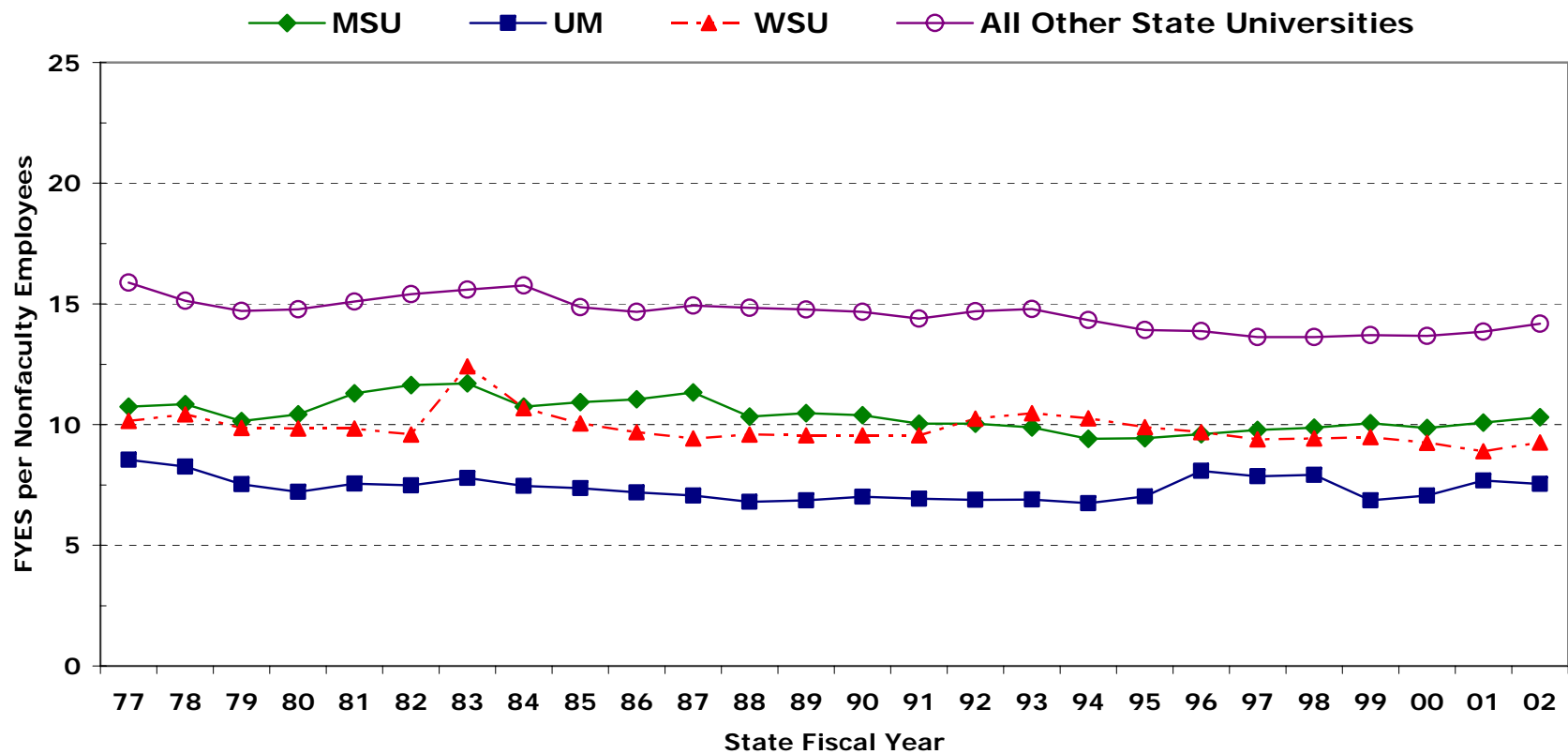


Figure FYESPERNONFACULTY1: Fiscal Year Equated Students per Non-Faculty Employees

After reviewing the student to faculty ratios displayed in Figure FYESPERFACULTY1, we now turn our attention to noninstructional staff.

Declining Ratio

Figure FYESPERNONFACULTY1 displays the ratio of the sum of administrative/professional (A/P) and service staff for the three major research campuses and for the aggregate of the other twelve state universities. One notices a slight shift downward over time for all of the universities.

What may be evident on this chart is development of what is called an administrative “lattice,” which involves an increase in the number of non-instructional employees connecting a university’s infrastructure. Cost efficiencies frequently require revision or dismantling of the “lattice.”

At the beginning of this time period, the research universities had ratios about two-thirds of the “other” state universities.

That is, there were fewer students per non-faculty employee at the major research universities. And at the end of the twenty-five years, the three major research campuses were similarly positioned.

UM had the fewest students per noninstructional employee (or, conversely, the most employees per FYES) at both the beginning and the end of this time frame. MSU had the highest ratio (or fewest employees per FYES) among the three major research universities during this period.

During this twenty-five year period, there was aggregate decline in the ratio among the twelve other state universities. And that decline was greater in percentage terms than at the three major research campuses. OU, WMU, NMU, and SVSU ran counter to this trend with more students per non-faculty employees at the end of this time frame.

Figure FACULTYAVGCOMP1:
 The range of the inflation-adjusted average compensation of university faculty has broadened slightly during this quarter of a century.

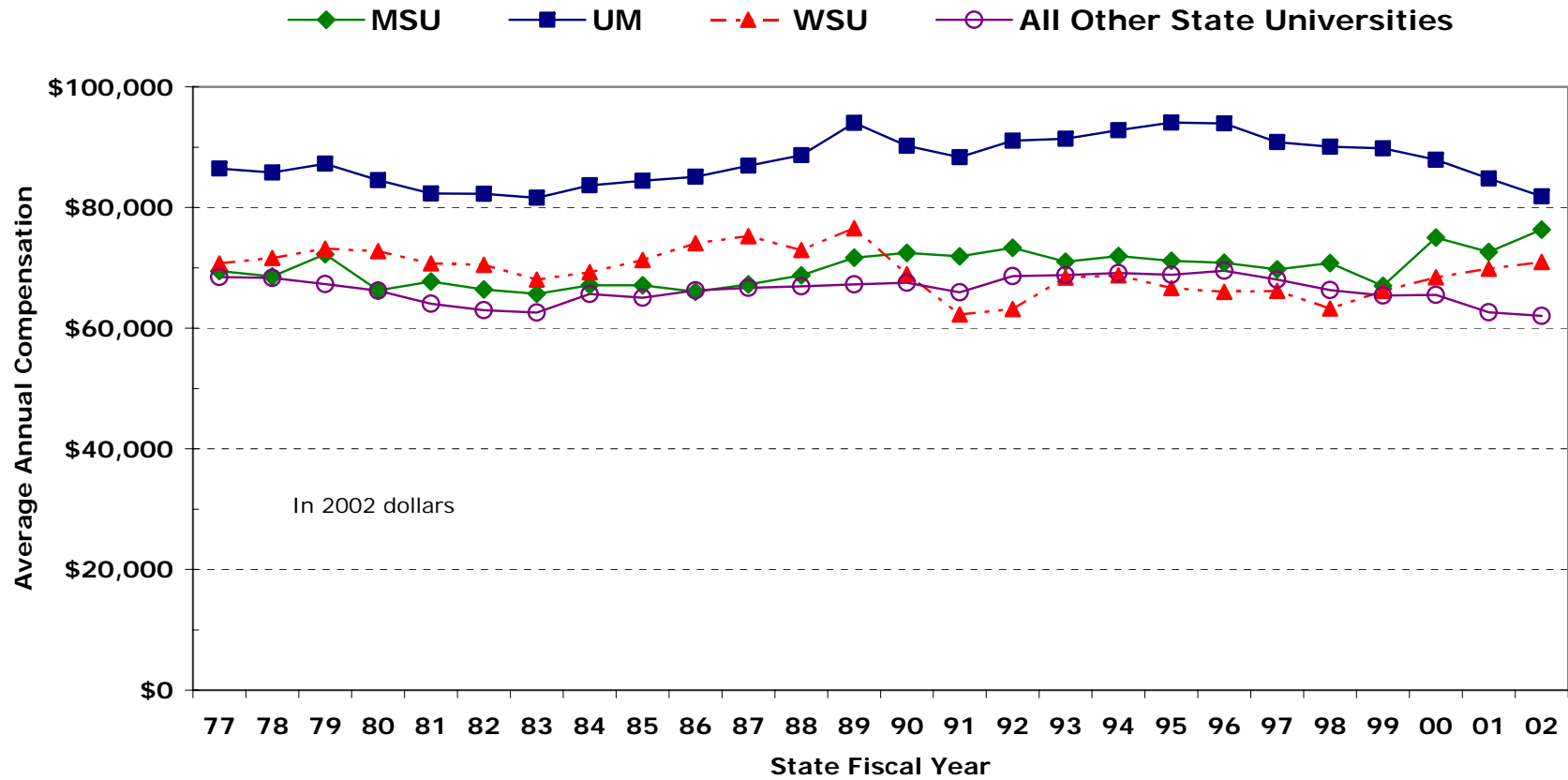


Figure FACULTYAVGCOMP1: Average Compensation of All Faculty

After reviewing the student to faculty ratios displayed in the previous charts, we now turn our attention to average compensation levels of faculty.

Figure FACULTYAVGCOMP1 displays the average compensation of all faculty members employed by a state university. The figures displayed include full-time and part-time, tenured and tenure-track, and other faculty.

Some interesting dynamics seem to be displayed in this chart. The range among campuses in average faculty compensation in FY 1977 displayed on this chart was about \$26,000. By FY 2002 that range had increased to \$28,000.

More Non-Tenure Track Faculty

In recent years the average compensation of faculty at the UM and of the aggregate of the other twelve state universities have shown declines relative to inflation as measured by the Higher Education Price Index. A contributing factor to this phenomenon of lower average compensation levels is the

expansion of faculty numbers outside the tenure-track and tenured categories. These employees tend to receive lower salaries (and lower total compensation), and thus the average compensation tends to decrease even as the compensation level of permanent tenured faculty increases.

In FY 2002 between 3 and 4 out of every 10 faculty employed at Michigan's fifteen state universities were short-term or non-tenure track employees. At the beginning of this quarter of a century, about 2 out of 10 faculty had similar academic appointments.

In FY 2002 the three campuses with the highest average compensation for all faculty were UM, MSU, and Michigan Technological University. The three state universities with the lowest average compensation for all faculty were Lake Superior State, Central Michigan, and Grand Valley State Universities.

Figure NONFACULTYAVGCOMP1:
The range of the average compensation of non-faculty (administrative/professional and service) employees has broadened as the number of employees has increased by 20 %.

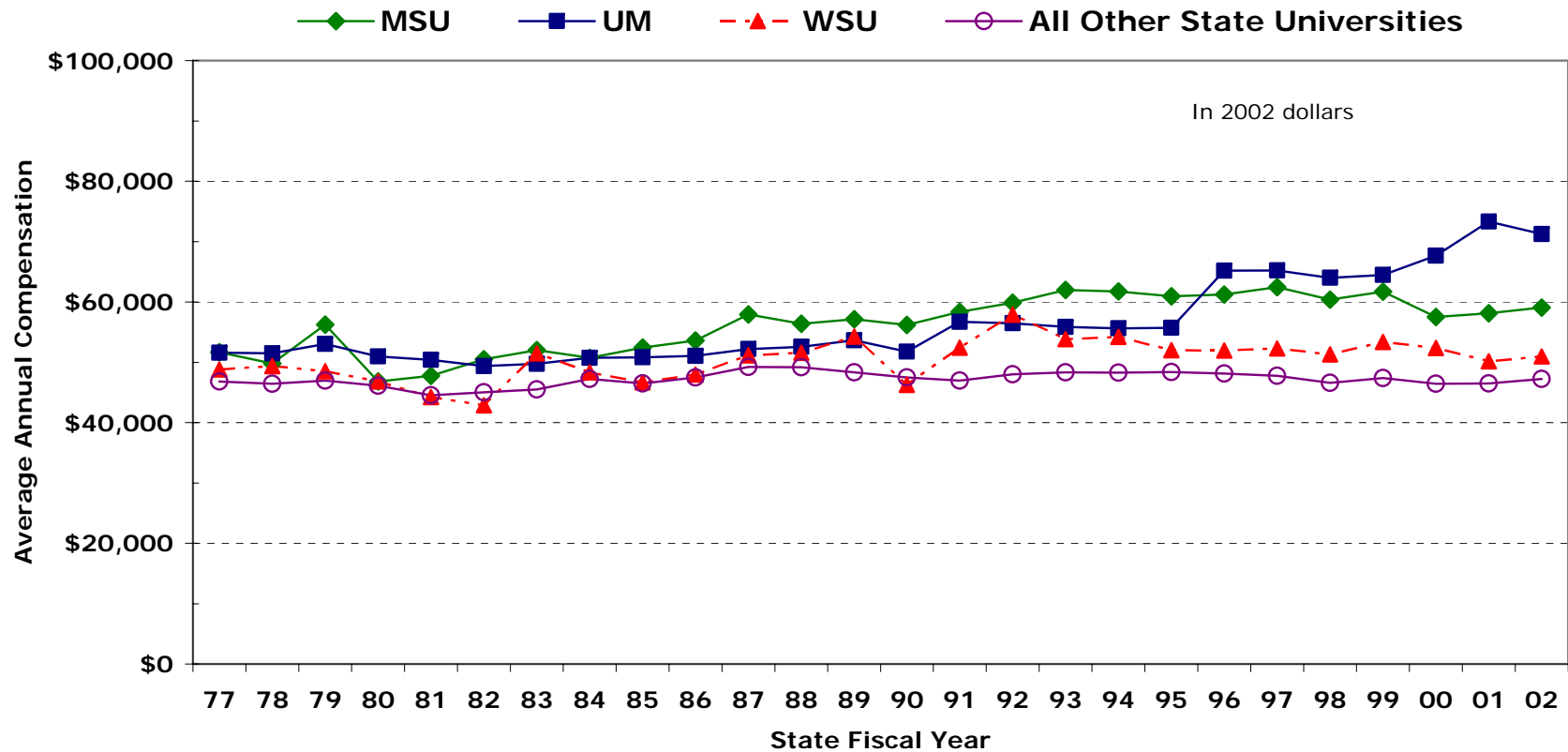


Figure NONFACULTYAVGCOMP1: Average Compensation of Non-faculty Employees

We now turn our attention to the average compensation levels of non-faculty at the fifteen state universities. While display of the average compensation levels of administrative/professional employees and service employees in separate charts might seem appropriate, reclassification of these non-faculty by several universities during the 1990's would create profile discontinuities. Hence, this chart reports the average compensation levels for both groups combined.

The chart also does not include the number and compensation of Agricultural Experiment Station and Cooperative Extension Service employees at Michigan State. Including those figures would have increased the average compensation at the beginning of this period and would have had a very minor effect on average compensation in FY 2002.

Figure NONFACULTYAVGCOMP1 displays the average compensation of all non-faculty employees. The figures displayed include full-time and full-time equivalent staff as reported in the HEIDI database.

Compensation Range Expanding

As shown, in FY 1977 the average annual compensation clustered around \$50,000 (in 2002 dollars). That pattern continued through FY 1984, when the range between lowest and highest average compensation began expanding.

MSU's non-faculty average compensation increased beginning in FY 1985, and it held the top position until FY 1996. The one-year burst by the UM in FY 1996 was caused by a reported

reduction in both the number of administrative/professional and service employees without a comparable reduction in total compensation. As a consequence, the average compensation jumped by nearly 20 %. It may be that additional responsibilities were assigned to the remaining non-faculty employees, with a corresponding increase in compensation. However, the HEIDI database does not have information to verify this conjecture.

UM continued to increase its non-faculty average annual compensation from FY 1999 forward, while MSU and Wayne State's inflation-adjusted levels were lower in FY 2002 than in FY 1999.

In FY 2002, the three universities with the highest average compensation for non-faculty employees were UM, MSU, and Oakland University. The lowest were Lake Superior State, Grand Valley State, and Central Michigan Universities.

During this quarter-century, the average annual compensation increase for non-faculty employees at the fifteen state universities was about 0.5 % above inflation as measured by HEPI. The comparable figure for average faculty compensation in the same period was a negative 0.15 % annually.

It appears that the universities in general were more successful in cost containment for faculty than for non-faculty in this historical period.

STATE APPROPRIATIONS

Figure APPROPS1:
Higher Education Price Index-adjusted state appropriations per
Fiscal Year Equated Student for the aggregate of all state
universities have been trending lower since FY 1987.

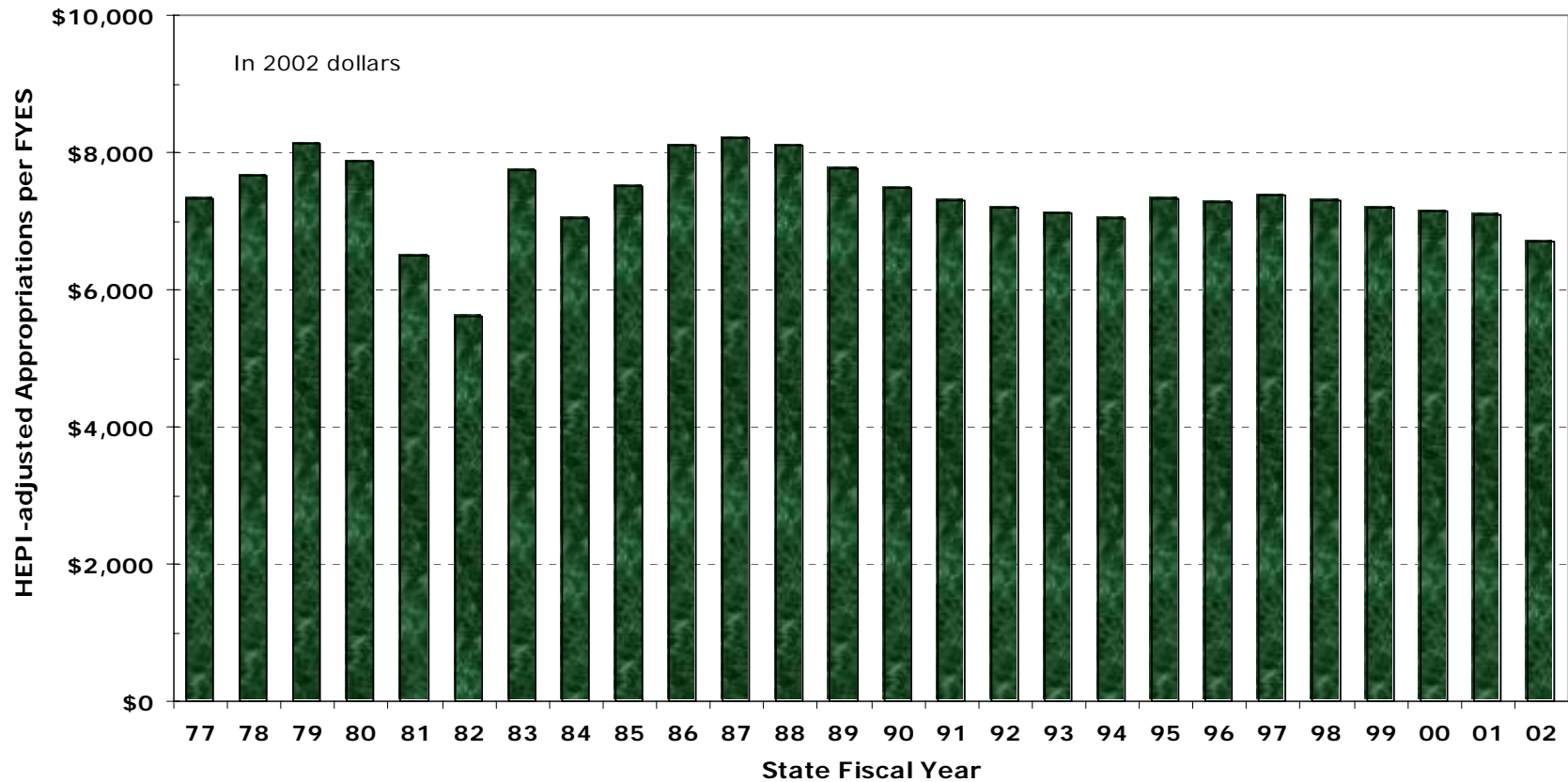


Figure APPROPS1: State Operations Appropriations per FYES

As described in the narrative accompanying figure INDICES1, the Higher Education Price Index (HEPI) provides a benchmark on distinctive higher education expenditures.

Figure APPROPS1 displays the operations appropriations per Fiscal Year Equated Student (FYES) contained in the annual higher education appropriations act. It does not include appropriations to MSU for the Agricultural Experiment Station and the Cooperative Extension Service, since those two sectors do not have tuition revenue streams. Inclusion of those appropriations might skew comparisons with other campuses.

From an FY 1977 level of \$1.56 billion, HEPI-adjusted total operations appropriations grew at a compound average annual increase of 0.15 % during the twenty-five year period.

However, when one considers enrollment growth in the same timeframe, HEPI-adjusted appropriations per FYES has had a negative compound annual average growth rate (- 0.36 %). Parenthetically, the compound annual growth rate for CPI-adjusted appropriations per FYES was 0.26 %.

FY 1987 was the peak year for HEPI-adjusted appropriations per FYES; the funding level was \$8,207 per FYES (in 2002 dollars). Since that peak year, the compound average annual growth rate has been negative (- 1.35 %).

A portion of the spike in FY 1983 appropriations is attributable to restoration of the \$80 million cut in Executive Order 1982-4, one of four E.O.'s affecting the FY 1982 budget.

When one calculates the compound average annual growth rate for the fifteen campuses, one discovers varied patterns of funding that are closely but not exclusively linked to enrollment growth.

Big Three

Of the three largest campuses, only UM-Ann Arbor has had a negative growth rate in HEPI-adjusted appropriations per FYES (- 0.29 %). Its appropriations per FYES level peaked in FY 1987. Wayne State had a per-FYES growth rate of 0.7 % annually, and MSU registered a 0.2 % per-FYES growth rate in this twenty-five year period.

Two other campuses had HEPI-adjusted positive annual per-FYES growth rates: Michigan Tech (0.95 %), due partially to deliberate enrollment retrenchment, and Ferris State (0.63 %).

Of the ten campuses that had negative growth rates per FYES in this timeframe, the largest negative rates were registered by Saginaw Valley (-1.92 %), UM-Flint (-1.81 %), and Grand Valley (-1.57 %). SVSU and GVSU experienced the largest enrollment growth rates among the fifteen campuses.

GVSU experienced its highest funding level per FYES in FY 1983, the year of its lowest enrollment. SVSU's highest funding level occurred in FY 1979, just after it began nearly-continuous enrollment growth through FY 2002. UM-Flint began the quarter-century with a high per-FYES funding level, and it has declined over time.

Figure APPROPS2:
Except for a period in the late 1980's, operations appropriations per Fiscal Year Equated Student have generally not kept pace with the Higher Education Price Index.

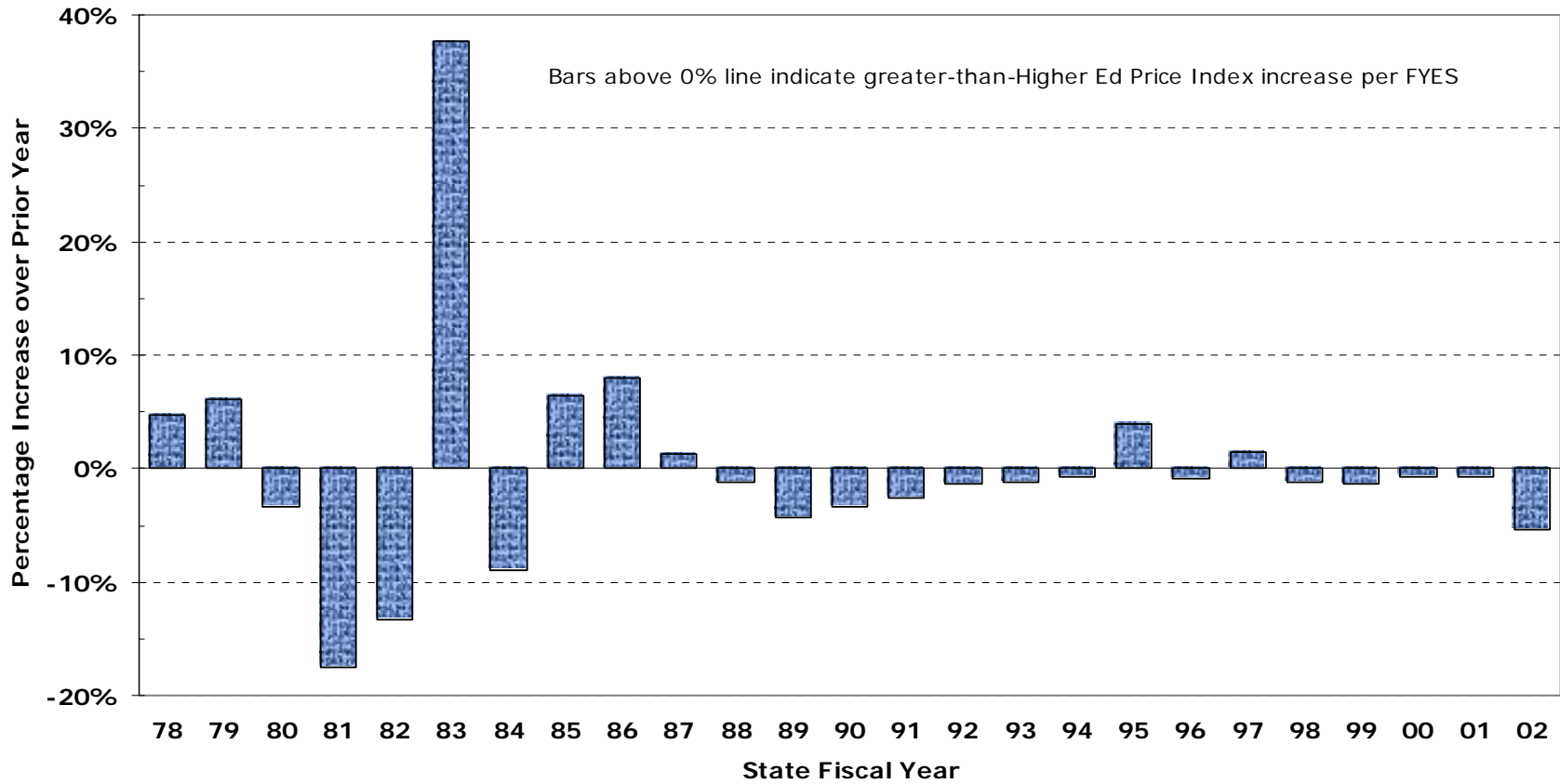


Figure APPROPS2: Annual Growth in HEPI-adjusted Appropriations per FYES

Figure APPROPS2 displays the growth in higher education operations appropriations since FY 1977, adjusted for enrollment growth and purchasing power (using the Higher Education Price Index).

