

Michigan Higher Education: Facts and Fiction

by Dr. Richard Vedder and Matthew Denhart

Introduction

The state universities in Michigan argue that they have been starved for money and that falling real appropriations from Lansing have jeopardized the quality of higher education. They contend that this has resulted in a loss of competitiveness for Michigan at a time when the state faces economic stagnation caused by globalization's impact on key basic industries. Gov. Jennifer Granholm has echoed this theme, calling for new "investments" in higher education as a way to reverse Michigan's relative economic decline.

This short study makes two key findings. First, by most measures, Michigan public universities were not starving for funds during the period of sharpest appropriations cutbacks in the first half of this decade. Real *revenues* per full-time equivalent student on average rose throughout this period despite real reductions in state appropriations per student. *Expenditure* growth per student was somewhat less, and some schools actually had an inflation-adjusted reduction in per-student spending, while others continued to grow.

Second, there is compelling and strong econometric evidence nationally that state appropriations for higher education do not have positive effects on economic growth as claimed by many university presidents, Gov. Granholm and some key legislators. Indeed, the evidence

points to the opposite conclusion: higher appropriations are associated with lower economic growth.

This suggests that the observed shrinkage in state appropriations over the first half of the decade was actually a positive development: one that dampened, albeit modestly, the real relative economic decline of the state. Moreover, it calls into question a growth strategy based on expansion of higher education. Indeed, other results included in the econometric estimation suggest that a better growth strategy would be to put the entire Michigan state government on a diet in order to finance a reduction in the overall tax burden. While higher education expenditures are not growth-inducing, the evidence shows that tax reductions are.

State University Revenues and Spending: 2000 to 2004

Every state university in the United States that receives some form of federal assistance, either directly or for its students, is required to submit detailed data to the federal government relating to its operations. The data are self-reported by the universities and are incorporated into the Integrated Postsecondary Education Data System by the Department of Education.

The data are not perfect. Included are data on commercial operations such as bookstores and university hospitals. Student data suffer from some deficiencies arising from students admitted outside the traditional fall semester or quarter, student transfers and some other problems. There may be variations in how different schools handle certain expenditure and revenue items in terms of categorizing them in the IPEDS database. While some of these problems are insignificant to our analysis (e.g., some of the data on student attrition), we would be the first to admit the numbers may be imperfect. However, these are the numbers that the universities themselves reported to the federal government.

About the Authors

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The Center for College Affordability & Productivity is a Washington, D.C.-based research institute that investigates "issues of rising costs and stagnant efficiency in higher education."

Table 1 shows revenues received per full-time equivalent student at all 15 Michigan public universities in 2000 and again in 2004. As the universities' lobbyists never tire of reminding legislators and the public, the 2000-2004 period was an era of falling real state university *appropriations* per FTE student. However, several items are noteworthy. With one exception — Ferris State University — *revenues* per FTE were higher in 2004 than in 2000 at every institution. Large revenue increases (more than 20 percent) were recorded by the University of Michigan at Ann Arbor, Michigan State University, Western Michigan University and Central Michigan University. Because the big “winners” were the larger schools, the average increase for all universities likewise exceeded 20 percent.

During the same period, the Consumer Price Index for All Urban Consumers rose slightly less than 10 percent, implying that real revenues per student also rose about 10 percent, or close to 2.5 percent per year. This was at a time when real incomes of Michigan families were showing actual declines.

In short, the evidence suggests that Michigan universities typically did not experience severe austerity during this period when families in the state were often forced to tighten their belts. The flagship Ann Arbor campus of the University of Michigan showed nominal revenue per student rising more than 30 percent from 2000 to 2004, or nearly 20 percent in inflation-adjusted terms. To be sure, the data include research and other grants, hospital revenues and other non-academic funds, but nonetheless the evidence supports the notion that University of Michigan-Ann Arbor was expanding its operations at a rapid rate at a time of genuine economic stress in the state.

Certainly there were some schools that faced some belt-tightening in an inflation-adjusted sense, most notably Wayne State, where in absolute dollars revenues per student were nearly flat; Ferris State, where they actually declined; and Michigan Technological University, where they rose less than the inflation rate, meaning a modest reduction in real revenues per student. But other schools generally had inflation-adjusted increases in spending.

Table 1

Higher Education Revenues:
Michigan, 2000 and 2004 in Current U.S. Dollars

Institution	Revenues per FTE* 2000	Revenues per FTE 2004
University of Michigan-Ann Arbor	\$91,500	\$119,216
Michigan State University	29,767	36,069
Wayne State University	29,669	29,977
Michigan Technological University	26,025	27,354
Lake Superior State University	14,741	20,726
University of Michigan-Dearborn	13,596	20,680
Western Michigan University	15,291	20,027
Ferris State University	18,710	18,256
Northern Michigan University	15,105	17,189
University of Michigan-Flint	13,238	15,383
Eastern Michigan University	13,029	15,093
Central Michigan University	11,813	14,179
Oakland University	12,627	13,884
Grand Valley State University	12,555	13,717
Saginaw Valley State University	10,689	12,786
<i>Michigan Average</i>	<i>\$21,890</i>	<i>\$26,303</i>

Source: U.S. Department of Education, Integrated Postsecondary Education Data System (IPEDS), <http://nces.ed.gov/ipeds/pas> accessed March 2007.