The quarter-century began with percentage increases exceeding HEPI at a time when enrollment was declining system-wide. Then state appropriations were drastically reduced in the severe recessionary years of FY 1981 and FY 1982. Most but not all of the per-FYES reductions in the prior two fiscal years were restored in FY 1983; that accounts for the reported nearly 40 % increase year-over-year . The observable decline in FY 1984 was due to the one-time prior-year restoration of an \$80 million cut in funding in FY 1982. The following three fiscal years (FY 1985 through FY 1987) then had per-FYES appropriation increases exceeding HEPI.

However, as enrollment growth accelerated in the late 1980's and early 1990's, state appropriations per FYES did not keep pace with enrollment and the HEPI. The per-FYES amounts began a decline in FY 1998 which has lasted almost continuously through FY 2002. From FY 1987 to the present, there have been only two fiscal years (1995 and 1997) when per-FYES appropriations increases were greater than HEPI.

Using Detroit CPI instead of HEPI

If one used the Detroit Consumer Price Index (DCPI) rather than HEPI, this chart would still very closely resemble Figure APPROPS2. During this period, HEPI exceeded DCPI by an average 0.6 % annually. Differences in the charts would be slightly noticeable in FY 1979, FY 1980, FY 1983, and FY 1987. The per-FYES calculations for FY 1992, FY 1998, FY 2000, and FY 2001 would show slight increases rather than decreases as DCPI lagged HEPI.

One impact of these appropriation funding patterns has been a shift to students and parents as a significant payer of college costs. In effect, the state university system has become more of a user-based (and user-paid) enterprise than it had been in the 1970's.

This shift has been accompanied by a per-capita personal income growth pattern exceeding both DCPI and HEPI growth annually since FY 1985 (see Figure INDICES1 earlier in this document).

Figure APPROPS3
Higher Education Price Index-adjusted operations appropriations
per Fiscal Year Equated Student peaked in FY 1987 for most
universities.

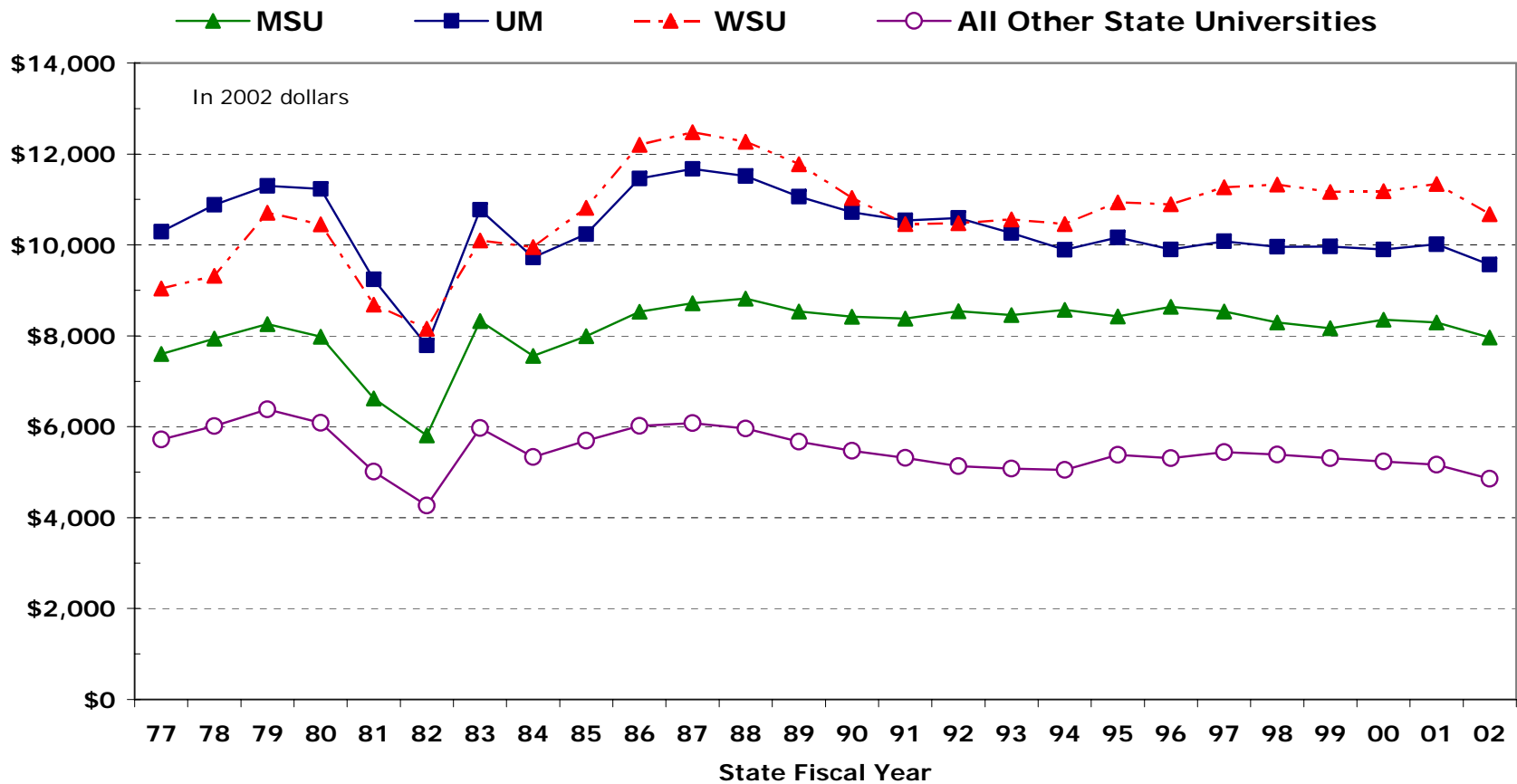


Figure APPROPS3: State Appropriations per Fiscal Year Equated Student

A comparison is occasionally made among universities using the ratio of state appropriations to Fiscal Year Equated Student (FYES). Figure APPROPS3 reports that data, adjusted for inflation, for each fiscal year since FY 1977.

The first noticeable aspect of this chart is the range of state support per FYES since FY 1977. Using inflation-adjusted figures, the range from highest to lowest was \$4,571 per student. It appears as though state lawmakers had appropriated funds at that time on factors other than enrollment alone. Twenty-five years later, the range had grown to \$5,824 per student. And a major contributing factor to expansion of that range was the varied enrollment trends among the fifteen campuses.

Enrollment Impact

While UM was the highest-funded per-FYES state university in FY 1977, WSU had achieved that category in FY 2002. While UM rose slightly in total enrollment, WSU had suffered a sizable decline in FYES during this quarter-century. Since the figures displayed are ratios, UM and WSU switched places on the chart.

The pattern shown in the latter time period of this chart corresponds to the almost annual less-than-higher education inflation appropriations per FYES displayed in Figure APPROPS2 for FY 1988 through FY 2002.

The range among the three major research universities at both the beginning and at the end of this period was about \$2,700 per FYES. For the twelve other state universities, the FY 1977 amount was \$5,700 per FYES. At the end of this quarter-century, the amount was \$4,800 per FYES, a considerable decline.

Figure APPROPS4:
State appropriations per FYES for university operations (APFYES)
as a percent of Michigan Per Capita Personal Income (MPCI) and as
a percent of Michigan Per Capita Disposable Personal Income
(MPCDI) have declined since FY 1987.

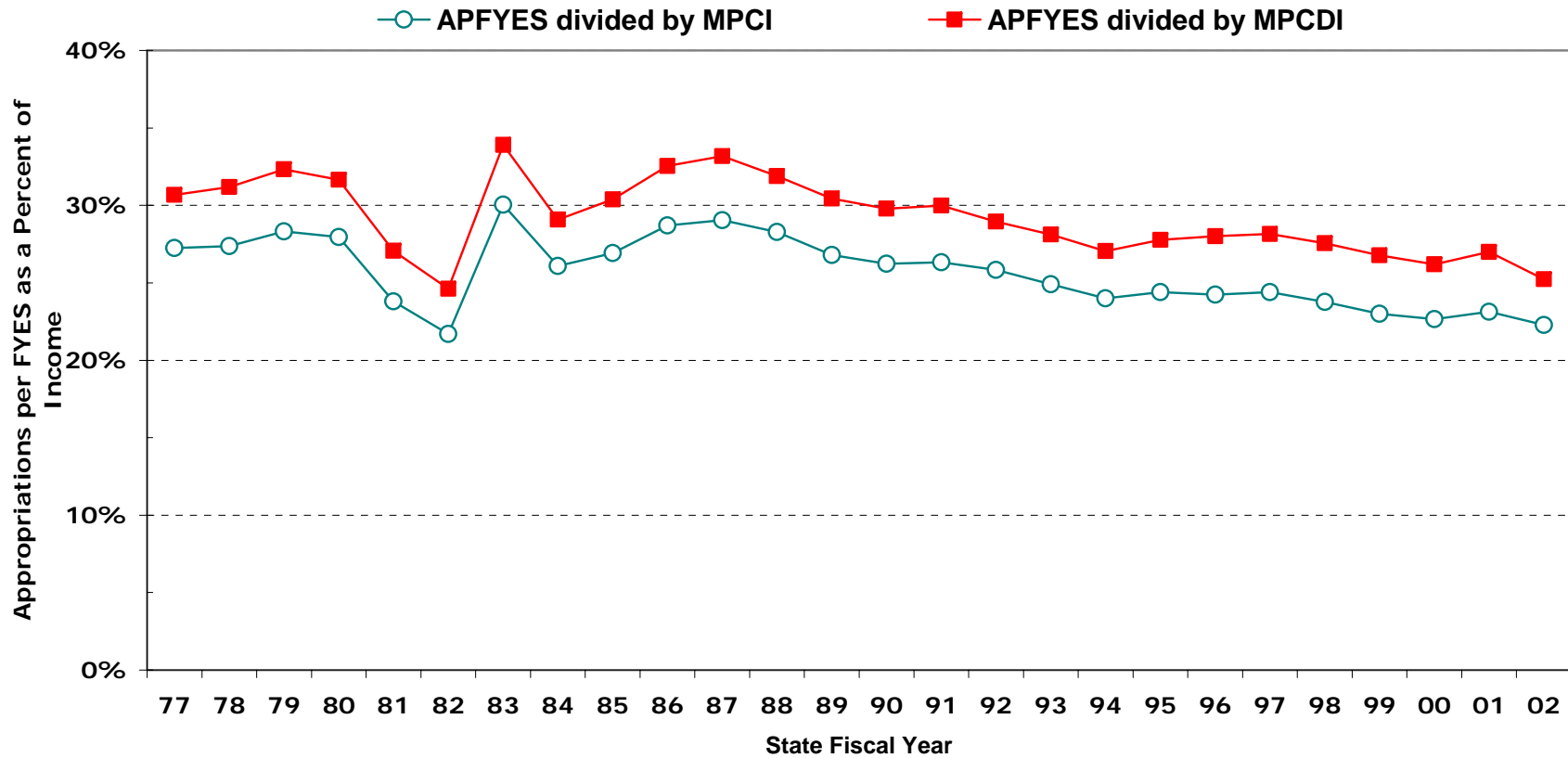


Figure APPROPS4: Appropriations per FYES and Income Measures

In determining the affordability of public higher education, several questions need to be asked. How much state support in terms of appropriations per Fiscal Year Equated Student did the state universities receive? How did that support compare to the amount of per-capita personal income in the same period?

Figure APPROPS4 displays two ratios: (a) appropriations per student compared to per-capita personal income, and (b) appropriations per student compared to per-capita disposable personal income.

How does one read this chart? First, the ratio of APFYES to MPCPI shows state support per student compared to the level of per-capita personal income for each fiscal year. The peak year in the ratio was FY 1983, and that peak was caused by an exceptional appropriation to restore \$80 million in state funding that had been cut the previous fiscal year. Excluding that one-time event, the peak year was FY 1987.

Affordability

For example, in FY 1977, APFYES was \$2,109, and MPCPI was \$7,739. The ratio of those two figures was 0.2725. That means that state support per student was 27.25 % of per-capita personal income. In FY 1987, the peak year, state support per student was 29 % of per-capita personal income.

By FY 2002, the ratio had fallen to 22.2 %. While per-capita income was growing, state support per student was not keeping pace. Hence, the declining trend line.

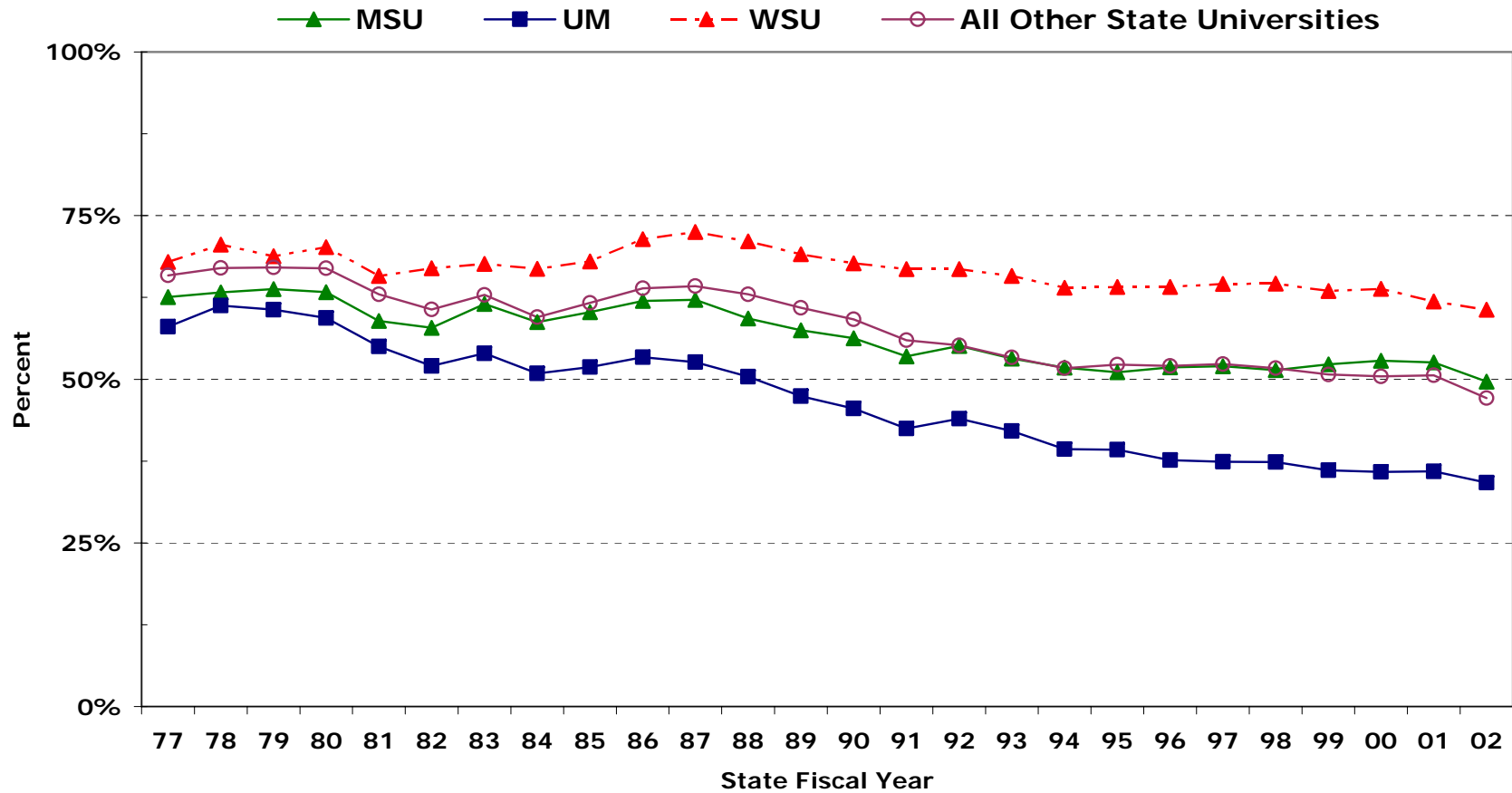
Let's turn to per-capita disposable income, which is total income per capita after income and social security taxes are removed and government transfer payments, like welfare, social security benefits, or unemployment compensation are added.

Figure APPROPS4 shows a similar trend, albeit beginning at a higher ratio and remaining at a higher ratio than APFYES per MPCDI. The trend line is higher since the denominator of this ratio (per-capita disposable personal income) is smaller than the denominator of the prior ratio.

Excluding the one-time event in FY 1983, the peak year for this ratio was FY 1987, when the figure was 33.2 %. In FY 2002, the ratio had declined to 25.2 %.

Considering either ratio, it is apparent that state operational support per student had not kept up with Michigan's per-capita income and per-capita disposable income growth.

**Figure APPROPS5:
 State Appropriations as a percent of university General Fund Revenue has generally declined as tuition/fee revenue and other GF revenue sources contributed a higher percentage of funds.**



APPROPS5: State Appropriations and University General Fund Revenue

One way of examining the impact of state appropriations on a state university's budget is to compare the amount of state appropriations allocated for university operations to the total General Fund income for a state university. Just as the state has various restricted funds, a state university has restricted funds, like the Plant Fund, the Auxiliary Activities Fund, the Endowment Fund, and so on. Revenue in these restricted funds is not considered in this analysis.

In Michigan, state appropriations for university operations are deposited in a university's General Fund along with tuition and fee revenue and other revenue such as indirect cost recovery from grants and research projects.

Figure APPROPS5 reports trends in state appropriations as a percent of university General Fund revenue for the three largest universities separately and for the remaining twelve universities in aggregate. This chart reveals that the ratios for Michigan State University, the University of Michigan, Wayne State University, and the aggregate of the other state universities were in a fairly compact range of 58 % to 68 % in FY 1977. And the universities remained in a fairly tight grouping through FY 1981.

More Dependency on Tuition Revenue

Then dispersion began which has continued to the present day. Wayne State has retained its status as the state university most dependent upon state appropriations, receiving 60 % of its General Fund revenue from state appropriations. Since it lost

enrollment during this twenty-five year period and since it has maintained relatively lower tuition levels, state appropriations has remained its largest GF revenue source. In FY 2002, the ratios had declined and the range had widened. While Wayne State received 57 % of its General Fund revenue from state appropriations, UM acquired less than 32 % of its GF revenue from state operations appropriations. The 10 % range among universities in FY 1977 had widened to 25 %.

Among the factors contributing to the broadening of the range was an increase in tuition/fee revenue and substantial indirect cost recovery revenue for selected campuses.

When one examines Figure APPROPS5, one notices that the aggregate of the other twelve universities began the period by receiving 66 % of their GF revenue from state appropriations. By the end of FY 2002, that percentage had declined to 47 %. One factor that contributed to this decline was the enrollment growth shown in Figure FYES1. That enrollment growth provided additional tuition/fee GF revenue, and, absent a corresponding increase in state appropriations, the contribution of tuition revenue to total GF revenue increased.

This chart also indicates that reductions in state appropriations will cause differential impacts among state universities. If a campus (such as WSU) is more dependent upon state appropriations, then uniform percentage reductions for all institutions will likely have a more dramatic effect on such a campus, unless other revenue sources (such as tuition increases) counterbalance appropriations reductions.

TUITION

Figure TUTION1: Michigan Per Capita income-adjusted resident undergraduate tuition/fee rates tend to increase when HEPI-adjusted state appropriations per FYES decline.

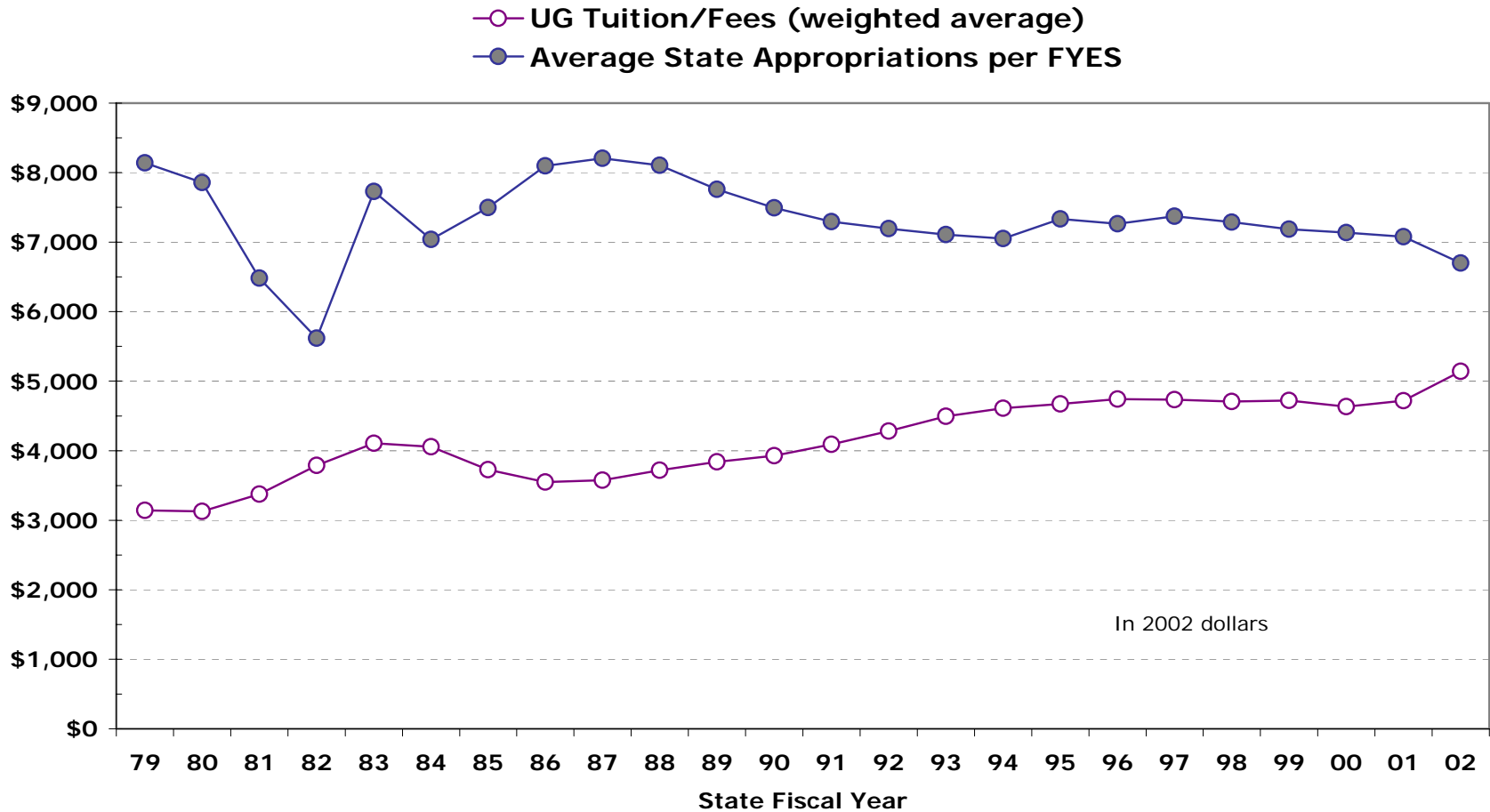


Figure TUTION1: Resident Undergraduate Tuition Rates & State Appropriations

Tuition revenue is one of two major components of state university General Fund revenue. The other major source is state appropriations for operating purposes. A select few institutions engage in substantial research endeavors and receive funding (known as indirect cost recovery) to offset utilization of university General Fund resources in the conduct of that research. For the majority of universities, the dominant revenue sources are state appropriations and tuition revenue.

An examination of tuition rates involves a recognition that, unlike the business world where “sticker price” is greater than cost, “sticker price” in higher education is usually less than cost. And that is especially true for resident undergraduates.

Figure TUTION1 displays the results of two calculations. First, resident undergraduate tuition/fee rates have been adjusted to account for the FY 1999 change in student credit hours necessary to generate a fiscal year equated student (FYES). Second, those rates were adjusted to FY 2002 dollars by using Michigan’s per-capita income figures. Third, the tuition/fee rates have been weighted by resident undergraduate enrollment among the fifteen state universities to provide an “average” for the system.

State appropriations per Fiscal Year Equated Student (FYES) have been adjusted to 2002 dollars by using the Higher Education Price Index, an expenditure index. Then the two calculations are plotted by state fiscal year. One notices that

resident undergraduate tuition/fees have increased from about \$3,200 in FY 1977 to \$5,100 in FY 2002. The growth rate has been a compound average of 1.9 %.

Linkage to Strength of Economy

When one turns to the line graph depicting average state appropriations per FYES, the effect of the 1980-1982 severe recession is obvious. The peak year in funding was FY 1987. The compound average growth rate in appropriations from FY 1977 to FY 2002 has been a negative 0.4 % annually.

In periods of increasing inflation-adjusted state support per FYES, per-capita income adjusted resident undergraduate tuition/fee rates have declined or remained flat. That pattern occurred in the FY 1984-1987 and FY 1996-2000 periods, time frames with strong economic growth.

In periods of decreasing inflation-adjusted state support per FYES, tuition/fee rates have increased. The notable time periods on this graph are FY 1980-1983, FY 1988-1994, and FY 2001-2002, years with weak economic growth.

Given the decline in state appropriations per FYES into FY 2004, the two trend lines are now likely to be the closest they have ever been using existing state databases.

Figure TUTION2:
Per capita income-adjusted resident undergraduate tuition and fee rates at Michigan's state universities have tended to increase during periods of declining state appropriations per Fiscal Year Equated Student.

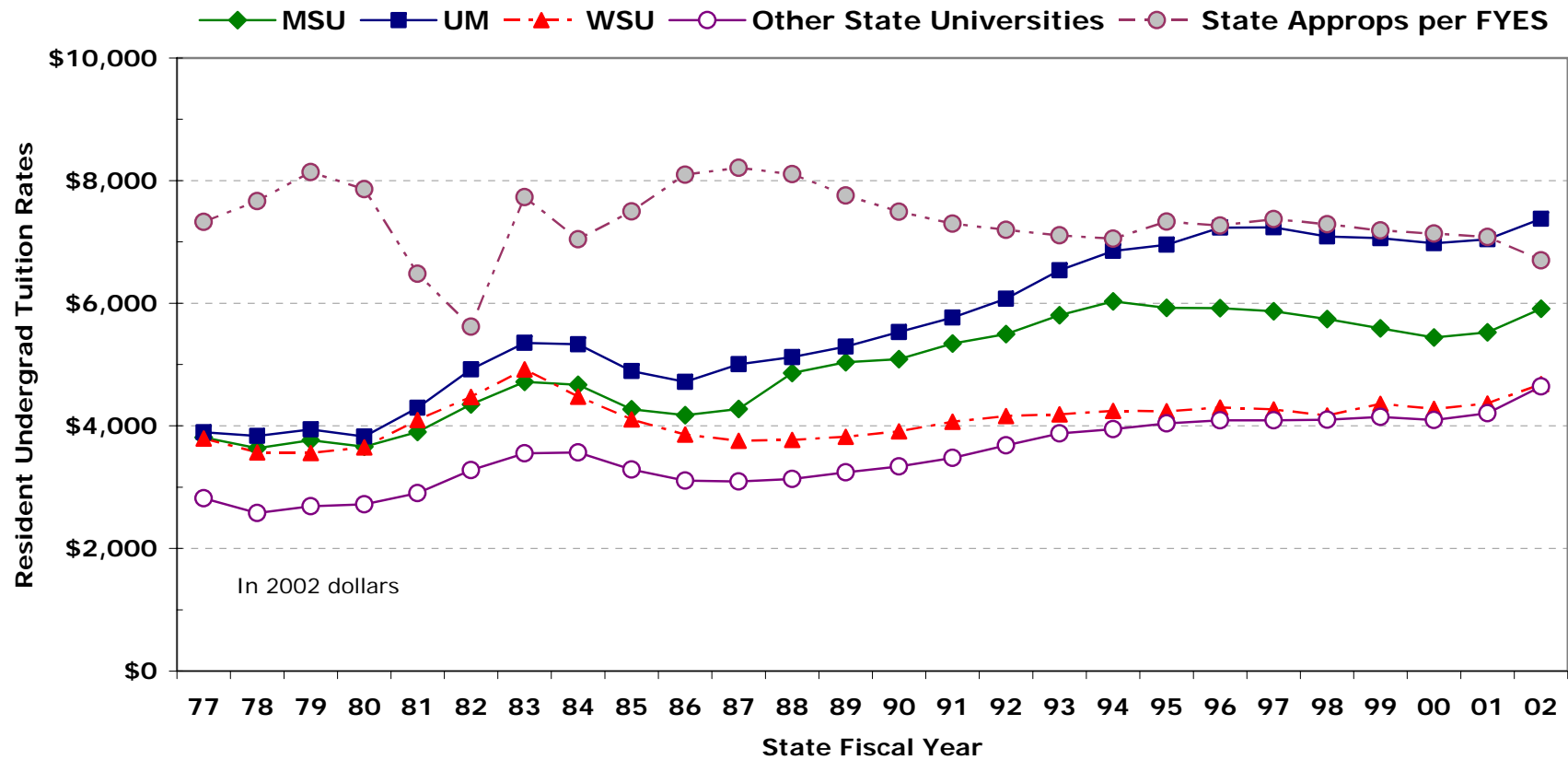


Figure TUTION2: Per capita income-adjusted Tuition & Fee Rates

Whereas Figure TUTION1 displays the historical relationship between resident undergraduate tuition and state appropriations per Fiscal Year Equated Student, Figure TUTION2 disaggregates the data displayed in Figure TUTION1 to provide additional insight. The data have been adjusted to FY 2002 dollars by using Michigan's per-capita income figures and the Higher Education Price Index, respectively, for tuition rates and state appropriations.

A factor to consider when examining resident undergraduate tuition/fee rates is their relationship to per-capita income in Michigan. When tuition/fee rates are increasing faster than per-capita personal income, students and their families encounter a greater burden in paying for and investing in a college education. When they are increasing at a slower pace, public university education becomes more affordable.

One notices that the adjusted resident undergraduate tuition/fees in FY 1977 ranged from about \$2,800 to \$3,900. At the end of the period under study, the range had become \$4,600 to \$7,400 per FYES in 2002 dollars.

Linkage to State Support

When one turns to the line graph depicting average state appropriations per FYES, the effect of the severe 1980-1982 recession is obvious. The peak year in per-FYES funding for

this entire period was FY 1987 at \$8,207. The compound average growth rate in per-FYES appropriations from FY 1977 to FY 2002 has been approximately a negative 0.35 % annually.

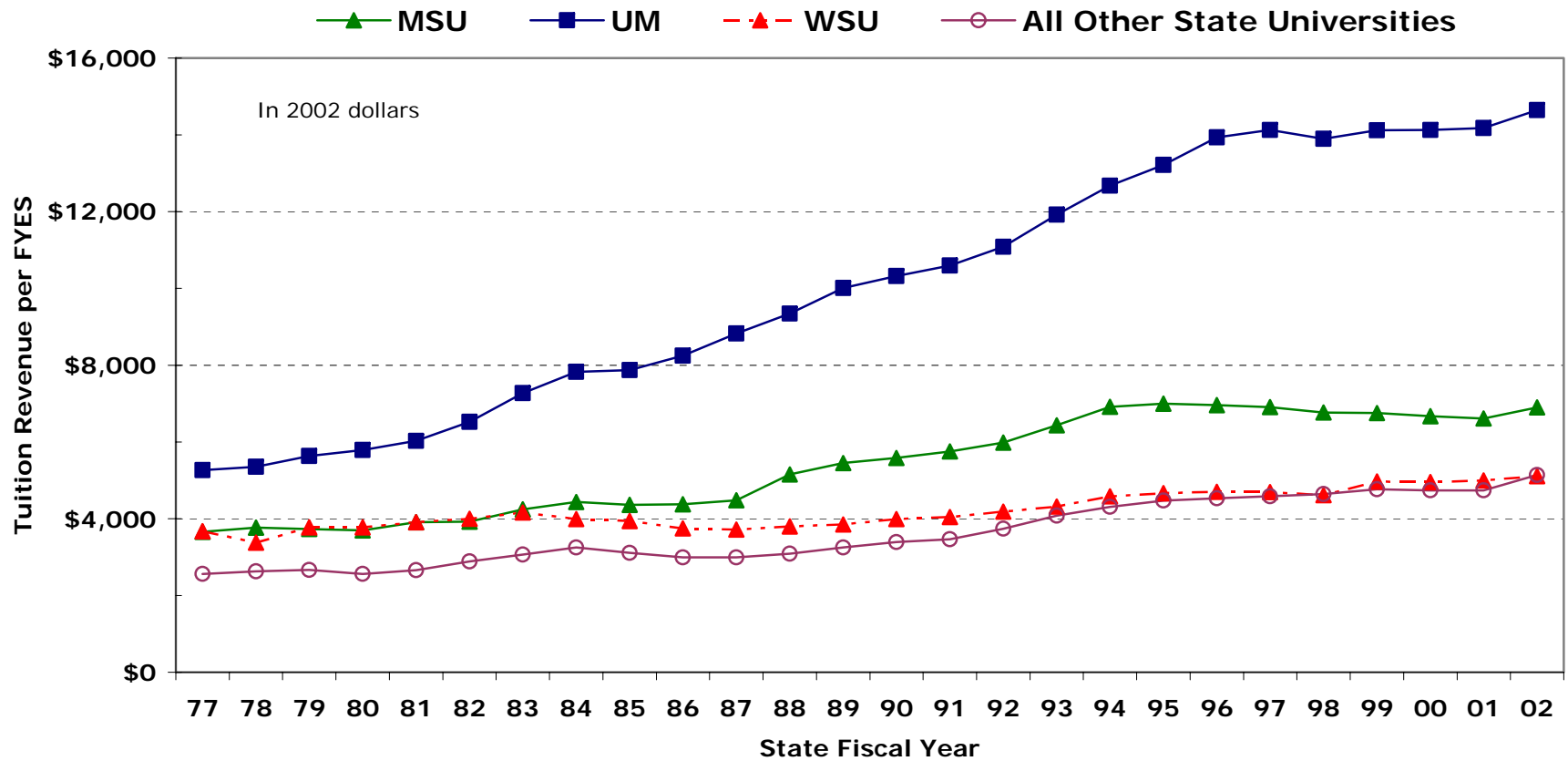
In periods of increasing inflation-adjusted state support per FYES, per-capita income adjusted resident undergraduate tuition/fee rates have declined or remained relatively flat. That pattern occurred in the FY 1977-1979, FY 1984-1987, and FY 1996-2000 periods.

In periods of decreasing inflation-adjusted state support per FYES, tuition/fee rates have increased. The notable time periods for that phenomenon on this graph are FY 1980-1983, FY 1988-1994, and FY 2000-2002. Certainly there was a clear change in the 1980's and 1990's in the share of education costs to be covered by tuition and to be borne by the student and his/her parents.

Given the decline in state appropriations per FYES into FY 2004, the tuition trend lines are continuing to increase.

Figure TUTION3:

Since FY 1977 UM has received higher average tuition revenue per Fiscal Year Equated Student due to both its ability to attract nonresident undergraduate and graduate students and its sizable graduate enrollment.



TUITION3: Tuition Revenue per Fiscal Year Equated Student

Whereas Figures TUITION1 and TUITION2 display the historical relationship between resident undergraduate tuition and state appropriations per Fiscal Year Equated Student, Figure TUITION3 reports the aggregated tuition revenue per FYES. The datapoints shown include all tuition revenue, from residents and nonresidents, and have been adjusted to FY 2002 dollars.

The University of Michigan's data points are obvious on the chart due to its ability to attract nonresident students, both undergraduates and graduate students. Also, its sizable graduate enrollment and the higher tuition levels accompanying graduate and professional education (law, medicine, dentistry, etc.) impact the university's total tuition revenue per FYES. The steady growth pattern evident from FY 1986 through FY 1996 has slowed in the subsequent fiscal years shown on this chart.

Impact of Enrollment Patterns

When one examines MSU and Wayne State data points, one observes that those two campuses had almost identical tuition revenue per FYES in FY 1977 through FY 1982. Since that recessionary year, the gap between MSU and WSU has

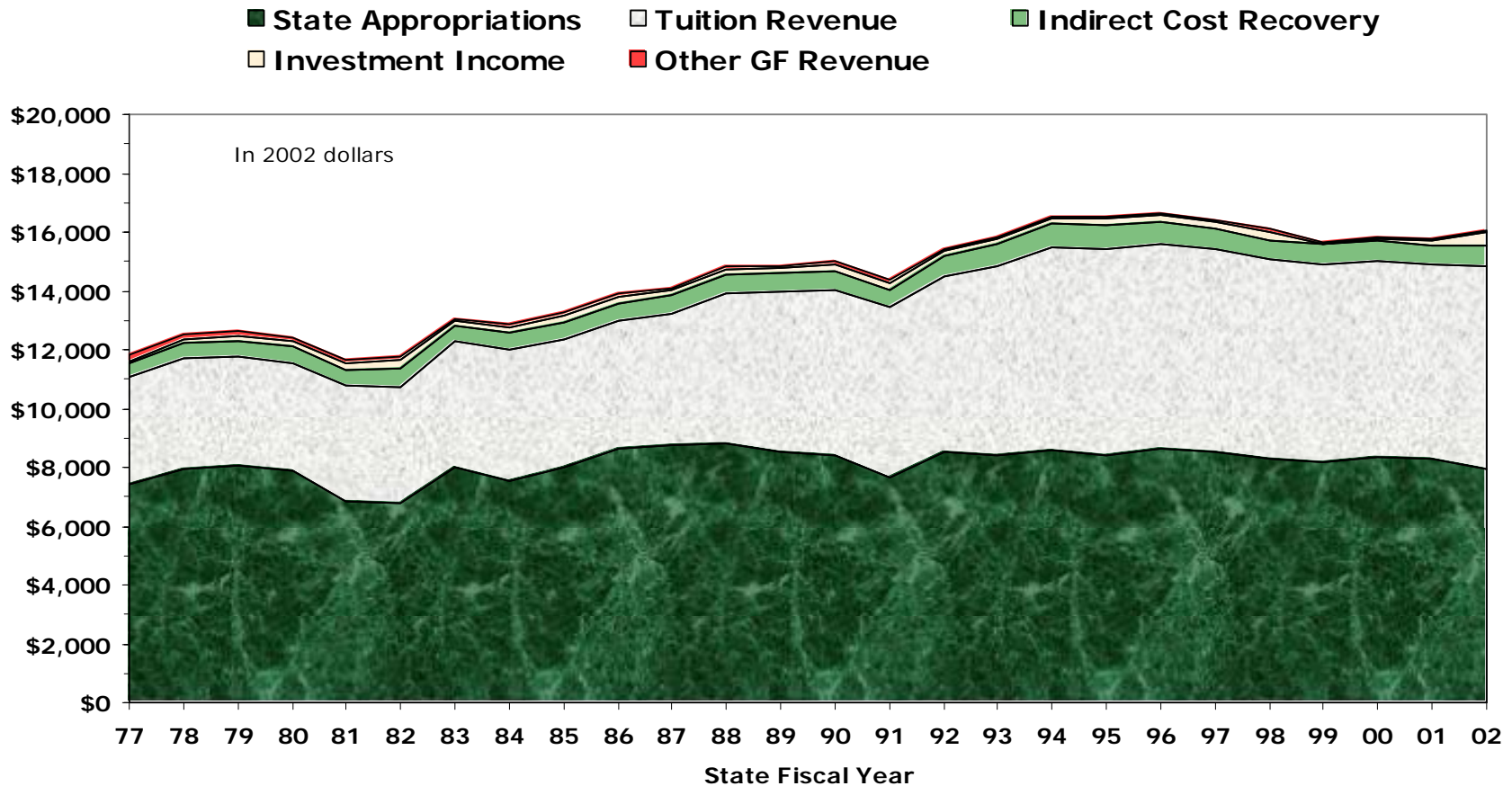
widened over time. It has reached about \$1,800 per FYES in FY 2002. A partial explanation for the gap has been faster enrollment growth at MSU and higher state appropriations per FYES at WSU. The combination explains much of the gap that has formed.

When one turns to the aggregate figures for the other state universities, the \$2,500 per FYES gap in tuition revenue between WSU and these twelve universities has to a nearly identical level of about \$5,100 per FYES in FY 2002. Total enrollment growth and nonresident enrollment growth at the twelve universities are two of the explanatory factors.

If one delves into the figures for the twelve universities, the range has certainly broadened from FY 1977 levels. In FY 2002 Michigan Tech had the highest revenue per FYES at \$7,500 due to substantial nonresident enrollment, and Lake Superior had the lowest per-FYES level at \$4,400.

UNIVERSITY GENERAL FUND REVENUES

Figure MSUREVENUE1:
Michigan State's growth in total HEPI-adjusted GF revenue per Fiscal Year Equated Student has become more closely linked to tuition revenue as state appropriations per FYES have flattened.



MSUREVENUE1: Michigan State University's General Fund Revenue

State universities receive revenue for their General Fund from five major sources: (a) state appropriations, (b) tuition revenue, (c) indirect cost recovery linked to research contracts, (d) investment income, and (e) miscellaneous categories of revenue.

For all state universities the two major revenue streams are state appropriations and tuition revenue. For some universities, indirect cost recovery provides a significant level of revenue.

Figure MSUREVENUE1 shows the trend of revenue per Fiscal Year Equated Student (FYES) from each of the five major categories. State appropriations for the Agricultural Experiment Station and the Cooperative Extension Service are not included. The underlying nominal figures have been converted to real dollars using the Higher Education Price Index (HEPI) as the inflation adjustor.

For MSU, inflation-adjusted state appropriations per FYES has been flat to declining from 1994-95. As MSU's enrollment and costs increased, state appropriations did not match those growth factors. The compound average increase for MSU state appropriations per FYES was 0.3 % above inflation during this period.

Tuition revenue became a larger component of total General Fund revenue during this period, as rates increased and enrollment modestly increased. The tuition revenue growth rate was about 2.6 % annually. With flat to declining resources from the state, MSU shifted the burden of higher education to its students and their parents/guardians.

The chart indicates a modest increase in Indirect Cost Recovery per FYES. The compound annual average increase was 1.35 %.

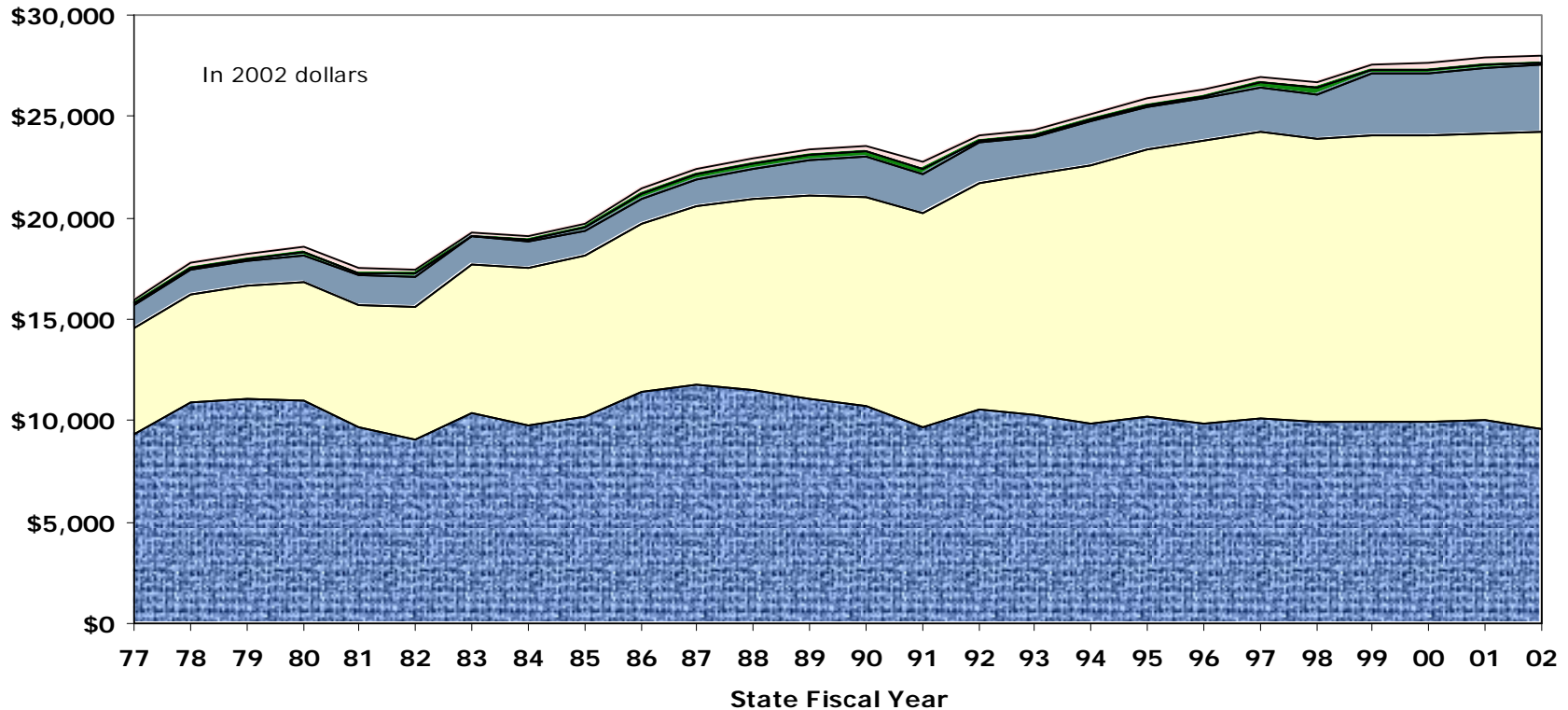
The revenue factor displaying the largest annual percentage increase was Investment Income. It showed an annual per-student growth rate of 6.7 %. Apparently MSU has applied excellent cash management methods to its General Fund revenue. Even with this pattern of growth, investment income accounted for less than 3 % of total General Fund income in FY 2002.

The compound average annual increase for total General Fund revenue per student was 1.2 % above inflation.

Note: The Appendix contains a black-and-white version of this chart for faster printing.

Figure UMREVENUE1:
University of Michigan's increase in HEPI-adjusted GF revenue per Fiscal Year Equated Student has been driven by growth in tuition revenue and indirect cost recovery (from research grants).

■ State Appropriations
 ■ Tuition Revenue
 ■ Indirect Cost Recovery
■ Investment Income
 ■ Other GF Revenue



UMREVENUE1: University of Michigan – Ann Arbor’s General Fund Revenue

Figure UMREVENUE1 displays the University of Michigan’s General Fund revenue per Fiscal Year Equated Student.

The revenue figures have been adjusted to 2002 dollars through use of the Higher Education Price Index (HEPI) and reflect the per-FYES levels.

This chart focuses on one component of UM’s total revenue, its General Fund. It does not reflect Designated Fund, Expendable Restricted Fund, Plant Fund, Auxiliary Activities Fund, Endowment Funds, or other specific funds.

Shown are five components to the university’s General Fund revenue: (a) state appropriations for operations, (b) tuition revenue, (c) indirect cost recovery linked to research grants, (d) investment income, and (e) other general fund revenue.

The dark band in the lower portion of the chart represents HEPI-adjusted state appropriations per FYES. The peak year was FY 1987, and since that time state appropriations per FYES has been slowly declining.

The second band displays total tuition revenue. It is obvious that UM has become more tuition-reliant, and by FY 2002 total tuition revenue far exceeded state appropriations as a General Fund revenue source. A major contributing factor has been UM’s ability to attract nonresident undergraduate and graduate students who pay much higher tuitions than resident students do (the ratio in FY 2002 was on the order of 3 to 1). Figure TUTION3 reports that trend.

Indirect cost recovery is the third band on the chart, and it represents recovery of indirect costs associated with sponsored programs and research agreements with the federal government or other grant-making entities such as foundations. In FY 2002, UM received over \$125 million in General Fund indirect cost recovery, or about \$3,300 per FYES.

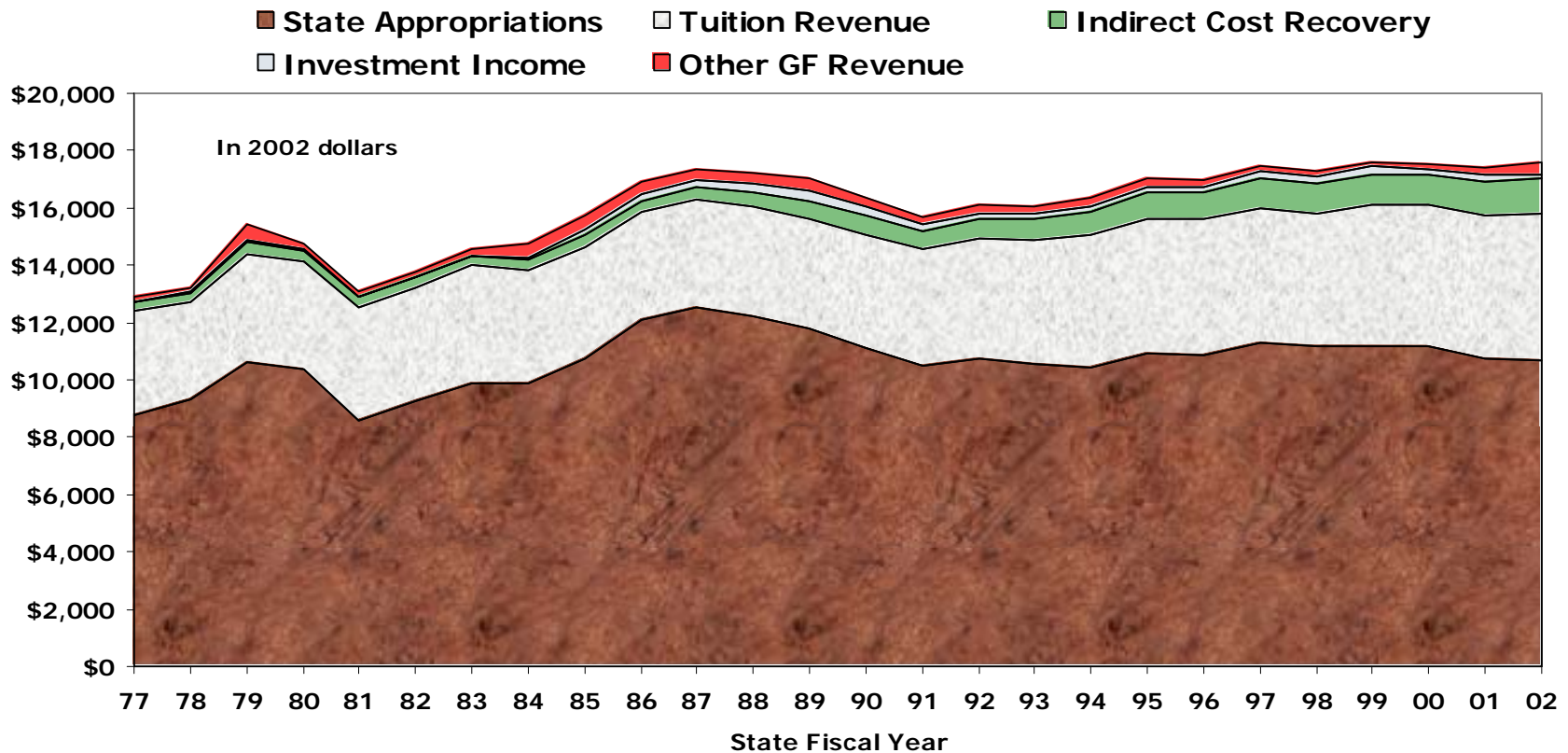
The fourth band is Investment Income, which is cash management income recorded in the university’s General Fund. For FY 2002, that amount totaled over \$4 million.

The final component of GF revenue shown in Figure UMREVENUE1 is Other General Fund Revenue. This category represents all GF revenue not reported in the other categories. In FY 2002 that amount was over \$6 million for UM.

The two components that differentiate UM from the other state universities are its total tuition revenue and its indirect cost recovery. The trendlines for these two factors slope upward annually compared to all other state universities.

Note: The Appendix contains a black-and-white version of this chart for faster printing

Figure WSUREVENUE1:
Wayne State's increase in HEPI-adjusted GF revenue per Fiscal Year Equated Student has been fueled by tuition revenue growth and more directly by indirect cost recovery (research grant) growth.



WSUREVENUE1: Wayne State University's General Fund Revenue

Figure WSUREVENUE1 displays Wayne State University's General Fund revenue per Fiscal Year Equated Student during the past quarter-century.

The revenue figures shown have been adjusted to 2002 dollars through use of the Higher Education Price Index (HEPI) and reflect per-FYES levels.

This chart focuses on one component of WSU's total budget, its General Fund. It does not reflect revenue in Designated Fund, Expendable Restricted Fund, Plant Fund, Auxiliary Activities Fund, Endowment Funds, or other similar restricted funds.

Shown are five components to the university's General Fund revenue: (a) state appropriations for operations, (b) tuition revenue, (c) indirect cost recovery linked to research grants, (d) investment income, and (e) other general fund revenue.

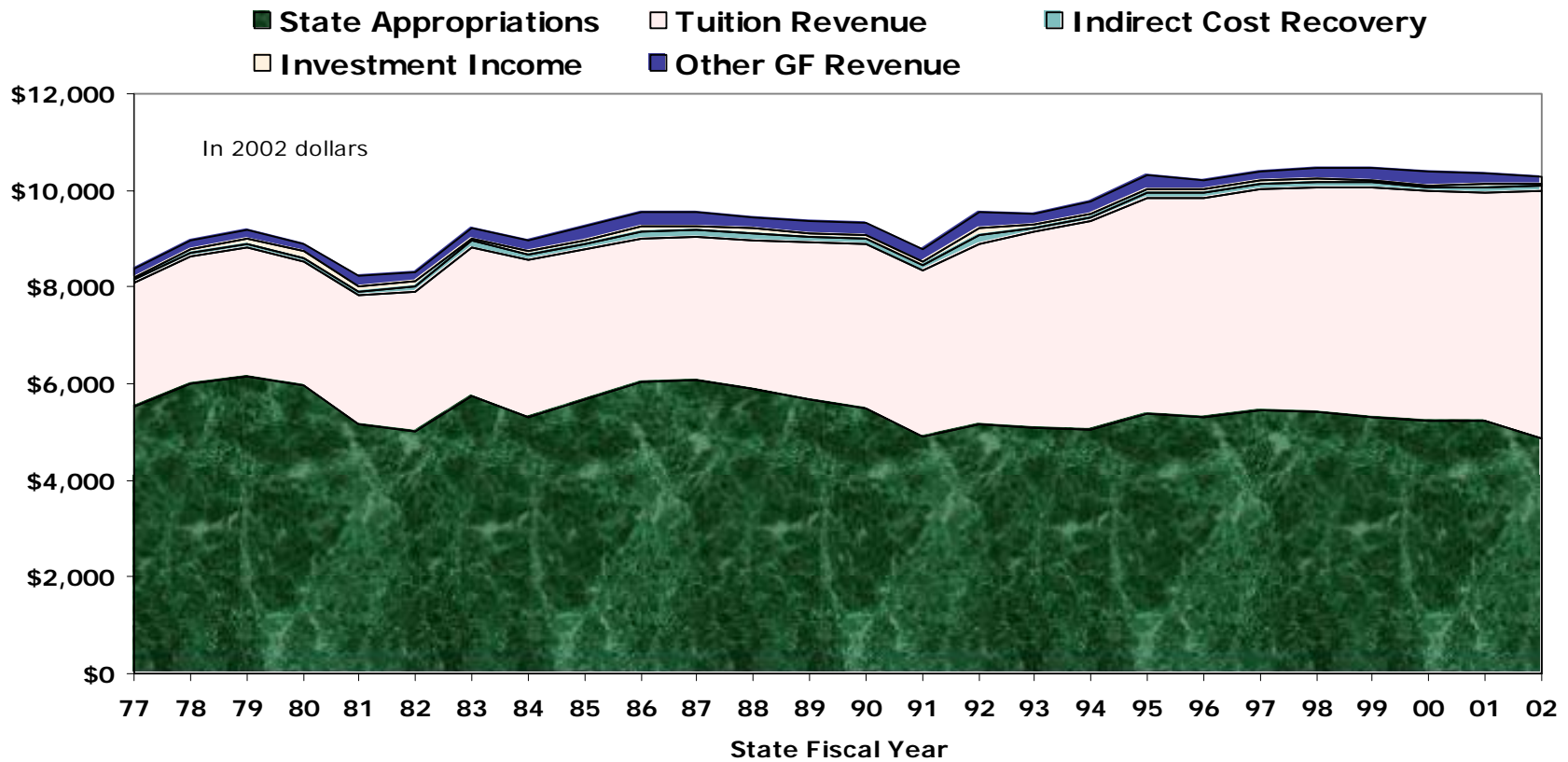
The dark band in the lower portion of the chart represents HEPI-adjusted state appropriations per FYES. The peak year for WSU was FY 1987 when nearly \$12,600 per FYES was appropriated. Since that time, state appropriations per FYES have flattened out and were at \$10,700 in FY 2002.

The second band displays total tuition revenue. It is obvious that WSU has become somewhat more dependent on tuition as a revenue source for operations as that band has widened in this chart.

Another important revenue source has been indirect cost recovery associated with research grants and projects. That category provided about \$275 per FYES in GF revenue for WSU in FY 1977; it increased by \$1,000 per FYES in FY 2002 as WSU expanded its research capabilities and secured grants and contracts.

Note: The Appendix contains a black-and-white version of this chart for faster printing

Figure OTHERUREVENUE1:
The increase in HEPI-adjusted GF revenue per Fiscal Year Equated Student for the other twelve universities has been fueled substantially by tuition revenue growth linked to enrollment increases.



OTHERUREVENUE1: Other State Universities' General Fund Revenue

State universities receive revenue for their General Fund from five major sources: (a) state appropriations, (b) tuition revenue, (c) indirect cost recovery linked to research contracts, (d) investment income, and (e) miscellaneous categories of revenue.

For all state universities the two major revenue streams are state appropriations and tuition revenue. For some universities, indirect cost recovery provides a significant level of revenue.

Figure OTHERUREVENUE1 shows the trend of revenue per Fiscal Year Equated Student (FYES) from each of the five major categories for the twelve state universities that are not the major research universities in Michigan. The underlying nominal figures have been converted to real dollars using the Higher Education Price Index (HEPI) as the inflation adjustor.

For these universities, inflation-adjusted state appropriations per FYES have been flat to declining since FY 1987. As their enrollment and costs increased, state appropriations did not keep up; consequently, state appropriations became a smaller component of total GF revenue. The compound average increase per FYES was 0.5 % below inflation during this period.

Tuition revenue became a larger component of total General Fund revenue, as tuition/fee rates increased and enrollment surged. The tuition revenue growth rate was about 2.8 % above inflation annually. With flat to declining resources from the state, these universities shifted the burden of higher education costs to its students and their parents/guardians.

The chart indicates a modest increase in Indirect Cost Recovery per FYES. The compound annual average increase was 1.8 % over inflation. Almost all of that increase was attributable to Michigan Tech's achievements in research grant procurement.

The compound average annual increase for total General Fund revenue per student for these twelve universities was 0.8 % above inflation. Fifty percent of that increase was due to increased tuition and fee revenue.

Note: The Appendix contains a black-and-white version of this chart for faster printing

GENERAL FUND EXPENDITURES BY UNIVERSITY

Figure MSUEXPENDS1:
Growth in HEPI-adjusted Expenditures per Fiscal Year Equated Student has occurred mainly in academic support, financial aid, research, and transfers.

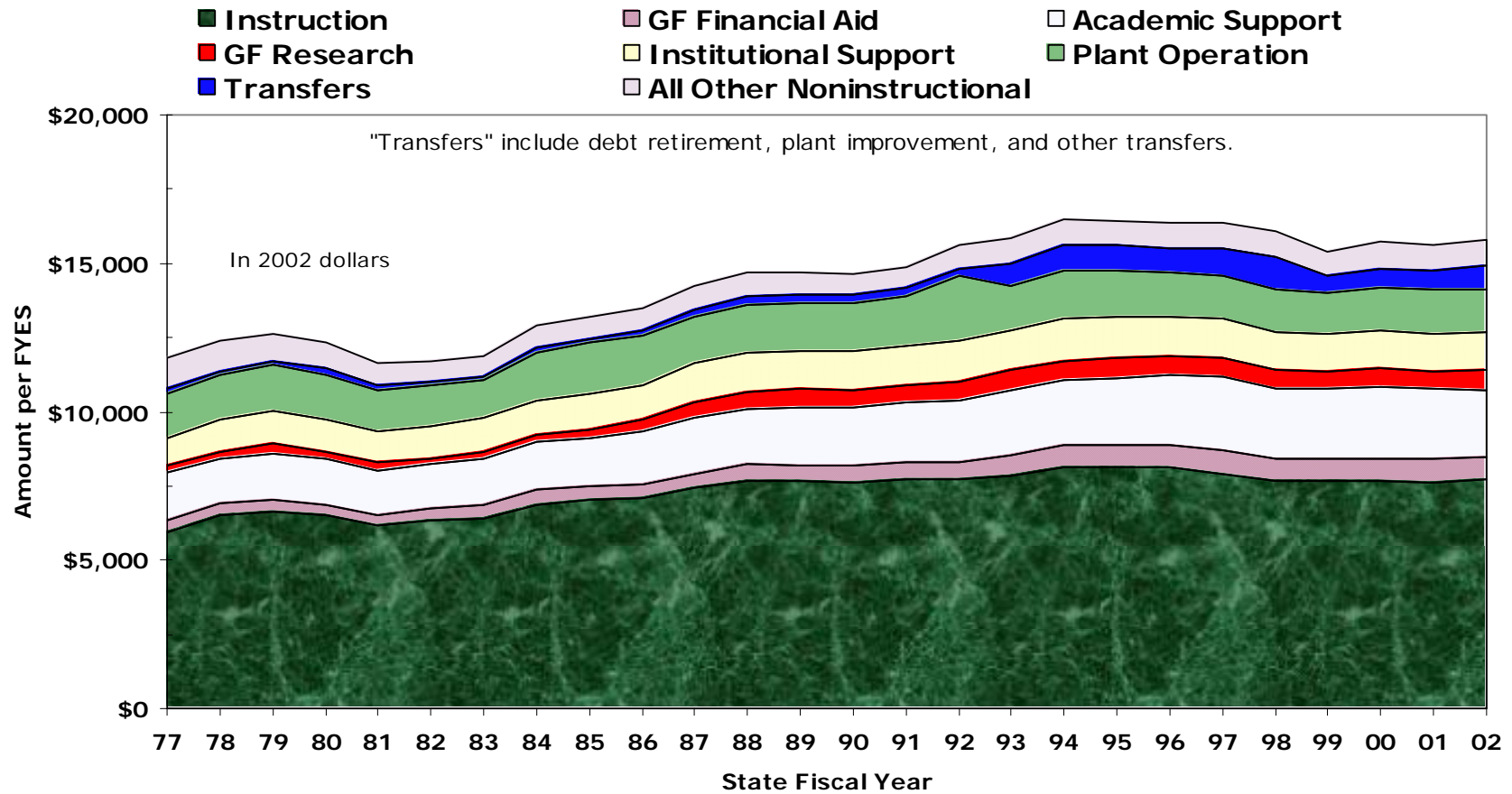


Figure MSUEXPENDS1: Michigan State University's General Fund Expenditures

State universities expend their financial resources in a number of areas, including instruction, public service, and research. The HEIDI database is a repository of enrollment, staffing, and expenditure data for the fifteen state universities.

Major categories of HEIDI expenditure data include: (a) instruction, (b) financial aid, (c) research, (d) academic support, (e) institutional support, (f) plant operation and maintenance, (g) student services, (h) auxiliary enterprises, and (i) transfers.

In analyzing MSU's GF revenue, expenditures of the Agricultural Experiment Station and the Cooperative Extension Service, which have usually been separately funded in the higher education bill and which do not have a direct tuition link, were not included.

Figure MSUEXPENDS1 shows total spending in inflation-adjusted dollars grew from \$11,800 to \$15,800 per FYES in this period. One notices that direct instructional expenditures per FYES, adjusted for inflation, had been increasing from a level of about \$5,900 in FY 1977 to a peak of \$8,150 in FY 1996. Since that year, instructional spending per FYES has been declining annually and reached \$7,700 per FYES in FY 2002.

This area chart also reveals that non-instructional expenditures had been just about equal to direct instructional spending per FYES in FY 1977. The aggregate of those areas then tracked instructional spending per FYES on an ascending path from FY 1977 through FY 1991. In FY 1992, the aggregate of non-instructional spending per FYES exceeded direct instructional expenditures and continued to do so through FY 2002. It reached a level of \$8,100 in that year compared to instructional spending of \$7,700 per FYES.

A subsequent chart disaggregates MSU's non-instructional spending per FYES into the components mentioned above

One must carefully compare this profile to those of other universities shown in subsequent charts in this section. The instructional expenditures per FYES displayed do not reveal instructional program mix changes that have occurred within this period of analysis. Nor do they reveal actions, such as class size variations among disciplines, taken by universities to balance high instructional costs in certain programs with lower instructional costs in others.

Note: The Appendix contains a black-and-white version of this chart for faster printing.

Figure UMEPENDS1:
Growth in HEPI-adjusted Expenditures per Fiscal Year Equated Student has occurred primarily in financial aid, academic support, research, plant operation/maintenance, and transfers.

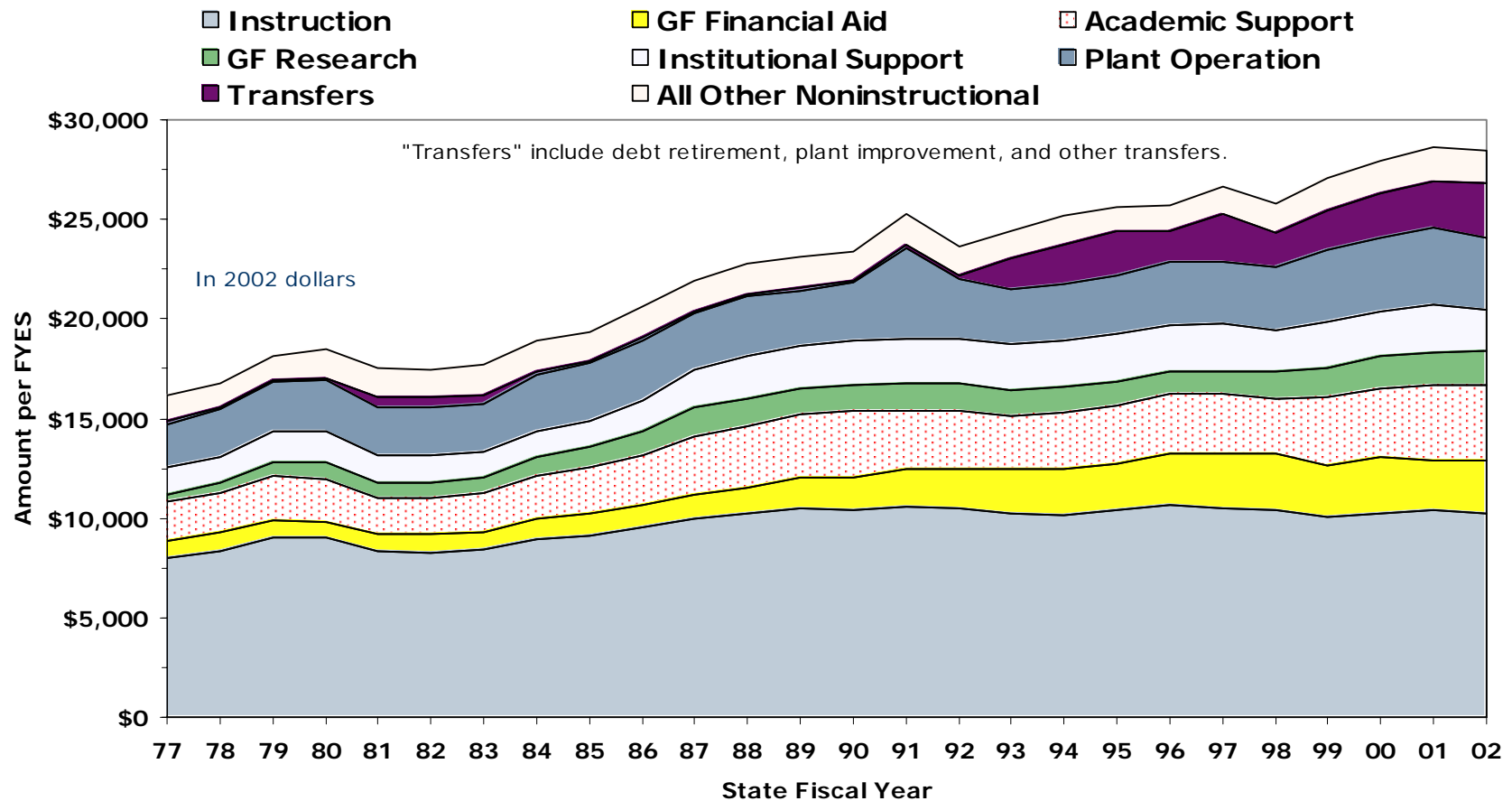


Figure UMEXPENDS1: University of Michigan's General Fund Expenditures

State universities expend their financial resources in a number of areas, including instruction, public service, and research. The HEIDI database is a repository of enrollment, staffing, and expenditure data for the fifteen state universities.

Major categories of HEIDI expenditure data include: (a) instruction, (b) financial aid, (c) research, (d) academic support, (e) institutional support, (f) plant operation and maintenance, (g) student services, (h) auxiliary enterprises, and (i) transfers. The data portrayed in this graph has been adjusted for inflation by using HEPI.

The first segment of the area chart named Figure UMEXPENDS1 is direct instructional program expenditures, as reported by the University of Michigan – Ann Arbor. These expenditures are defined as “fiscal year expenditures for general academic instruction, occupational and vocational instruction, and special session instruction conducted by the teaching faculty for the institution’s students.”

Total UM spending per FYES began this quarter-century at \$16,200 per FYES. In FY 2002, it totaled \$28,400. One notices that direct instructional expenditures per FYES, adjusted for inflation, had been increasing from a level of about \$8,000 in FY 1977 to a peak of \$10,600 in FY 1996. Since that year, instructional spending per FYES has been flattening out and declined to \$10,200 in FY 02.

The increase in instructional spending per FYES above inflation can be partially attributable to its larger proportion of graduate enrollment and enrollment in more expensive

graduate programs. For example, UM’s ratio of graduate students to undergraduates is approximately 1 to 2, while MSU’s ratio has been about 1 to 4. UM’s recent higher total spending per FYES is linked, in part, to its larger percentage of total enrollment in more expensive engineering programs (for instance, 20 % of its graduates earn a degree in engineering). Those programs usually require substantial instrumentation and computing support, which are noninstructional expenditures closely linked to direct instruction.

Non-instructional Spending Surges

Figure UMEXPENDS1 shows that non-instructional expenditures had tracked direct instructional spending per FYES for three years beginning in FY 1977. Then in FY 1980 and since, non-instructional spending per FYES has exceeded direct instructional expenditures and has grown substantially. In fact, for the entire period, expenditures other than direct instruction had increased from \$8,300 per FYES to \$18,200. Among factors generating revenue to enable the higher per-FYES spending on financial aid, research, and other non-instructional areas has been indirect cost recovery from private and governmental grants, its increasing non-resident enrollment accompanied by additional tuition revenue, and available income from its endowment.

Note: The Appendix contains a black-and-white version of this chart for faster printing.

Figure WSUEXPENDS1:
Growth in HEPI-adjusted expenditures per Fiscal Year Equated Student has occurred in research, institutional support, transfers, and other noninstructional areas.

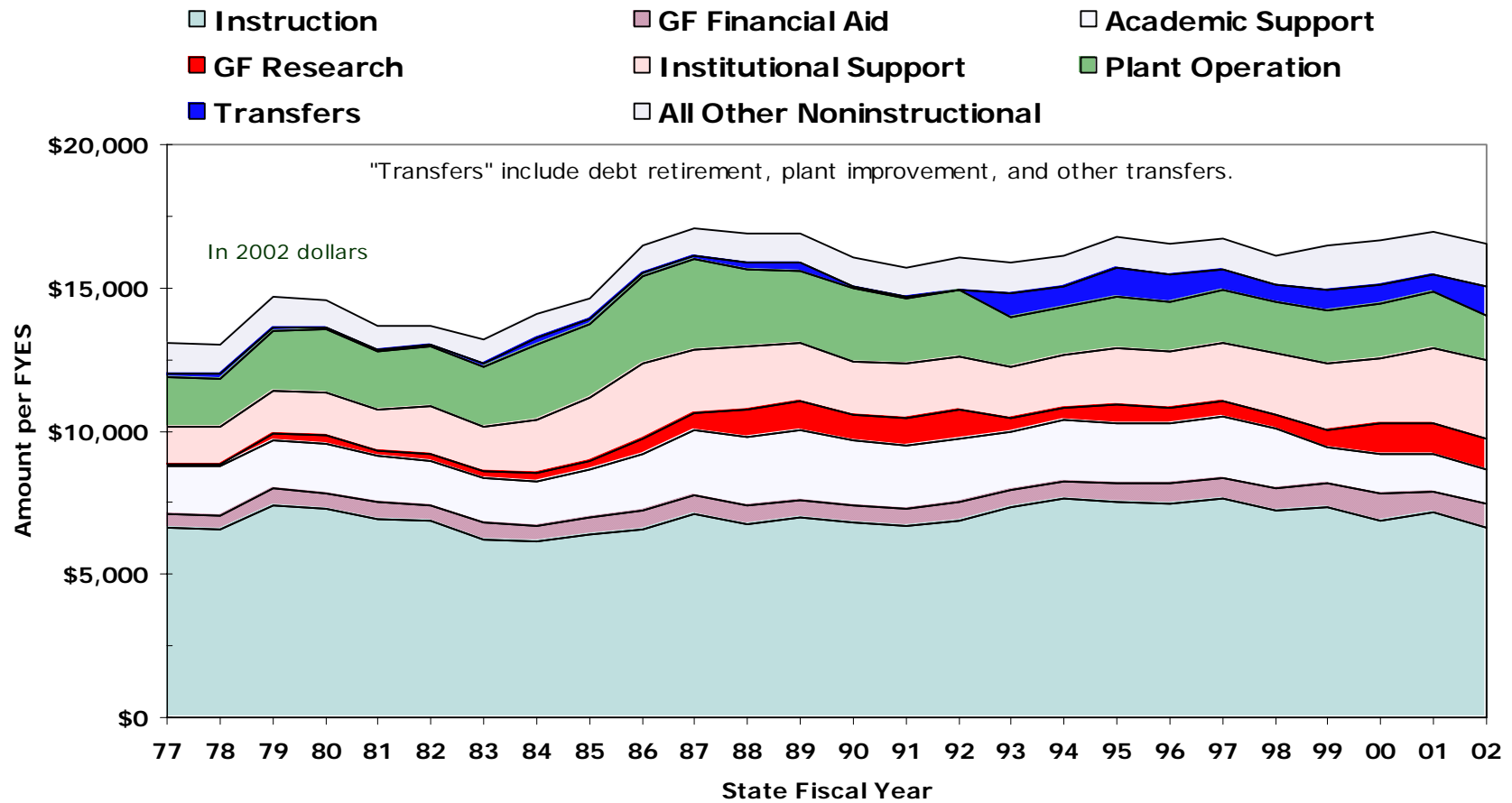


Figure WSUEXPENDS1: Wayne State University's General Fund Expenditures

State universities expend their financial resources in a number of areas, including instruction, public service, and research. The HEIDI database is a repository of enrollment, staffing, and expenditure data for the fifteen state universities.

Major categories of HEIDI expenditure data include: (a) instruction, (b) financial aid, (c) research, (d) academic support, (e) institutional support, (f) plant operation and maintenance, (g) student services, (h) auxiliary enterprises, and (i) transfers.

Figure WSUEXPENDS1 displays eight categories of expenditure per fiscal year equated student (FYES). The first is direct instructional program expenditures. These expenditures are defined as "fiscal year expenditures for general academic instruction, occupational and vocational instruction, and special session instruction conducted by the teaching faculty for the institution's students." One observes that for Wayne State there has been some fluctuation in this category over the twenty-five year period compared to the pattern of the other state universities.

WSU reported \$13,000 in total GF spending per FYES in FY 1977 and \$16,500 in FY 2002. One notices that instructional expenditures per FYES, adjusted for inflation, had been about \$6,690 in FY 1977 and peaked at \$7,600 in FY 1997. Since that year, instructional spending per FYES has been declining and is now under the per-FYES level of FY 1977.

Spending Growth Areas

Two areas of expansion that are visible on the chart are the budget categories of GF research and institutional support. From a very low level of \$69 per FYES in FY 1977, WSU spent over \$1,000 per FYES in FY 2002 on research activities from its General Fund. Meanwhile, its institutional support spending grew from \$1,286 per FYES in FY 1977 to nearly \$2,800 per student in FY 2002. Part of that increase is linked to expanded administrative data processing costs, but the causes of the remaining increases need to be examined.

Two other areas of change for WSU have been academic support and plant maintenance and operation. Regarding the former, the expansion of spending from the late 1980's through the mid-1990's has been curtailed in the last few years. Concerning the latter, the sizeable spending per FYES in the late 1980's has been reduced in recent years. It is likely that some of that change was associated with improvements in utility infrastructure and efforts to retrofit older buildings.

Wayne State exhibits the same pattern as several other universities in expanded per-FYES spending on transfers from FY 1993 forward. The underlying causes of that change in spending behavior are unknown.

Note: The Appendix contains a black-and-white version of this chart for faster printing.

Figure OTHEREXPENDS1:
The state universities that are not the three major research universities have increased their spending on financial aid, academic support, and transfers in this period.

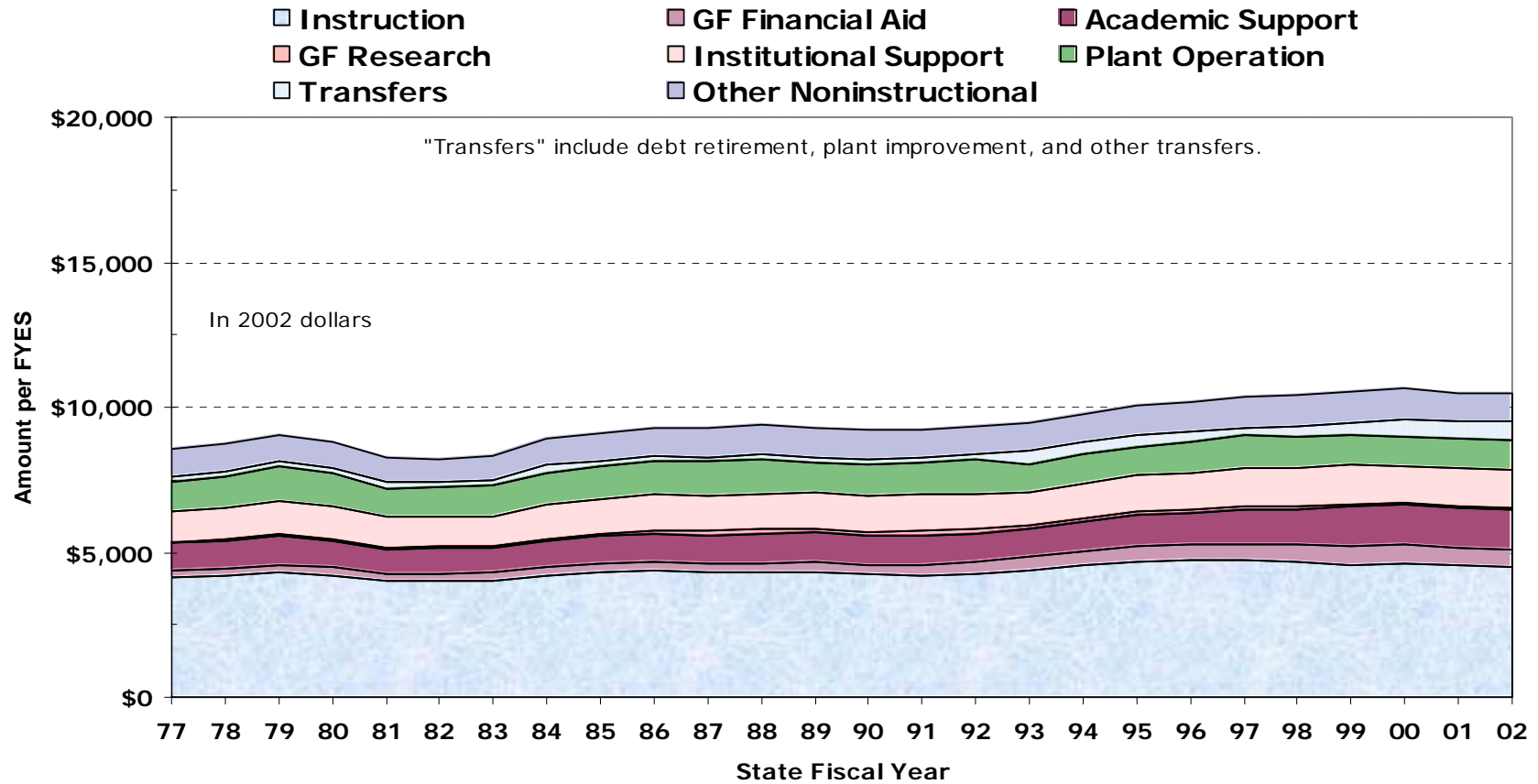


Figure OTHEREXPENDS1: Other State Universities' General Fund Expenditures

State universities expend their financial resources in a number of areas, including instruction, public service, and research. The HEIDI database is a repository of enrollment, staffing, and expenditure data for the fifteen state universities.

Major categories of HEIDI expenditure data include: (a) instruction, (b) financial aid, (c) research, (d) academic support, (e) institutional support, (f) plant operation and maintenance, (g) student services, (h) auxiliary enterprises, and (i) transfers.

Figure OTHEREXPENDS1 displays the major categories of expenditures per Fiscal Year Equated Student (FYES), adjusted for inflation using the Higher Education Price Index, for the other twelve state universities.

Total per-FYES General Fund spending in FY 1977 was \$8,500, and in FY 2002 it was \$10,447 in inflation-adjusted dollars. The first component shown, direct instructional program expenditures, are those “expenditures for general academic instruction, occupational and vocational instruction, and special session instruction conducted by the teaching faculty for the institution’s students.” One notices that this category has been flat to declining since FY 1996. Over the entire period, the per-FYES amount has increased \$70.

Financial Aid Support

The second sector displayed is GF financial aid expenditures per FYES. That has been steadily increasing over time from

\$270 to over \$600 per FYES in FY 2002. These are internal monies allocated for tuition support.

Figure OTHEREXPENDS1 also shows that academic support expenditures per FYES have increased above inflation in this period. Additional spending on library and computing support areas is the likely reason for the expenditure growth. .

Plant operation and maintenance has been a fairly steady component throughout this period. In fact, over twenty-five years, the per-FYES figure has increased only \$8 in inflation-adjusted dollars. CMU, FSU, and GVSU had above-average percentage increases in plant operation/maintenance costs per FYES during this period. Several campuses had below-average growth, including EMU, LSSU, and OU. Whether this outcome was due to deferred maintenance or efficiencies in utilities and other costs is unknown.

Transfers for debt retirement, plant improvement, and other purposes increased for this twelve-university group of campuses in the state university system. While remaining a very small and fairly steady component of state university spending until FY 1993, transfers have become a larger component and exceeded GF financial aid spending per FYES in FY 2002.

Note: The Appendix contains a black-and-white version of this chart for faster printing.

GENERAL FUND EXPENDITURES BY CATEGORY

Figure TOTALEXPENDS1:
University General Fund Expenditures, adjusted by HEPI,
per Fiscal Year Equated Student has increased at all state
universities and most noticeably at UM.

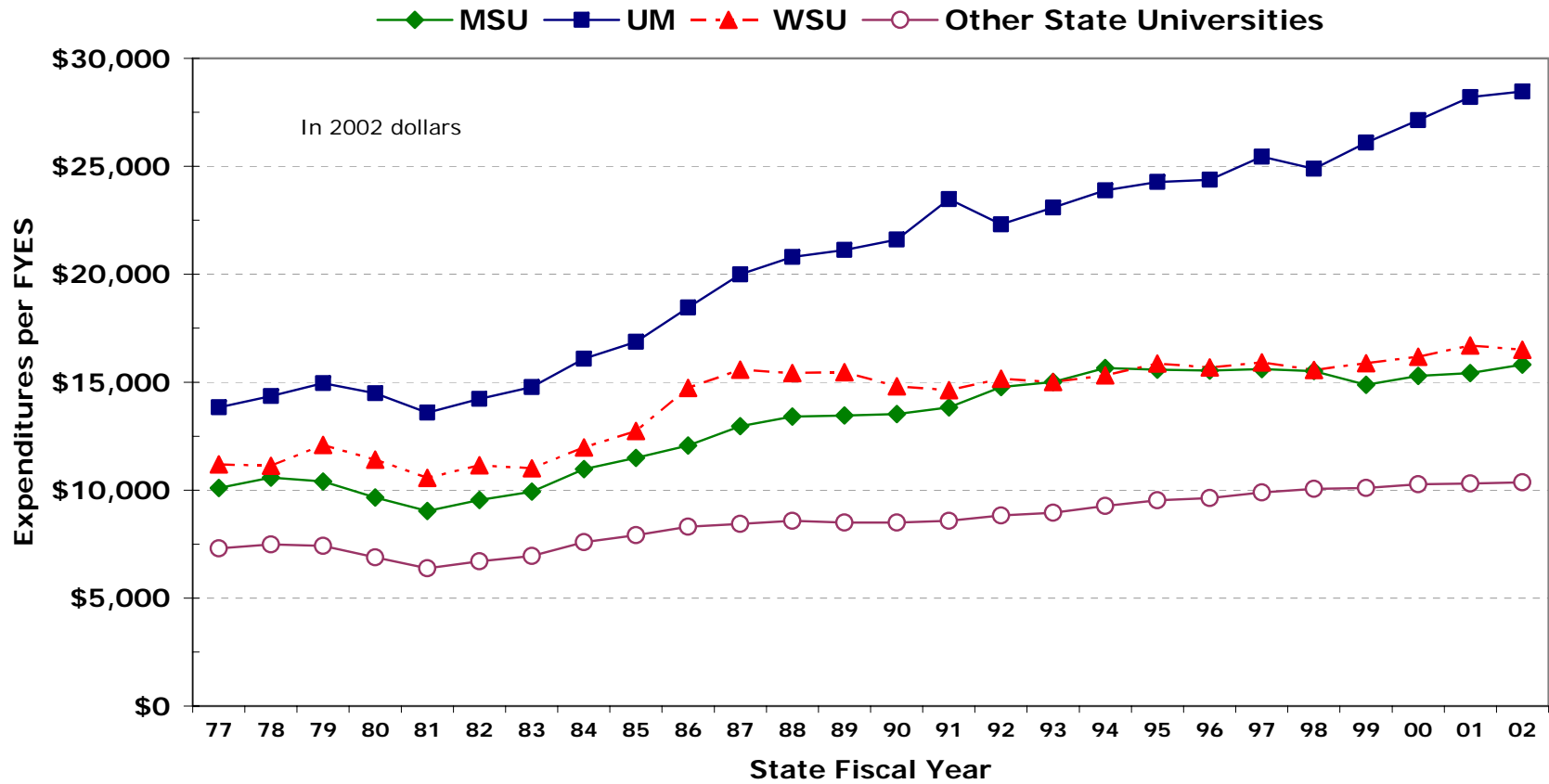


Figure TOTALEXPENDS1: Total Expenditures per Fiscal Year Equated Student

In the HEIDI database, state universities report their annual General Fund expenditures in a set of major categories: (a) instruction, (b) financial aid, (c) academic support, (d) institutional support, (e) research, (f) student services, (g) plant maintenance and operation, (h) public service, (i) auxiliary activities, and (j) transfers.

Figure TOTALEXPENDS1 displays the total General Fund spending, adjusted for inflation by the HEPI index, per fiscal year equated student. One notices an upward trend for the three major research universities and the aggregate of spending per student by the other twelve institutions.

The growth rate in this period varied among the institutions. While UM expended at 2.3 % above inflation annually, MSU and WSU spent at 1.2 % and 1 %, respectively, above inflation. The aggregate spending of the “other” twelve state universities grew at a rate of 0.8 % above HEPI annually.

The three campuses with the highest above-inflation spending patterns were Michigan Technological University, UM, and Ferris State University. All three had large enrollments in engineering, the sciences, or engineering technology curricula; those programs were generally the most expensive academic areas on campus.

Spurts of Above-average Spending

A noticeable feature of the line graphs is periods of accelerated spending followed by flat-to-slower-growth time frames. The period after the major 1980-82 recession included a long segment of above-average growth, whereas the early 1990's witnessed slower growth per FYES. One possible causative factor was enrollment decline in the 1980's. If expenditures could not be or were not reduced commensurate with enrollment declines, the result would be higher per-FYES spending. And the chart displays that outcome.

In the 1990's, when enrollment were growing (as Figure FYES1 displayed), the per-FYES growth rate was more moderate for most institutions. UM seemed to be somewhat of an exception in that time period.

Figure INSTRUCTION1:
Instructional expenditures per Fiscal Year Equated Student have been flat to declining since FY 1996.

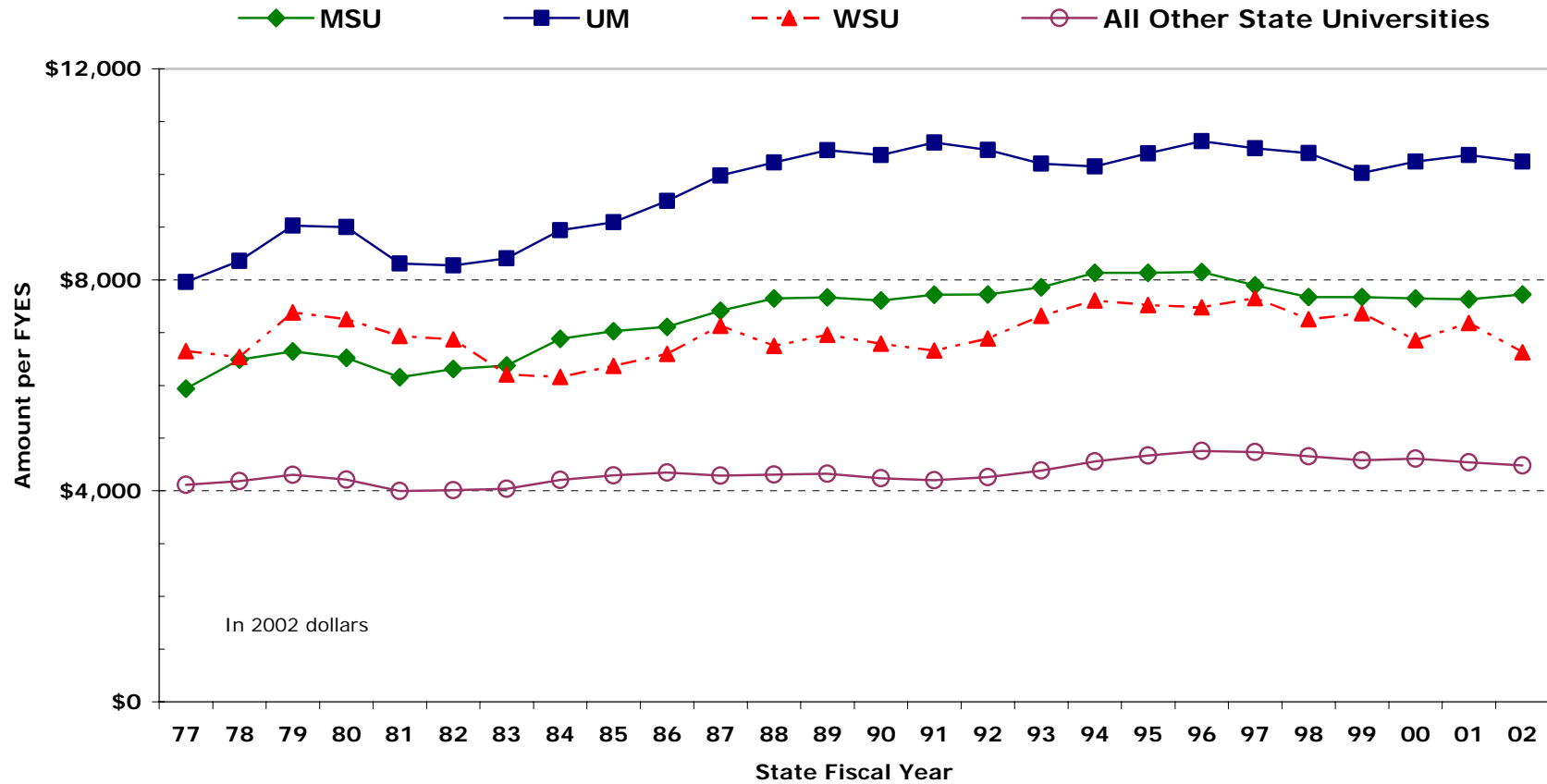


Figure INSTRUCTION1: Instructional Expenditures per Fiscal Year Equated Student

A core element of a state university is the instructional program conducted by full- and part-time faculty and their assistants. In the HEIDI database system, instructional costs are faculty salary expenditures based on the instructional program and course level taught by specific faculty plus indirect instructional expenditures including salaries paid to administrative/clerical/technical staff, fringe benefit costs, supplies and other non-equipment expenses (including travel, telephones, etc.), and equipment expenses.

Figure INSTRUCTION1 displays the pattern of instructional expenditures per Fiscal Year Equated Student adjusted for inflation. The first noticeable trend is expansion of the range of instructional expenditures per FYES shown from about \$3,800 in FY 1977 to over \$5,000 in FY 2002. Part of that expansion can be explained by the more competitive nature of faculty salaries at the University of Michigan over time. Secondly, enrollment in more expensive academic programs has also occurred at UM. For example, its engineering program has seen a 60 % increase in student credit hour production in this time period. That has been accompanied by a comparable increase in engineering faculty and in total engineering expenditures per FYES.

Different Growth Patterns

While each of the major research universities were experiencing an average annual increase in instructional expenditures per FYES of about 1 % greater than inflation, as measured by HEPI, the other state universities in aggregate had instructional cost per FYES growth trends of about 0.3% above

inflation. Two exceptions to this lower trend among these twelve universities were Ferris State and Michigan Technological Universities. FSU had an average annual increase of 1.6 % over inflation, and that pattern is likely attributable to the more expensive instructional programs now offered at FSU and to the enrollment decline that FSU suffered until about FY 1998.

Michigan Tech displayed a compound annual increase of 2.2 % over inflation due in part to its academic concentration in engineering programs as well as its enrollment decline. The former pushed up faculty salaries and the latter dropped FYES totals, yielding a higher cost per FYES.

Eastern Michigan, Lake Superior State, and Saginaw Valley State Universities reported lower than inflationary increases in instructional costs per FYES during this period. All three had enrollment increases from FY 1977 to FY 2002, and that factor contributed to the reduced inflation-adjusted instructional cost per FYES.

While MSU and WSU had higher instructional expenditures per FYES at the end of the period compared to the beginning, since FY 1977 both have reduced instructional costs per FYES relative to inflation.

Figure FINANCIALAID1:
University GF Financial Aid Expenditures, adusted by HEPI,
per Fiscal Year Equated Student has been on a general upward
trend at all universities but especially at UM.

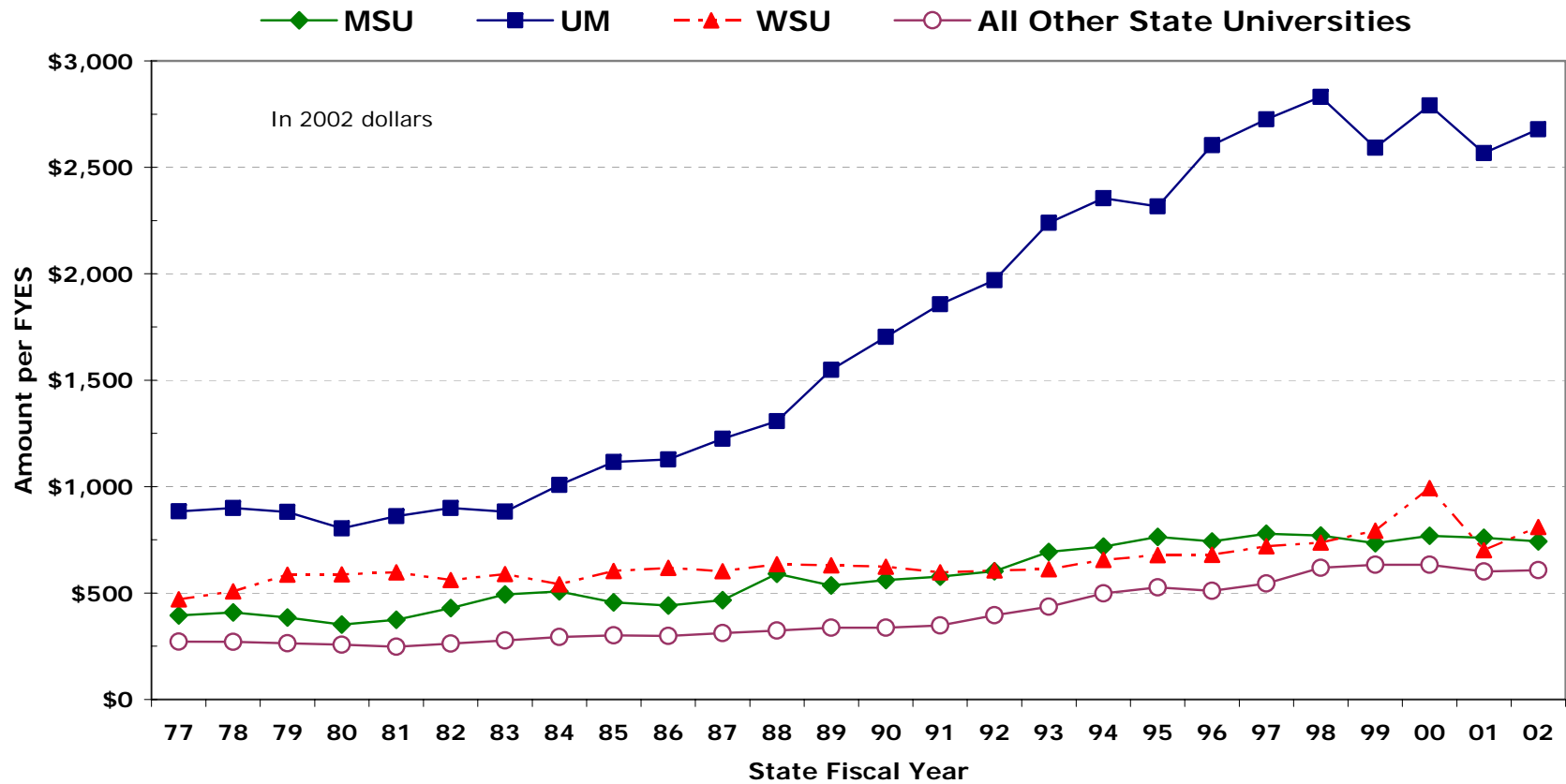


Figure FINANCIALAID1: University Financial Aid Expenditures per Fiscal Year Equated Student

When a student enrolls in a state university, he or she usually submits an application for financial aid. If the student is eligible for such assistance, he or she may receive federal assistance in terms of Pell and other grants, state assistance in terms of Competitive Scholarships and other aid, and institutional financial aid. These forms of financial aid convert the “sticker price” of tuition and fees to a “net price” for those students who receive either merit-based, need-based, or need-and-merit-based financial assistance.

UM Leads

Figure FINANCIALAID1 reports state university General Fund expenditures per FYES adjusted for inflation. It is evident that the University of Michigan has allocated a considerable amount of its GF resources to financial aid per FYES. In FY 2002, UM provided an average of nearly \$2,700 per FYES in university financial aid from its General Fund.

One reason for UM’s ability to do so is likely its considerable nonresident student population which provides financial resources, through higher tuition and fees, which can be redirected to assist all students, residents and nonresidents alike, who have financial need.

A remarkable feature of the chart is that UM began its commitment to increasing financial aid per FYES in FY 1983, immediately after the major recession of 1980-1982. Other campuses appear to have expended more resources per FYES beginning in the late 1980’s.

While most of the other state universities have increased their financial aid support by about 3 % above inflation annually, Ferris State, Michigan Tech, and the University of Michigan have reported compound average increases per FYES of 6.5 %, 6.3 %, and 4.5 % above inflation, respectively.

Figure SCHOLARSHIPS1:

While most of the state universities awarded less than \$750 per undergraduate Fiscal Year Equated Student in institutional scholarships in FY 2002, UM awarded nearly \$1,700 per FYES.

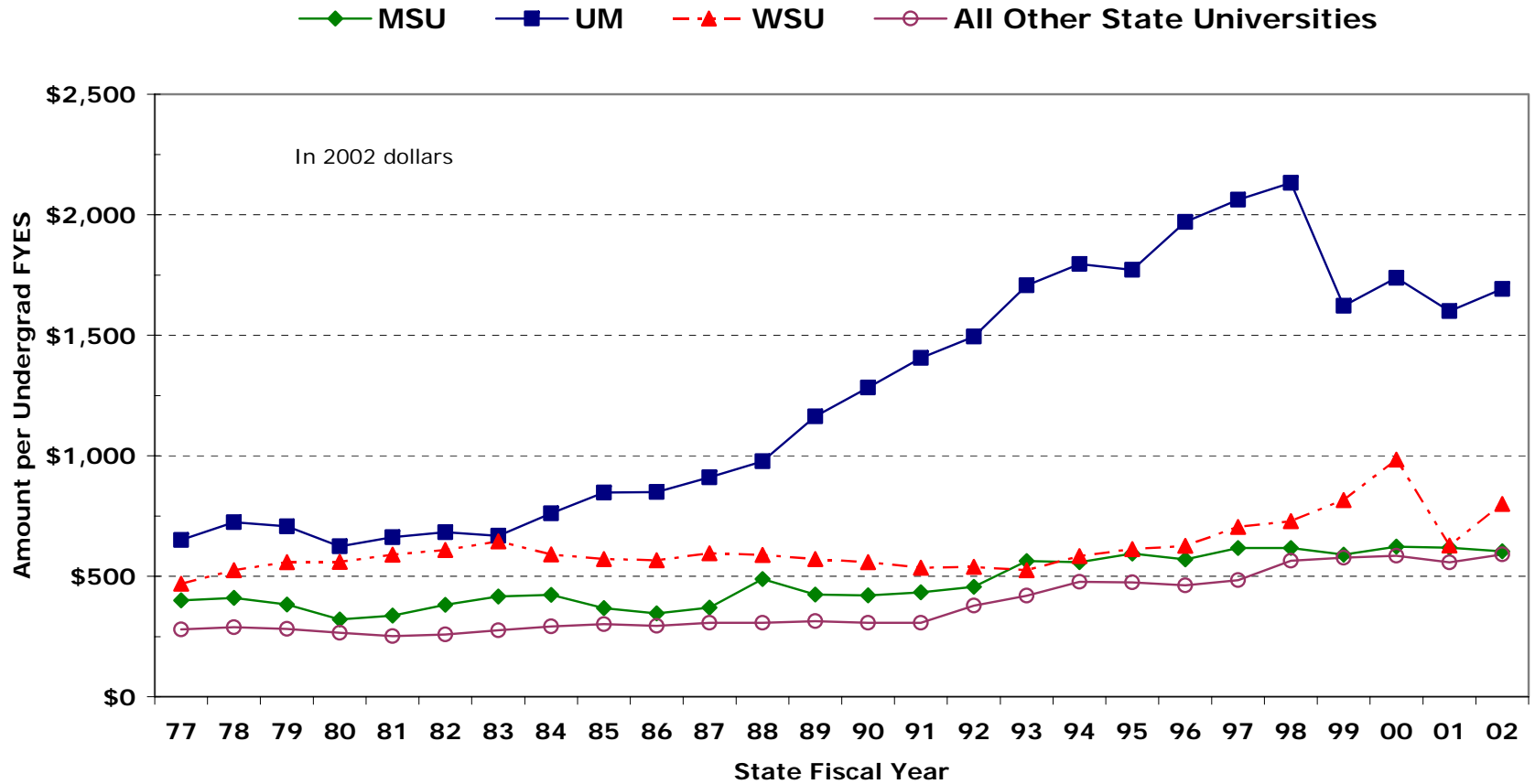


Figure SCHOLARSHIPS1: Undergraduate Scholarships per FYES

Figure SCHOLARSHIPS1 is a fascinating chart for a number of reasons. It separates out the undergraduate portion of General Fund financial aid shown in the preceding chart. And it is a stimulus for consideration of “sticker price” and “net price” of undergraduate education.

Scholarships, as defined for the HEIDI database, are “grants-in-aid, trainee stipends, tuition and fee waivers, and prizes provided to undergraduate students.” They reduce the costs of higher education for recipients.

They can also be viewed as the factor that converts tuition “sticker price” to tuition “net price.”

“Sticker” Price

As Figure SCHOLARSHIPS1 displays, beginning in FY 1984 the University of Michigan at Ann Arbor has allocated a substantial amount of per-FYES spending for institutional undergraduate scholarships. His chart sums the total scholarship spending for a fiscal year and divides that total by the total of undergraduate FYES. It does not imply that each undergraduate received a subsidy of \$1,700; it does indicate that the “average” financial aid grant from institutional resources was \$1,700. That means the “average” tuition paid by an undergraduate in FY 2002 was \$1,700 less than the “sticker price” (tuition rate) reported in the HEIDI database.

Except for one fiscal year (FY 1977), Wayne State has reported spending more than \$500 per FYES on undergraduate scholarships. Michigan State and the aggregate of the other twelve state universities have reported increased per-FYES on undergraduate scholarships since FY 1992. The trendlines for MSU and the other universities have now approached \$600 per FYES.

If one examines the detail for the twelve universities, one will discover that Michigan Technological University spent nearly \$1,500 per FYES in FY 2002 on undergraduate scholarships. Thus, MTU was exceeded by only the University of Michigan in undergraduate scholarships per FYES. And it had reduced its contribution from its peak year of FY 2000.

Though corroborating evidence does not exist in the HEIDI database, it appears that the infusion of state financial assistance in FY 2000 and beyond may have had some impact on flattening or reducing institutional GF scholarship spending per student. It is a question worthy of review.

Figure ACADEMICSUPPORT1:
The trend in academic support expenditures, adjusted by HEPI,
per Fiscal Year Equated Student has varied considerably among the
state universities.

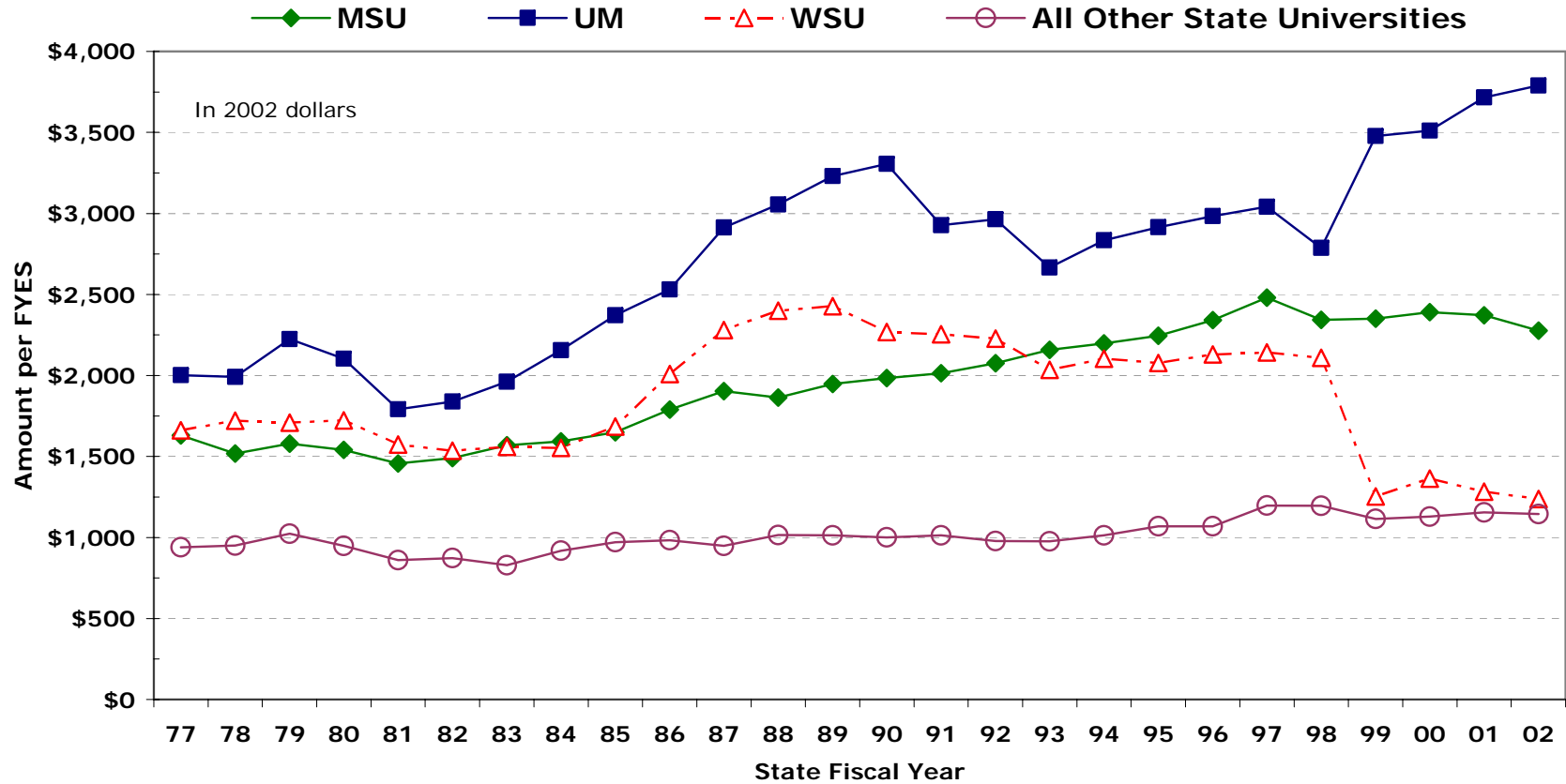


Figure ACADEMICSUPPORT1: Academic Support Expenditures per Fiscal Year Equated Student

The three core elements of a state university's operation are research, and public service. Academic support activities are those which provide support services related to those three areas of university operations, including retention, preservation, and display of materials and the provision of services that directly assist the instruction, research, and public service functions of the institution.

In their data submissions to the HEIDI database, the universities include the following academic support subprograms: (a) Libraries, both general and departmental, (b) Museums and Galleries, (c) Audiovisual media services, and (d) Computing support related to the instruction, research, and public service functions of the institution.

Figure ACADEMICSUPPORT1 shows the per-FYES spending trends for the three major research universities and the other twelve state universities.

UM Leads Big Three

UM's per-FYES growth rate in the quarter century exceeded

that of the other major research universities. It was 2.6 % above inflation annually, while MSU was at 1.3 % above inflation and Wayne State at 1.2 % below inflation on a compound annual basis per FYES. WSU's compound average decline over this period was caused primarily by reductions in reported spending in the areas of Library and Audiovisual Media support from FY 1998 to FY 1999.

For these three campuses, one area of increasing cost in terms of academic support was academic computing equipment, scientific instrumentation, and other such equipment used in a variety of disciplines, especially in graduate programs.

Meanwhile, the other twelve had an aggregate per-FYES growth rate of 1.5 % above inflation annually. Campuses exceeding that rate were Ferris State at 4.1 %, Lake Superior State at 3.5 %, and Western Michigan at 2.9 % annually.

Figure INSTITUTIONALSUPPORT1:
Institutional support expenditures , adjusted by HEPI ,
per Fiscal Year Equated Student has fluctuated for UM and WSU
and has been fairly steady at MSU and the other universities.

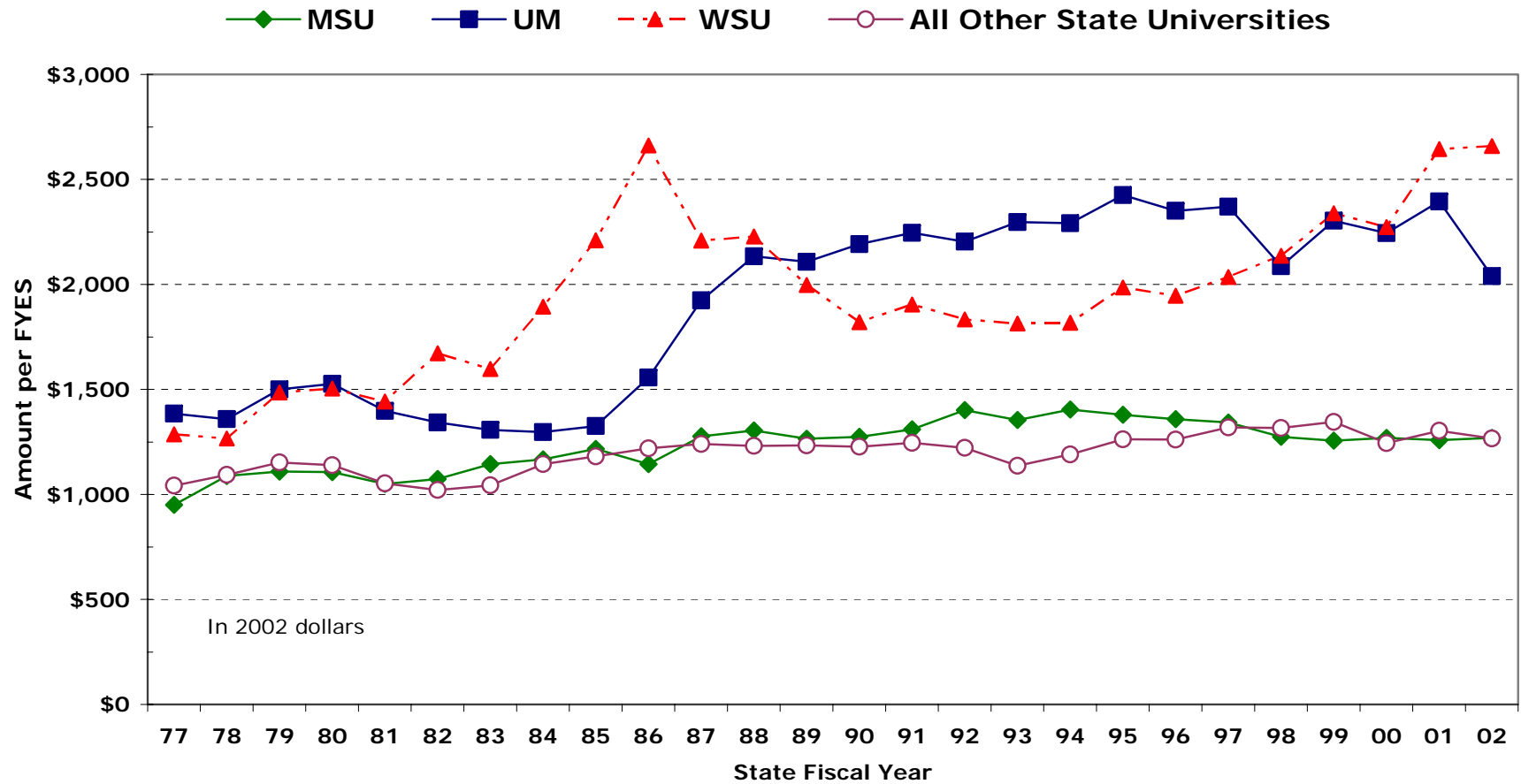


Figure INSTITUTIONALSUPPORT1: IS Expenditures per Fiscal Year Equated Student

The three core elements of a state university's operation are research, and public service. Institutional support activities are those which are usually considered as administrative behavior to provide operational support for the day-to-day functioning of the institution. The HEIDI database includes the following subprograms under this category: (a) executive management of and planning for the institution; (b) fiscal operations related to fiscal control and investments of the institution; (c) general administrative services, including administrative data processing, space management, and personnel functions; (d) logistical services, such as purchasing, transportation, printing, and campus security functions; and (e) community relations activities including development and fund raising.

As Figure INSTITUTIONALSUPPORT1 reports, the range of per-FYES spending in this category was fairly compact in FY 1977. The highest per-FYES spending (UM) was about 30 % higher than the lowest shown (MSU). When one examines each individual campus' data, the range broadens to 100 % from lowest to highest.

In FY 2002, the range displayed on this chart was about 120 % (from the aggregated twelve universities to Wayne State). If one considers the individual campuses, the range had broadened from 100 % in FY 1977 to 300 % in FY 2002.

WSU Spending More

The campus with the highest per-FYES level was Wayne State. A contributing factor to its ranking was considerable spending in FY 2002 and several prior fiscal years. It appears as though the additional spending per student occurred in the subprogram of general administrative service. It is uncertain whether that higher level of spending per FYES was linked to increased costs associated with administrative data processing expenditures or some other general administrative service.

The surge in institutional support costs per FYES for UM in the period FY 1986 through FY 1988 was attributable to substantially higher expenditures in general administrative services.

Likewise, above-average increases in general administrative services per FYES spending explains Wayne State's spurt in FY 1984 through FY 1986. While WSU's enrollment was declining, its general administrative expenses were not commensurately reduced.

Figure RESEARCH1:
University GF research expenditures, adjusted by HEPI,
per Fiscal Year Equated Student have increased at the major
research universities and especially at UM.

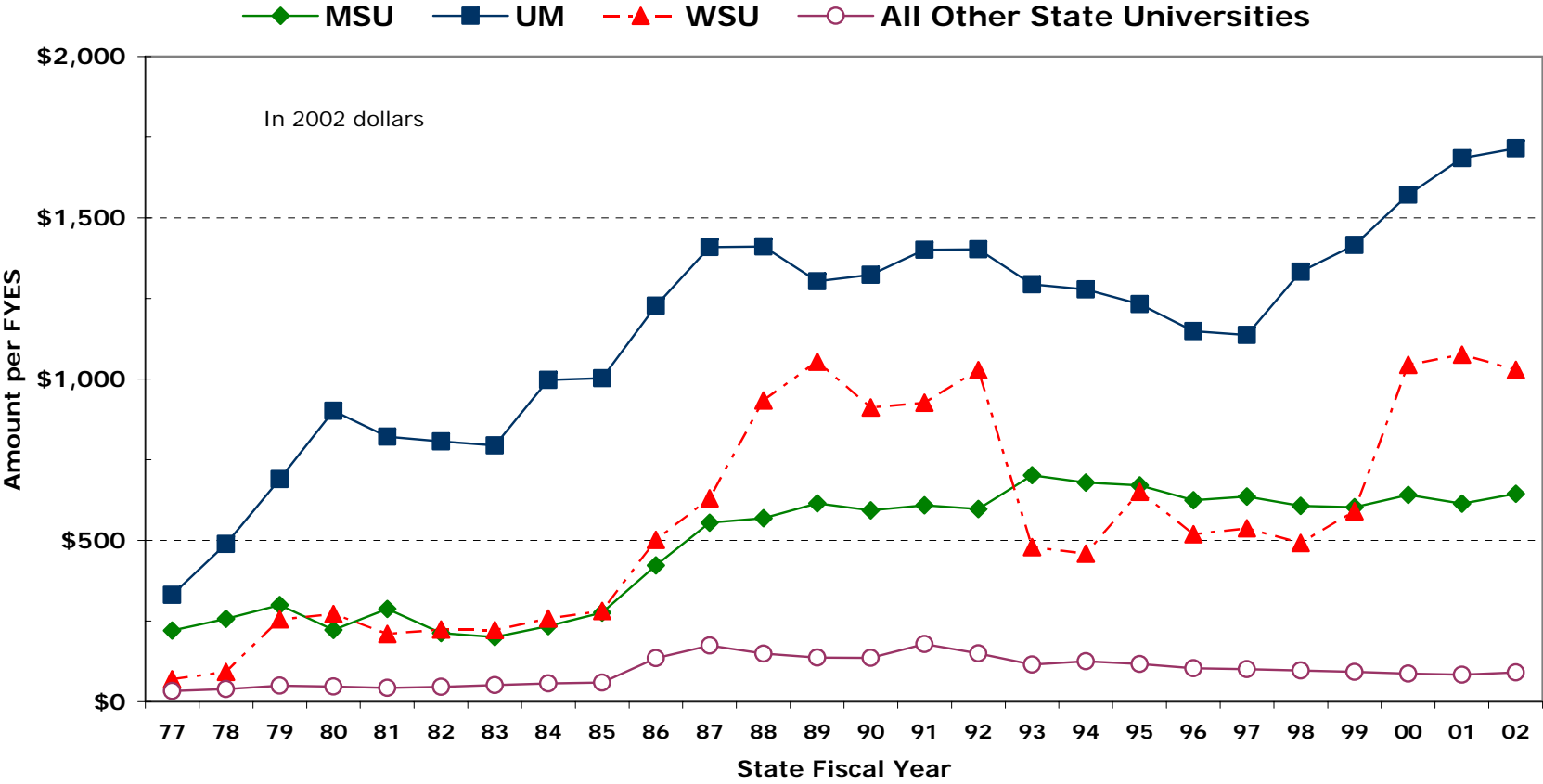


Figure RESEARCH1: University GF Research Expenditures per Fiscal Year Equated Student

The three core elements of a state university's operation are research, and public service. University general fund activities specifically organized to produce research outcomes include the following subprograms: (a) institutes and research centers, which are formal organizations created to manage research efforts; and (b) individual or project research, which are activities managed within academic departments as a result of a contract or grant or the specific allocation of institutional resources. Financial resources for research other than general fund allocations are not included in the data used to calculate these trend lines.

Big Three Spend More

Figure RESEARCH1 displays the substantial investment of General Fund resources by UM to support research enterprises. In FY 1977 it had expended \$330 per FYES on research. In FY 2002 its expenditure per FYES had reached \$1,700. That is a compound average annual increase of 6.8 % above inflation.

While starting at a lower level per FYES in FY 1977, Wayne State had an even higher average rate of increase on GF research expenditures per FYES, 11.4 % above inflation annually. It reported over \$1,000 per FYES in FY 2002.

Meanwhile, MSU exhibited a rate of increase of 4.4 % above inflation annually and reached a per-FYES spending level of \$644 in FY 2002.

The other twelve campuses have generally remained under \$150 per FYES for the entire quarter-century. Michigan Technological University did expend over \$1,000 per FYES on GF research in the early 1990's, but it has its GF research spending substantially since then. It is likely that MTU has shifted its research spending to restricted funds in the past decade.

Figure STUDENTSERVICES1:
University student services expenditures, adjusted by HEPI,
per Fiscal Year Equated Student have increased at UM and WSU.

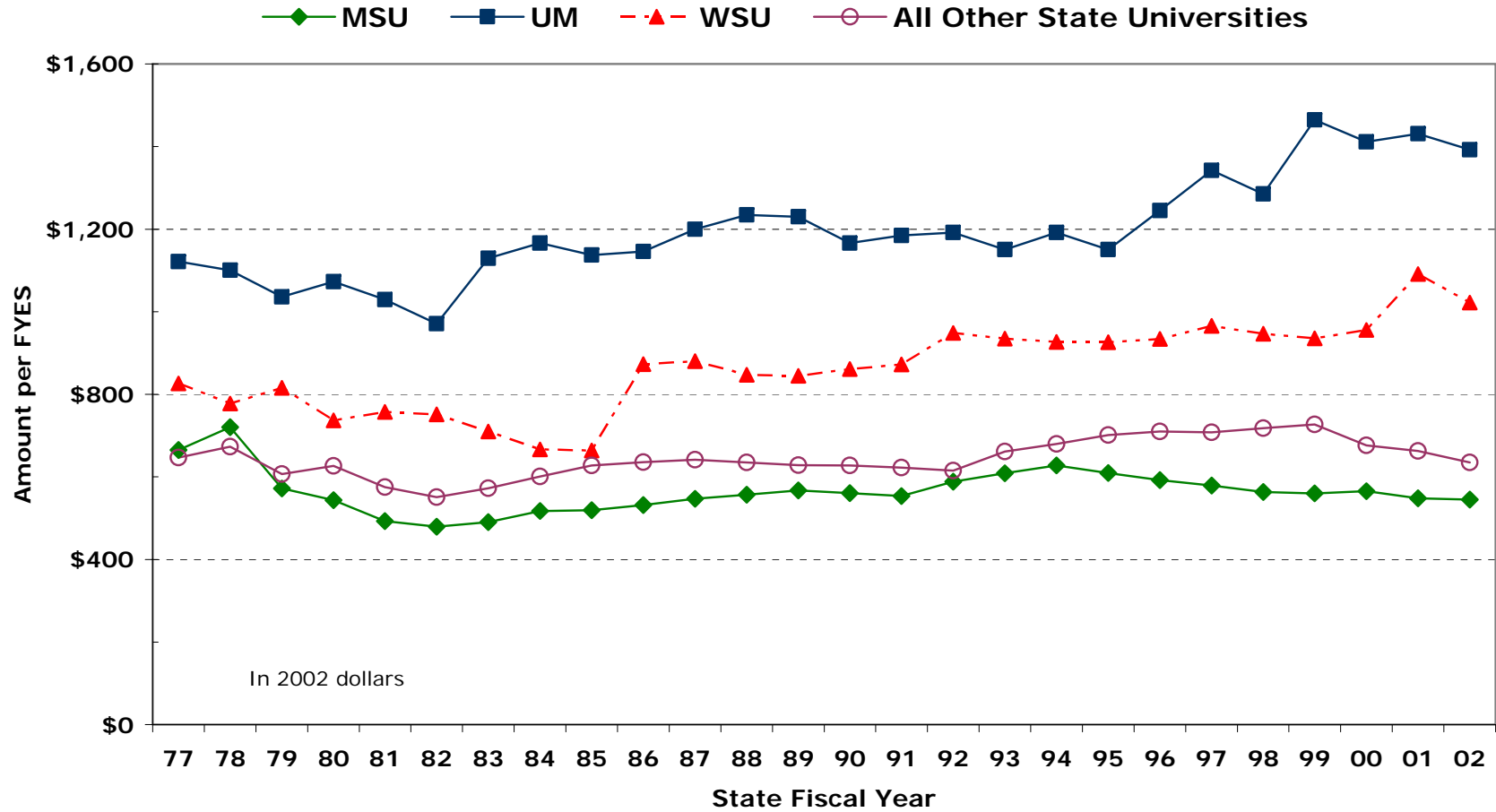


Figure STUDENTSERVICES1: Student Services Expenditures per Fiscal Year Equated Student

Student services is an expenditure category that includes activities relating to admissions, registration, and activities that contribute to a student's emotional and physical well-being and to his or her intellectual, cultural, and social development outside formal instructional programs.

Figure STUDENTSERVICES1 shows the per-FYES expenditure levels, adjusted for inflation, for the past quarter century.

As in a number of other charts, the University of Michigan at Ann Arbor spent more in this category for every year of this period. Wayne State University was second in spending during the entire time frame. Except for FY 1977 and FY 1978, MSU expended less per student than did the aggregate average of the other twelve state universities.

While the aggregate expenditure per FYES for the twelve other state universities showed a less-than-inflationary trend over this period, there was considerable variation among the state universities. Seven spent an average per FYES of less-than-inflation annually, while five expended more than inflation per FYES on a compound annual average basis between FY 1977 and FY 2002.

One possible explanation may be availability of cultural and social programs in the communities nearby or adjacent to the universities. Those which have such opportunities may have invested less per FYES than those state universities which did not have such favorable circumstances. But since a geographic correlation is not apparent to the author of this study, further review of this particular outcome would be advisable.

Figure PLANTOPERATION1:
For most campuses, plant operations and maintenance expenditures, adjusted for HEPI, per Fiscal Year Equated Student peaked in the late 1980's.

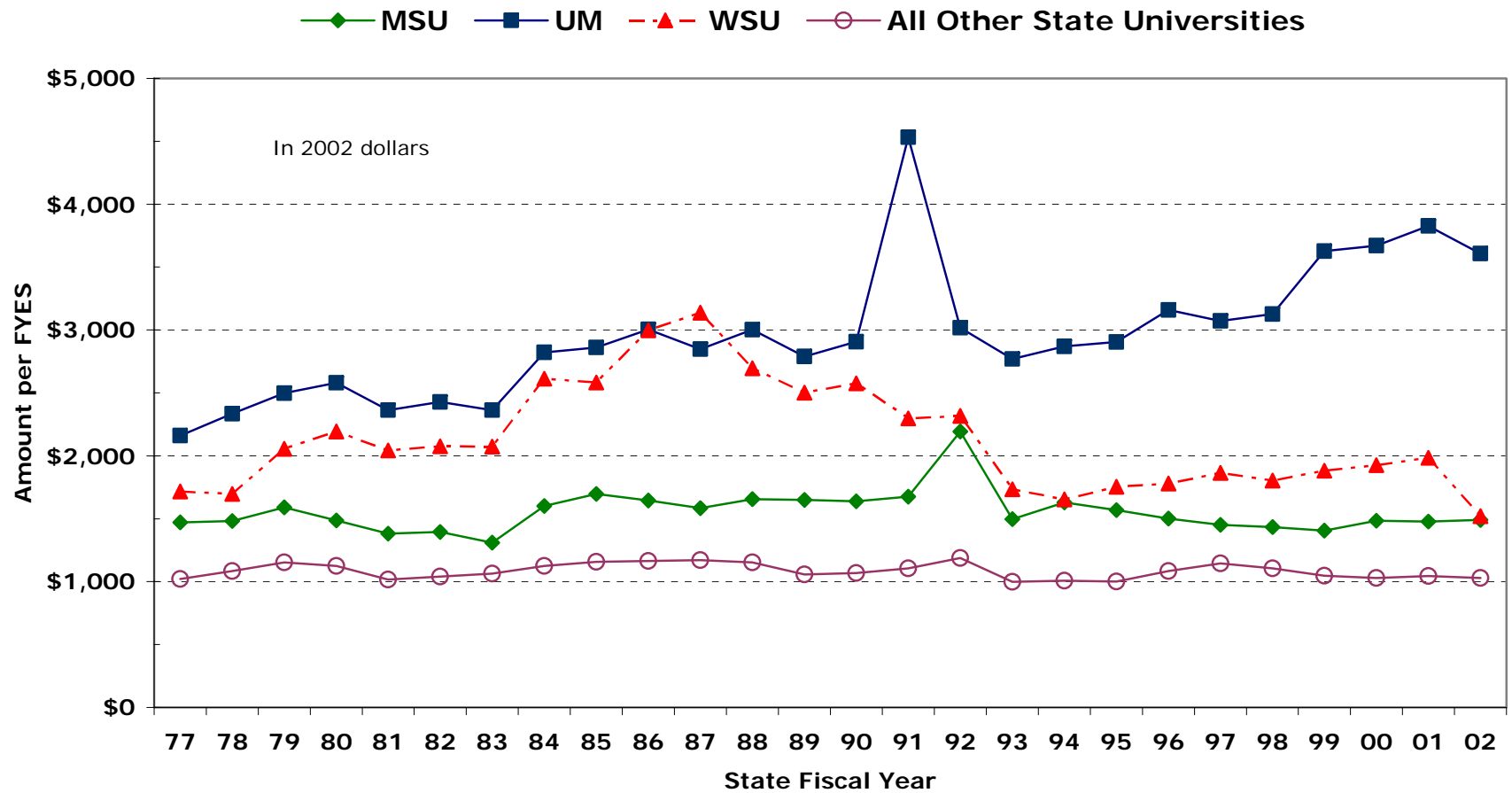


Figure PLANTOPERATION1: Operation & Maintenance Expenditures per Fiscal Year Equated Student

Each university endeavors to provide the very best maintenance and appropriate services related to campus grounds and facilities. The HEIDI database collects information concerning those expenditures annually.

The data is reported in several subcategories: (a) physical plant administration, which involves direct support of the institution's physical plant operations including plant expansion or modification; (b) building maintenance activities related to routine repair and maintenance of buildings and structures, including both normally recurring repairs and preventive maintenance; (c) custodial services of institutional buildings; (d) utilities expenditures related to heating, cooling, electricity, gas, water, and any other utilities necessary for operation of the physical plant; and (e) expenditures related to the operation and maintenance of campus landscape and grounds.

As Figure PLANTOPERATION1 shows, there has been considerable variation among the universities in terms of plant maintenance and operation. The challenge is assessing such spending is the appropriate benchmark measure. FYES was used, since most of the other charts in this study use that as the denominator of the calculations. However, the chart will have a slightly different shape if one used General Fund square footage as the comparative measure. See Figure PLANTOPERATION2 for that display.

Wide Range of Spending

In FY 1977, the range of spending per FYES shown in this chart was from \$1,000 to \$2,150. And only one campus, CMU, had expended less than \$1,000 per FYES on plant operation and maintenance.

By FY 2002, the range had expanded considerably, with \$1,000 per FYES up to \$3,600. And four campuses had spent below \$1,000 in FY 2002.

Two campuses exhibited spikes in their plant operation and maintenance budgets. UM in FY 1991 and MSU in FY 1992 had surges in spending for deferred maintenance projects that could not be postponed further. If one removed that additional spending in those respective fiscal years, the trendlines for those two institutions would fall into the general pattern that existed before and after those fiscal years.

Plant maintenance needs to be examined in more detail to determine if adequate resources are being devoted to repair, renovation, and maintenance.

Figure PLANTOPERATION2:
Plant operation and maintenance expenditures per GF Gross Square Footage
Footage have been flat to declining for all state universities except UM.

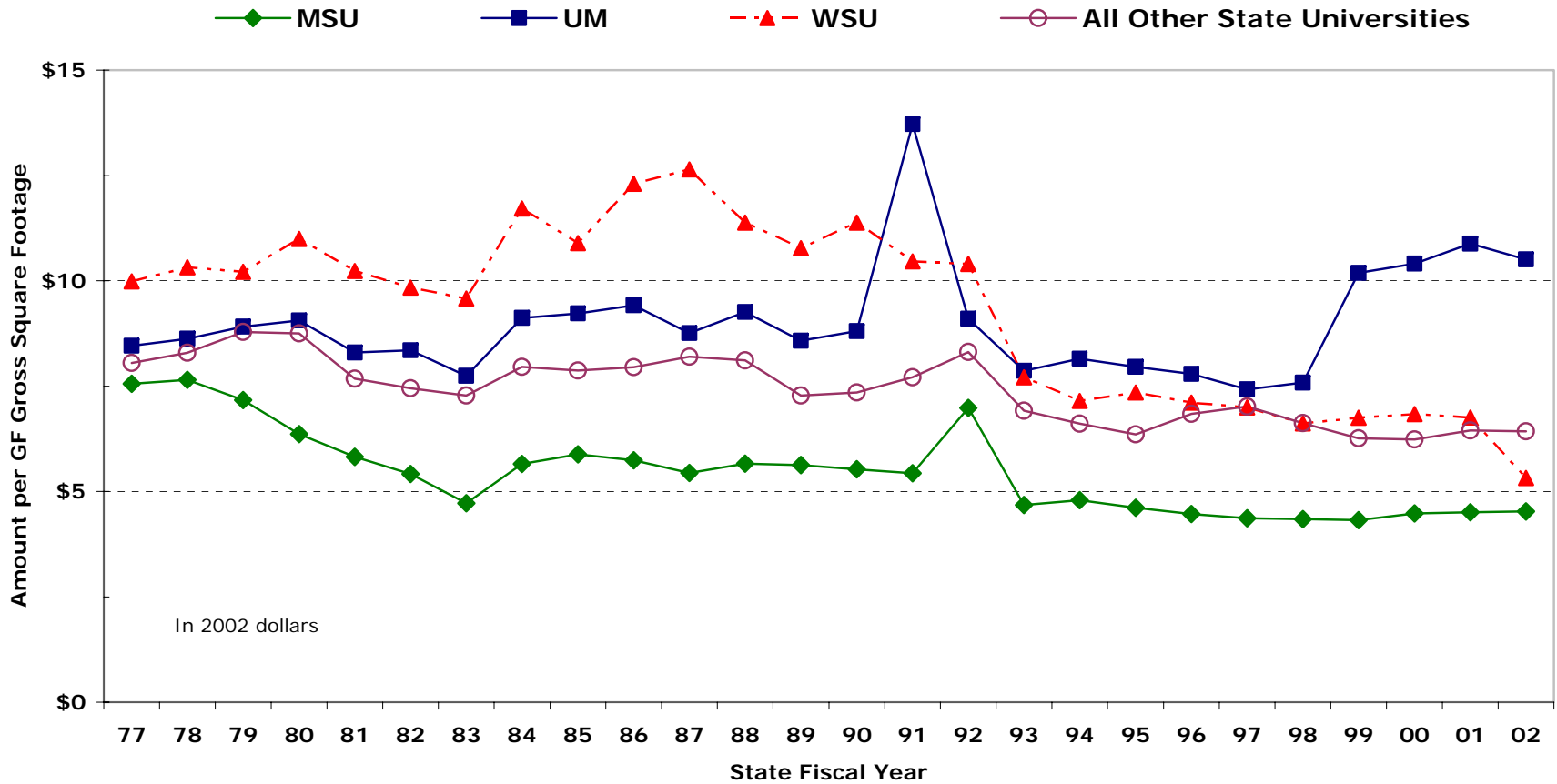


Figure PLANTOPERATION2: Operation & Maintenance Expenditures per GF Gross Square Feet

As Figure PLANTOPERATION2 shows, there has been considerable variation among the universities in terms of reported plant maintenance and operation expenditures per General Fund gross square footage.

At the beginning of the period of study, the campuses were generally clustered around \$7.50 to \$8.50 per square foot in terms of spending. Wayne State was the outlier at that time, expending \$10 per square foot. If one examined the underlying detail for the other twelve universities, one would discover that UM-Dearborn, UM-Flint, Saginaw Valley, and Grand Valley were all expending more than WSU. Those campuses were just in the early years of their evolution into regional universities.

Reduced Spending per FYES

At the end of FY 2002, all of the universities except UM and UM-Flint had reduced their plant operation and maintenance spending per gross square footage on an inflation-adjusted basis.

The spike in spending by UM and MSU in FY 1991 and FY 1992, respectively, clearly evident in Figure PLANTOPERATION1, is also visible on this chart.

Figure AUXEXPENDS1:
Auxiliary enterprise expenditures, adjusted for inflation, per fiscal year equated student, has absorbed fewer GF resources recently.

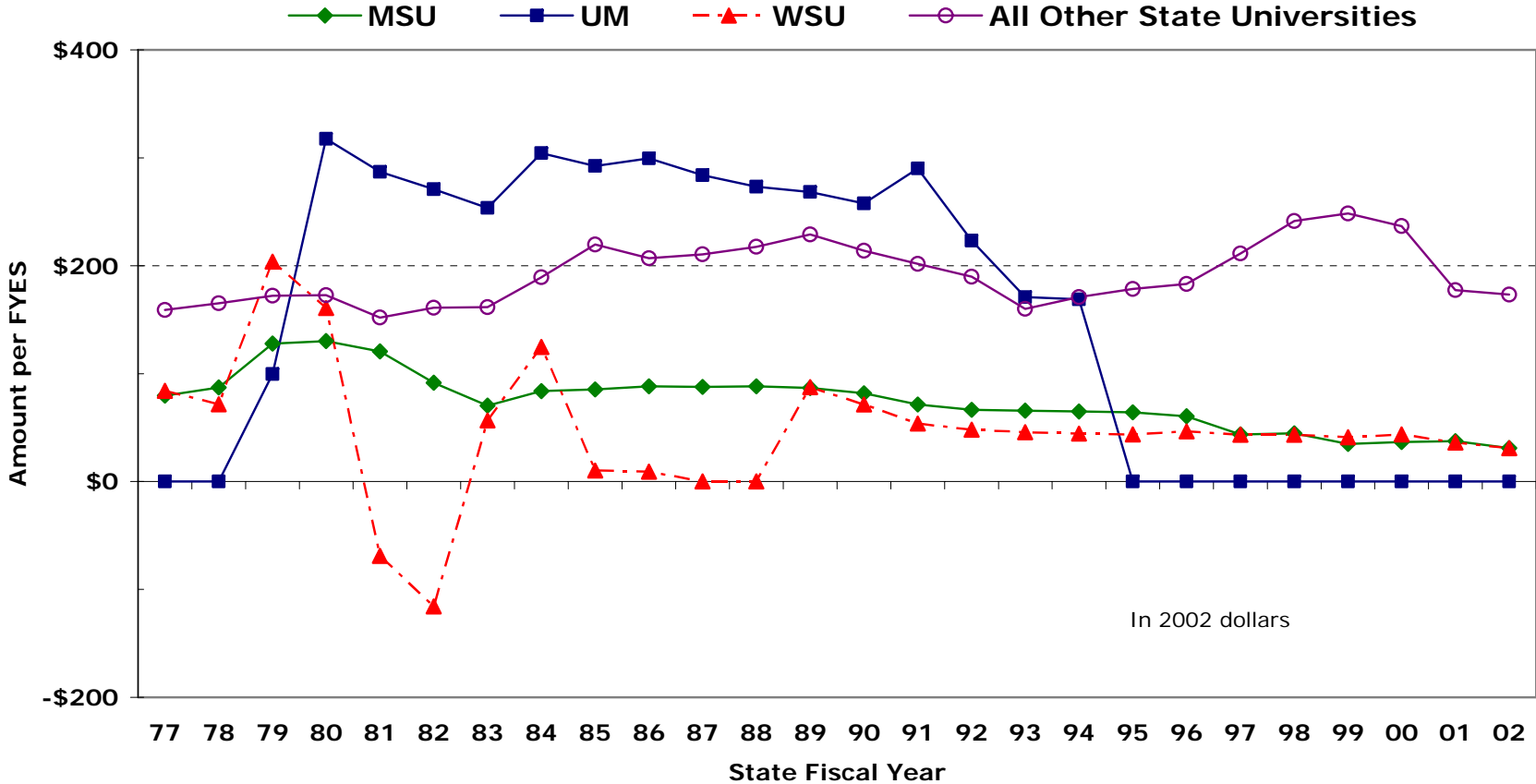


Figure AUXEXPENDS1: Auxiliary Enterprise Expenditures per FYES

Auxiliary enterprise activities at a state university are those that furnish a service to students, faculty or staff for which a fee is charged. Examples are residence halls, food services, intercollegiate athletics, and student stores.

The HEIDI database includes data on the following subprograms: (a) student activities furnished as a service to students for which a fee is charged; (b) faculty/staff activities furnished as a service to faculty/staff for which a fee is charged; (c) intercollegiate athletics activities; and (d) activities associated with the operation of a hospital, including nursing, administrative services, fiscal services, and physical plant operations.

For those universities with higher per-FYES expenditures, it is usually associated with intercollegiate athletics. For the universities with major sports programs, intercollegiate athletic expenditures are primarily, if not exclusively, supported by a restricted auxiliary activities fund.

Thus, the higher amount per FYES reported by the twelve other state universities indicates that they have allocated GF resources to auxiliary enterprises, such as an intercollegiate sports program, and also shows that auxiliary enterprise activities at those campuses are more dependent upon the institution's General Fund than at the three major research universities.

The decline evident in reported UM auxiliary enterprise spending is likely attributable to a shift in those obligations to a restricted Auxiliary Activities fund away from the General Fund.

Figure PUBLICSERVICE1:
Public service expenditures per fiscal year equated student have varied considerably among the state universities in this period.

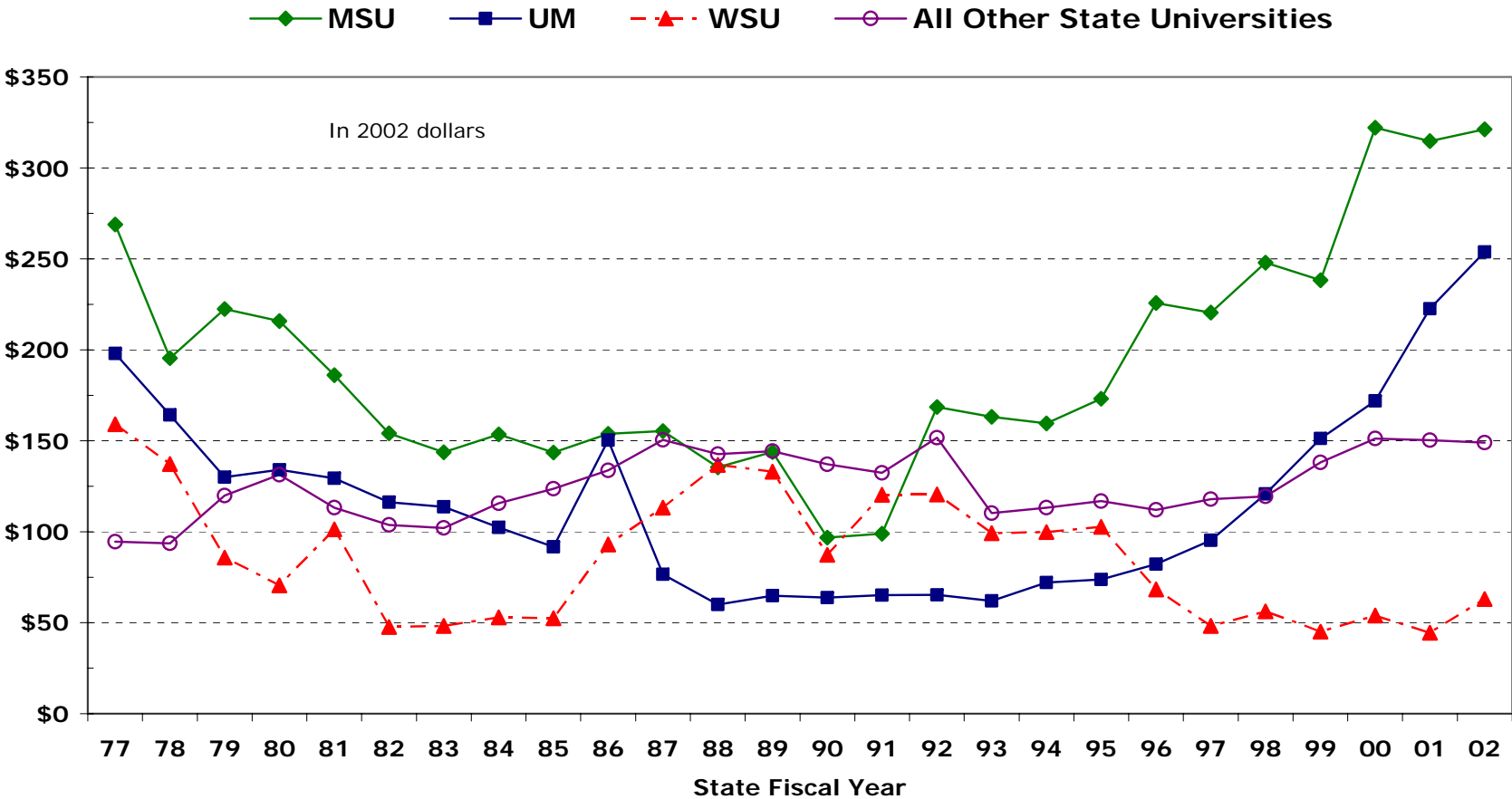


Figure PUBLICSERVICE1: Public Service Expenditures per FYES

The HEIDI database collects information regarding General Fund spending on public service activities, which provide non-instructional services such as seminars and projects beneficial to groups external to the institution.

The state higher education database includes the following subprograms: (a) community education, i.e., instruction to members of the community or groups external to the institution; (b) community service activities to make available to the public resources and capabilities that exist within the institution, such as conferences, institutes, reference bureaus, and public broadcasting; and (c) cooperative extension service activities such as cooperative extension and urban extensive activities established as a result of cooperative extension efforts between the institution and outside agencies.

Parallel Patterns

Figure PUBLICSERVICE1 reports that two institutions had considerable public service expenditures per FYES in FY 2002. MSU spent over \$300 per student on these activities, while the UM spent over \$250 per student. Both of these institutions had similar patterns over the past quarter-century.

MSU began this quarter of a century spending about \$270 per FYES on such activities. Then MSU decreased that spending to about \$100 per student at the time of the early 1990 recession. Since then, it has accelerated its spending per FYES and reached a level of \$320 in FY 2002. Some of that growth is certainly attributable to cooperative extension service activities.

Meanwhile, UM had spent about \$200 per FYES in FY 1977. It then reported lower spending, down to \$60 per student in FY 1988. Since that fiscal year, it has increased expenditures per FYES to a level of \$250 in FY 2002.

Wayne State's spending in this area has fluctuated between \$50 and \$150 per student throughout this period. It tended to lower expenditures during tight budgetary times.

The other twelve campuses split into two camps during this period. Some had annual average reductions in inflation-adjusted spending per student. Others, primarily those with public broadcasting operations, had increased their GF spending per student in this category.

Figure TRANSFERS1:
University General Fund Total Transfers, adjusted by HEPI,
per Fiscal Year Equated Student have increased dramatically for
many state universities since FY 1992.

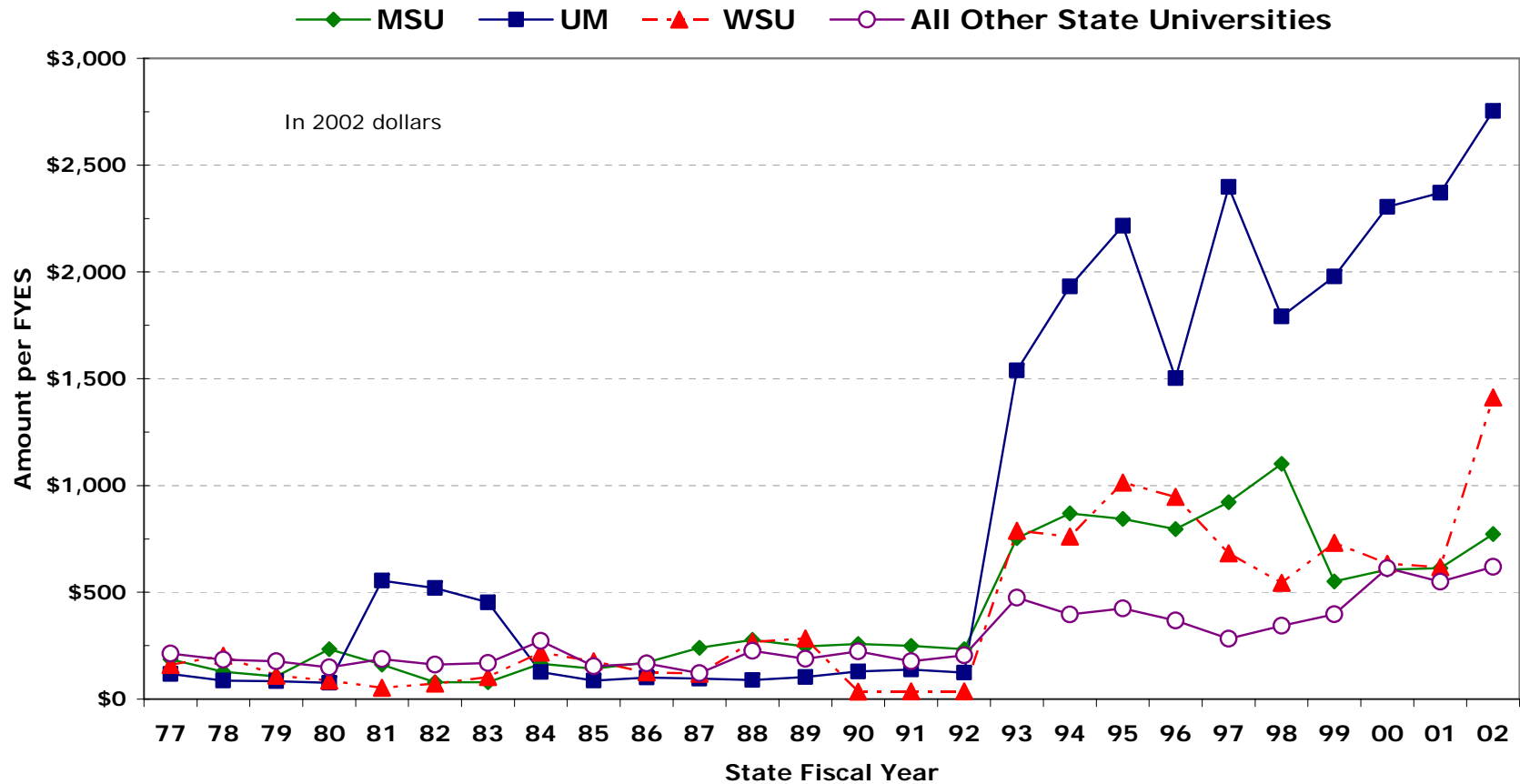


Figure TRANSFERS1: Total Transfers per FYES

Transfers are expenditures from a university's General Fund for debt retirement, other financing costs, renewals, and replacements for the education physical plant, auxiliary enterprises, hospitals, loan fund matching grant, and other mandatory transfers. Transfers in the HEIDI database also include discretionary transfers from the General Fund.

Figure TRANSFERS1 provides an overview of the total (mandatory and non-mandatory) transfers that have been university expenditures. Since non-mandatory transfers have only recently become a reported data item in HEIDI, Figure TRANSFERS1 displays total transfers per student.

Unusual Patterns

The surge in transfers in the period FY 1981 to FY 1983 for selected universities was attributable to mandatory transfers for debt retirement and plant improvement. Likewise, the apparent cause for the increases evident from FY 1993 through FY 1998 is mandatory transfers associated with similar obligations.

However, in FY 1999 through FY 2002, the acceleration in transfers per student seems to be linked to discretionary transfers. Some relate to efforts to increase investment income. Others may involve plant improvement activities.

This category of spending has been accelerating in recent years and merits additional examination, which is beyond the scope of this study.

SUMMARY

SUMMARY

In 1990 the Michigan Senate created a Select Committee on Tuition Policy to examine trends in state appropriations for higher education, tuition patterns for resident undergraduates, and revenues and expenditures of Michigan's fifteen state universities during the period of 1977 through 1989.

In the intervening thirteen years since issuance of the Select Committee's report in December, 1990, trends only in their infancy at that time have become fixed and perhaps permanent in the arena of state university education. State support per fiscal year equated student (FYES) has not kept pace with inflation, and thus the burden of a state university education has shifted further to the student and his/her parent or guardian.

Since the issuance of the 1990 report, state universities have increased institutional financial aid to mitigate the tuition increases that have been levied, and to some extent the universities have been successful. The "net price" for an average resident undergraduate was about 14 % less than the "sticker price" commonly identified as resident tuition and fees in FY 2002.

Nonresident students have become a greater component of the enrollment mix at most state universities and especially at the University of Michigan. If those nonresident students remain in Michigan as employees of firms, the state has likely gained from this importation of talent.

The HEIDI data appears to indicate that expenditure restraint has been applied to the instructional and plant operation and maintenance sectors of state university operations. But other noninstructional areas continue to offer opportunities for cost containment.

University student financial aid has increased at all universities, especially for undergraduates at UM and Michigan Tech. It is reasonable to assume that the resources for such aid stemmed, in part, from the extra tuition revenue that nonresident matriculants provided to those two universities.

If revenue and expenditure profiles from the next twenty-five years are to differ from those shown in this report, the legislature will need to devote additional resources to support Michigan higher education. The universities will also need to implement further cost containment in the noninstructional sector of operations. Furthermore, the state and the universities will need to prepare soon for the demographic decline in traditional-age college students which will begin in about 2009. It is unknown if all parties are ready for these challenges.

The author hopes that this report will provide an impetus for discussion of issues concerning Michigan's state universities.

APPENDIX

Black-and-white versions of selected charts for faster printing

Figure MSUREVENUE1:
 Michigan State's growth in total HEPI-adjusted GF revenue per Fiscal Year Equated Student has become more closely linked to tuition revenue as state appropriations per FYES have flattened.

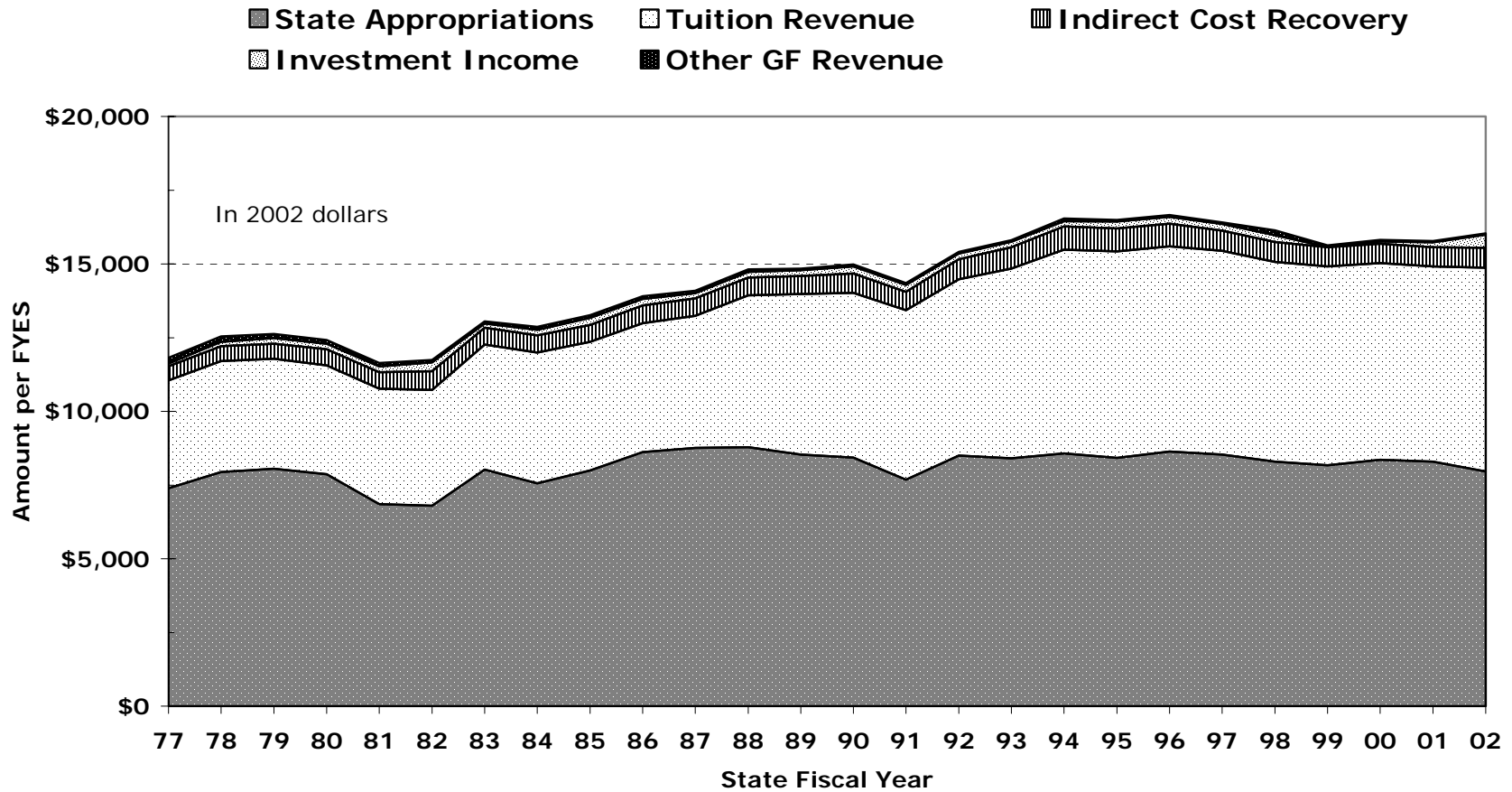


Figure UMREVENUE1:
University of Michigan's increase in HEPI-adjusted GF revenue per Fiscal Year Equated Student has been driven by growth in tuition revenue and indirect cost recovery (from research grants).

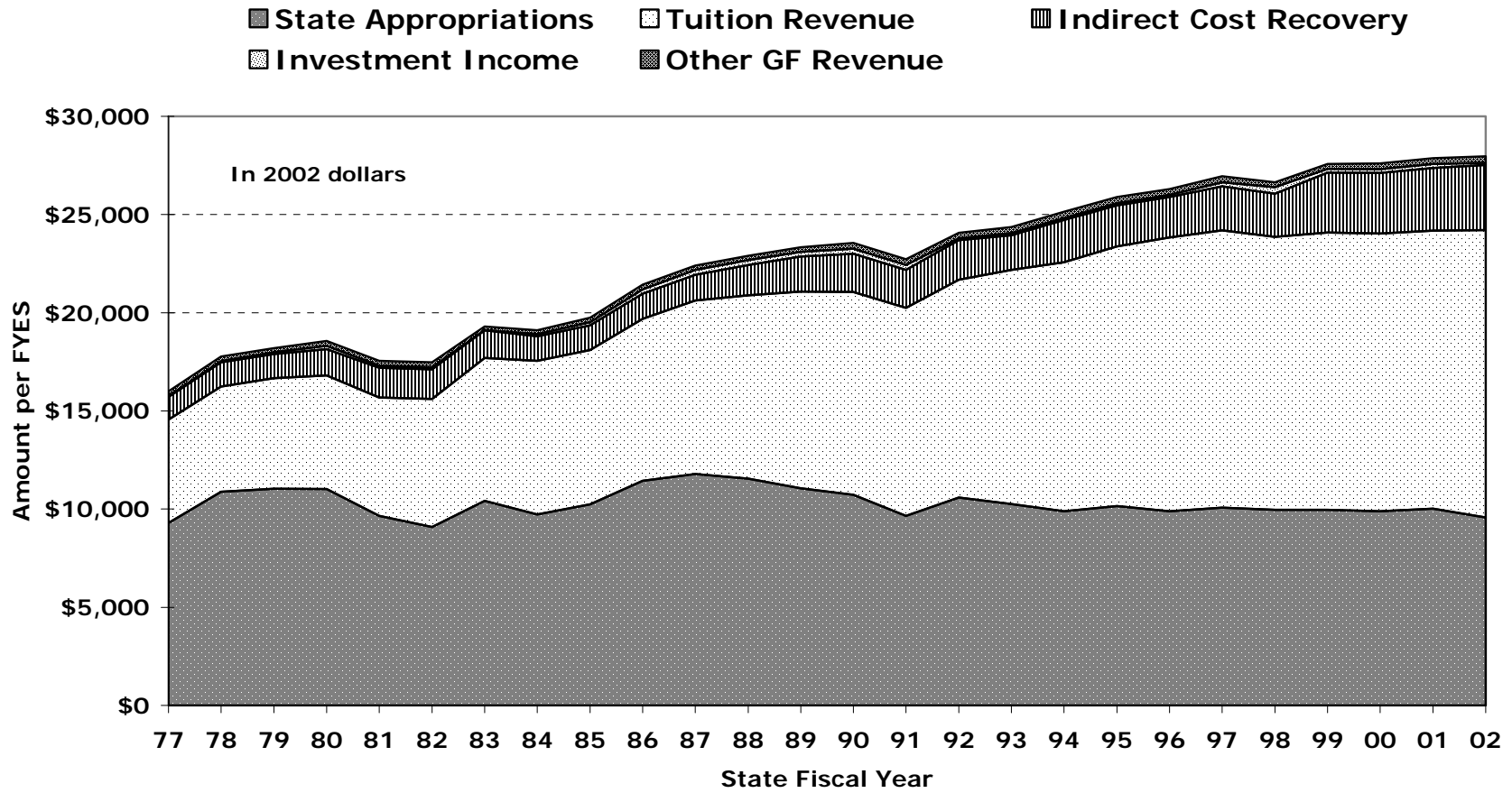


Figure WSUREVENUE1:
Wayne State's increase in HEPI-adjusted GF revenue per Fiscal Year Equated Student has been fueled by tuition revenue growth and more directly by indirect cost recovery (research grant) growth.

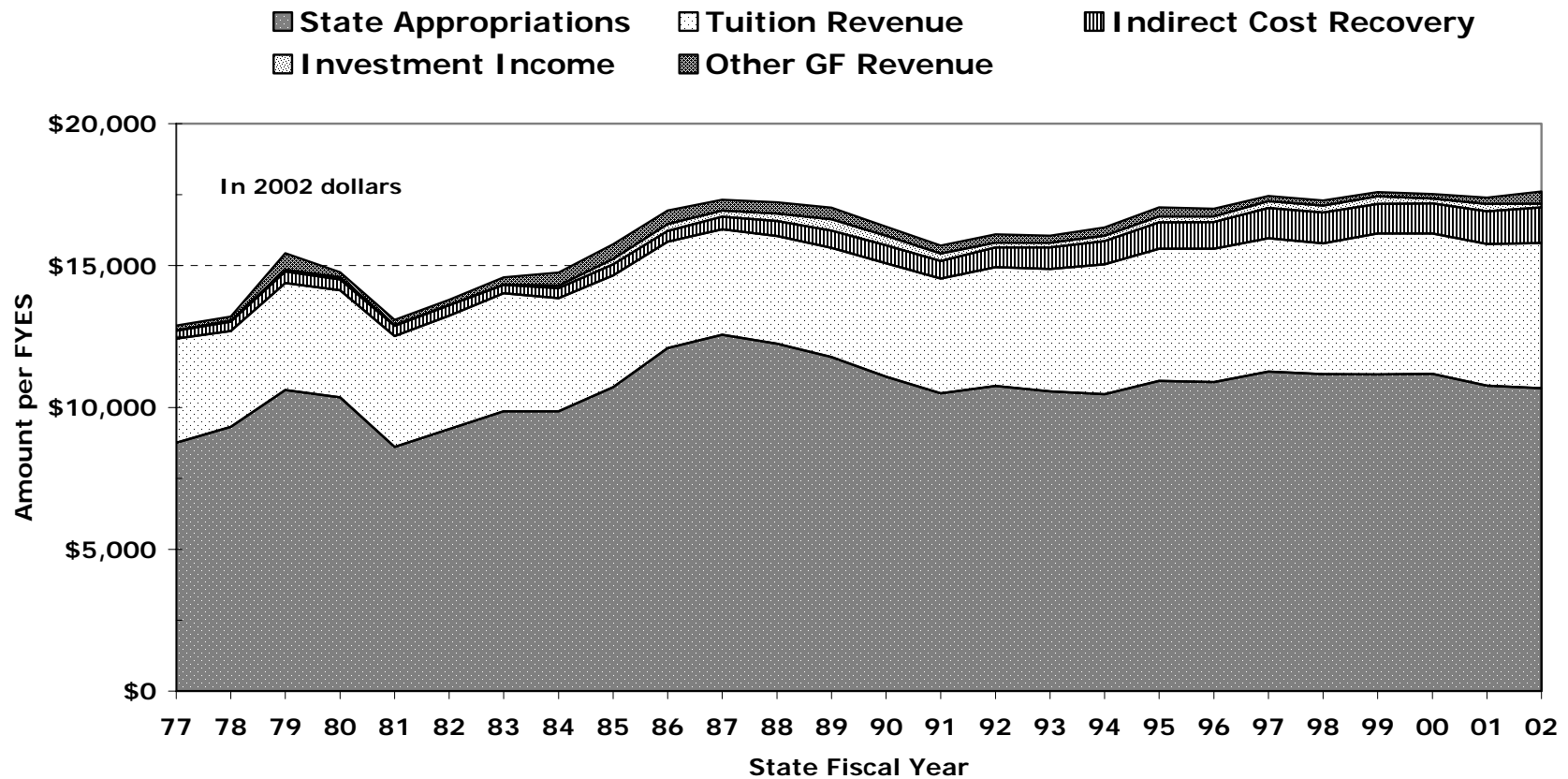


Figure OTHERUREVENUE1:

The increase in HEPI-adjusted GF revenue per Fiscal Year Equated Student for the other twelve universities has been fueled substantially by tuition revenue growth linked to enrollment increases.

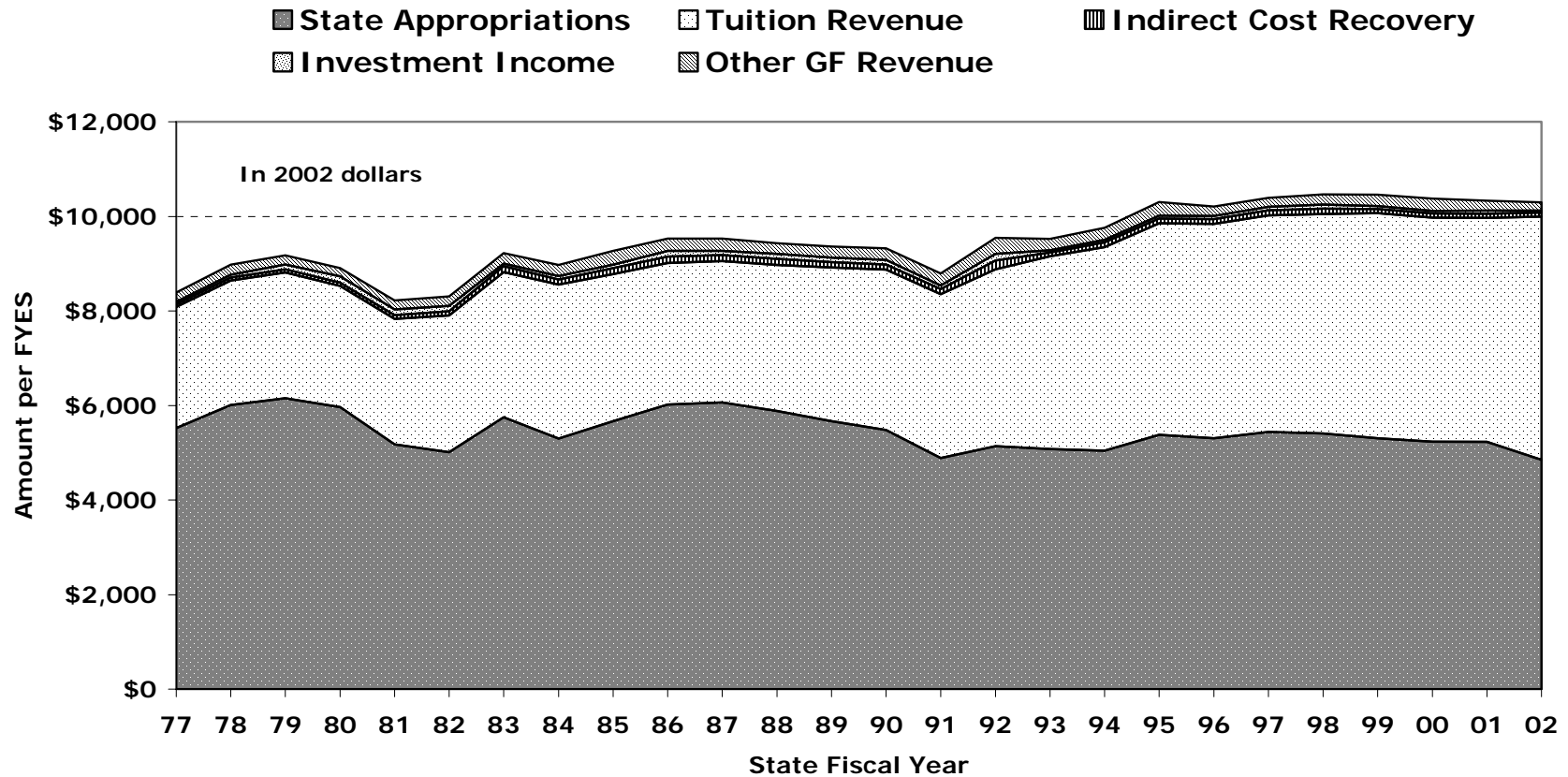


Figure MSUEXPENDS1:
Growth in HEPI-adjusted Expenditures per Fiscal Year Equated Student has occurred mainly in academic support, financial aid, research, and transfers.

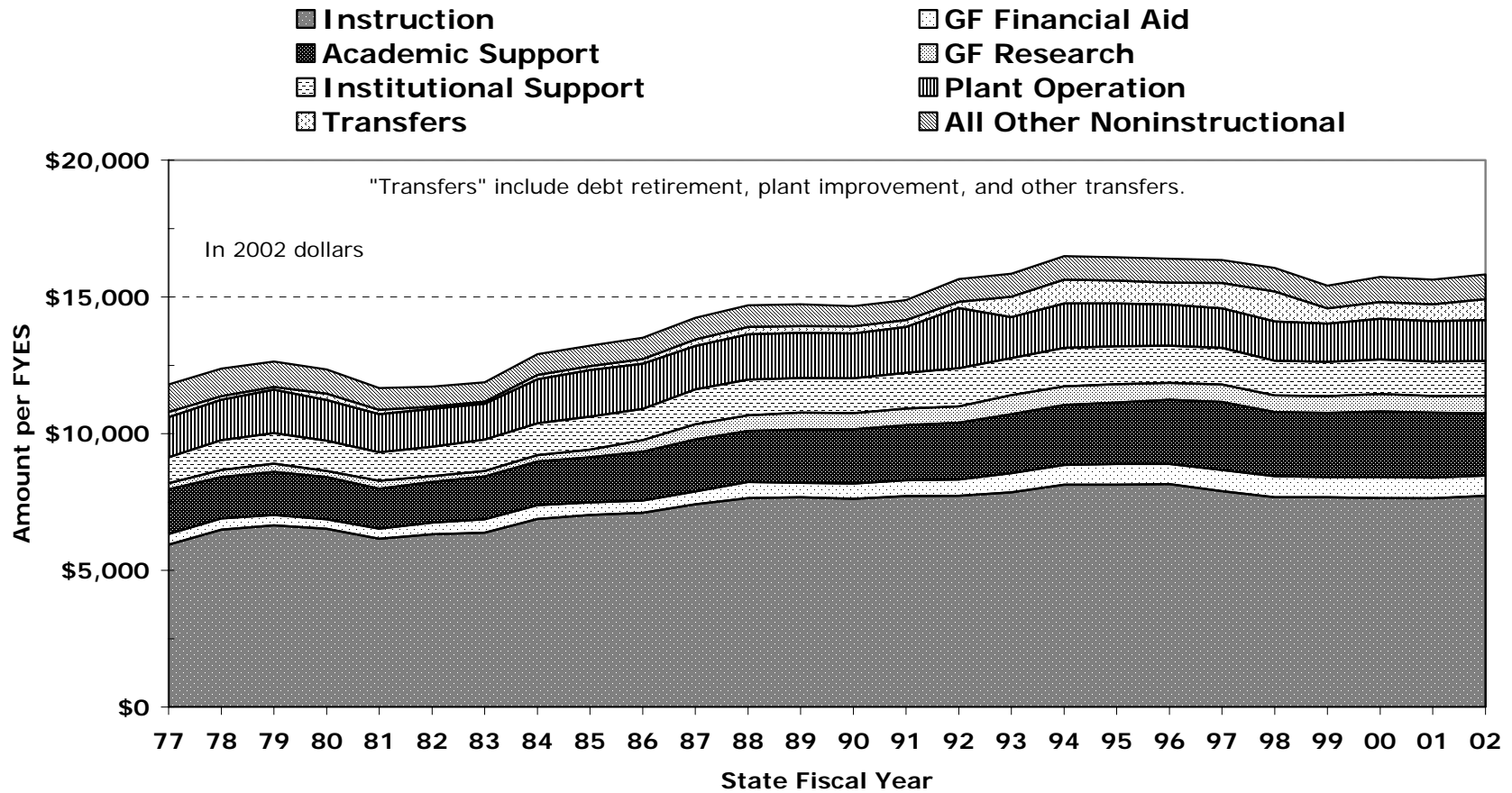


Figure UMEPENDS1:
Growth in HEPI-adjusted Expenditures per Fiscal Year Equated Student has occurred primarily in financial aid, academic support, research, plant operation/maintenance, and transfers.

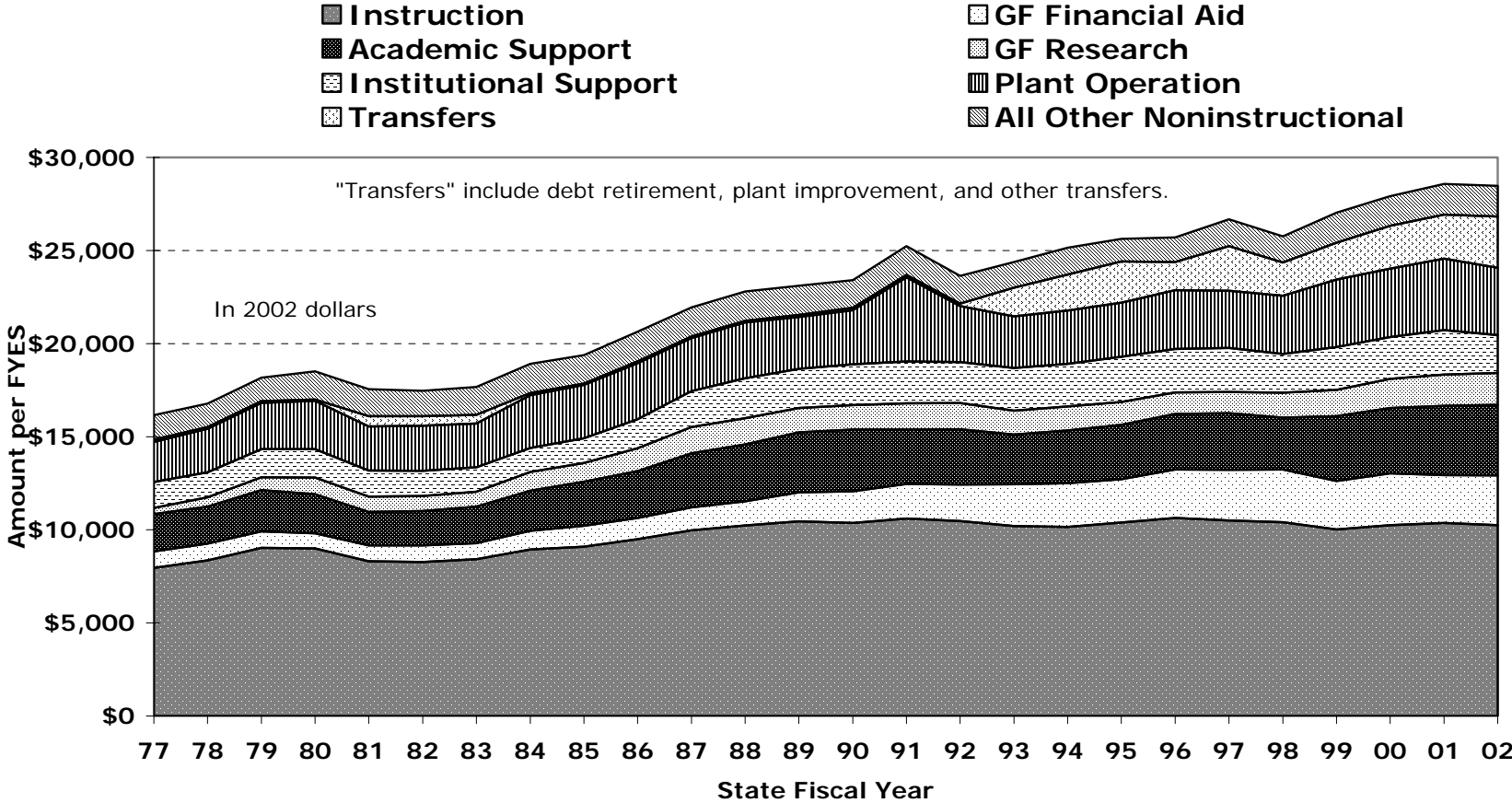


Figure WSUEXPENDS1:
Growth in HEPI-adjusted expenditures per Fiscal Year Equated Student has occurred in research, institutional support, transfers, and other noninstructional areas.

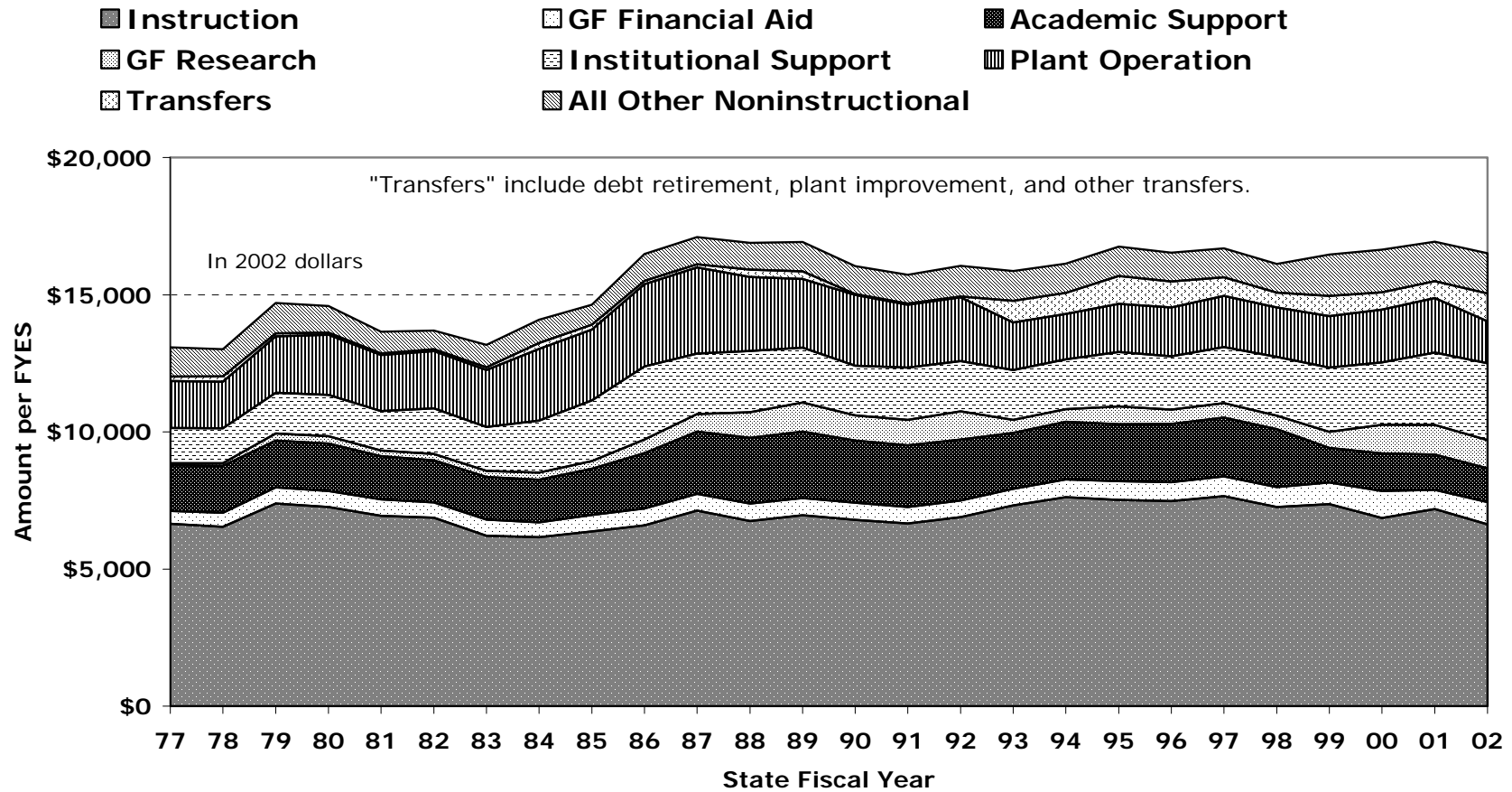
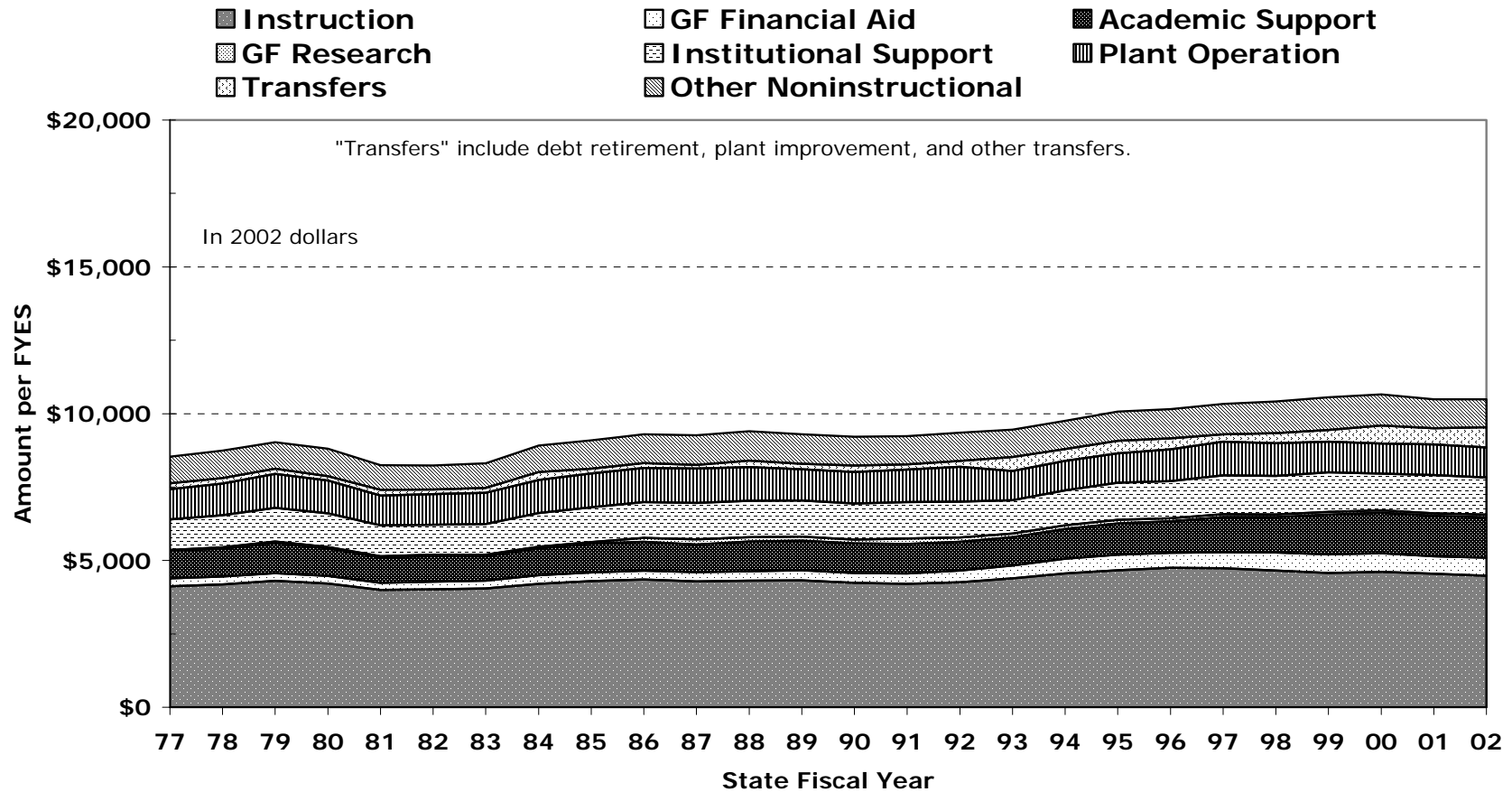


Figure OTHEREXPENDS1:

The state universities that are not the three major research universities have increased their spending on financial aid, academic support, and transfers in this period.



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