*FTE is shorthand for Full-Time Equivalent.

In addition to revenues, spending per FTE student tended to rise at the 15 institutions (see Table 2), although by a lesser amount on average. That in itself is striking, since it suggests that, on average, the various institutions were accumulating cash surpluses during this period of budget stringency. To be sure, universities run many operations, including hospitals, dining halls, dormitories, athletic programs and the like on a commercial basis, and perhaps the cash accumulations were in these funds. Nonetheless, rising cash balances are inconsistent with cries of poverty and budgetary deprivation.

Table 2 shows that spending exceeded the inflation rate at the U of M — Ann Arbor, Western Michigan and Eastern Michigan, and stayed approximately constant at Michigan State. Spending did fall in inflation adjusted

terms at other institutions, most notably Ferris State. On average, spending per student fell less than 1 percent statewide in an inflation-adjusted sense, and since economists generally believe the Consumer Price Index for All Urban Consumers modestly overstates inflation, it is probably fair to say average real per student expenditures remained constant — neither falling nor rising much during this period. It may be that universities chose to increase their emphasis on research, thereby lowering instructional spending per student; but if so, that is a result of a university decision to reallocate resources, not a paucity of available funds.

Table 2

**Higher Education Spending:
Michigan, 2000 and 2004 in Current U.S Dollars**

Institution	Expenditures per FTE 2000	Expenditures per FTE 2004
University of Michigan-Ann Arbor	\$85,028	\$99,478
Michigan State University	29,222	31,790
Wayne State University	29,599	30,115
Michigan Technological University	25,460	25,771
Western Michigan University	15,534	17,897
Lake Superior State University	15,628	17,118
Ferris State University	18,725	16,891
University of Michigan-Dearborn	13,444	15,872
University of Michigan-Flint	13,423	15,772
Northern Michigan University	15,120	15,100
Eastern Michigan University	13,030	15,065
Central Michigan University	11,911	12,986
Oakland University	12,546	12,663
Grand Valley State University	12,589	12,362
Saginaw Valley State University	10,611	11,596
<i>Michigan Average</i>	<i>\$21,458</i>	<i>\$23,365</i>

Source: U.S. Department of Education, Integrated Postsecondary Education Data System (IPEDS), <http://nces.ed.gov/ipeds/pas> accessed March 2007.

The data raise as many questions as answers. Why did revenues rise faster than spending, and what happened to the difference? Why does, say, Western Michigan University spend 37.8 percent more per student than

Central Michigan University, a school that most people consider similar to Western? Does the added per-student spending at Western lead to better student outcomes, and better jobs?

Are the enormous expenditures at U of M-Ann Arbor justified? Are they out of line with other Big Ten research institutions, such as the University of Illinois, Ohio State University and the University of Wisconsin? If the education at Central Michigan, Oakland University and Grand Valley State University is roughly comparable to Eastern or Western Michigan, why cannot the latter institutions operate on a similar cost basis? Should students attending institutions that are expensive to operate (especially the University of Michigan) pay dramatically more than students attending other institutions, even beyond the current tuition disparities? How does such expensive education comport with a desire to provide access to students of ordinary or limited means?

More generally, given that the state spends more than \$1.7 billion annually on operations at these institutions, is anyone in Michigan analyzing these numbers to find answers to these and similar questions? If not, why not? This is an especially important question to answer when policymakers are being urged to spend even more as a means of generating economic growth.

It should be added that the tables above just scratch the surface of analysis that is possible with the available data. There is some breakdown in the financial information by categories, and there is also other interesting information on staffing levels and, at least inferentially, salaries paid. Some preliminary analysis that we have done using national data would indicate that, over time, the instructional function has been deemphasized at universities, that spending on administration has risen sharply¹ and that tuition fees actually more than cover faculty salaries. All of this cries out for greater analysis in the context of Michigan.

State Appropriations for Higher Education and Economic Growth

For several years the senior author of this study has analyzed the relationship between state government spending in higher education and the rate of economic growth.² Recently, working with colleagues Jonathan Leirer at the Center for College Affordability and Productivity and Tony Caporale at Ohio University, he has greatly expanded his investigation, using ever more elaborate models and econometric techniques. The results, however, remain the same: The statistical correlation between state and local governmental expenditures on higher

education and the rate of economic growth (growth in real income per capita) is typically *negative* — higher spending for universities is associated with lower growth in a state, other things being equal. We certainly reject the hypotheses arising from conventional wisdom, namely that greater university appropriations will likely mean higher state growth rates.

For the interested reader, a sampling of the statistical results can be found in Table 3. We used a data set encompassing observations for all 50 states for each year over the 46 years from 1960 through 2005. Most of the statistical models run have far more than 1,000 observations. We incorporate lags to acknowledge the fact that money spent today may take years to have a pay-off — students for example, take four, five or even six years to get through school. Research monies similarly may have long term pay-offs. We also looked at economic growth over a short time horizon (five years), as well as longer periods (10 or 15 years). We incorporated a large number of non-higher education variables into our model to at least partially control for the considerable non-educational determinants of income growth over time.

The results are intriguing. In general, the model’s explanatory power is greatest for longer time lags. Consequently, we will talk mainly about equation three in the table, which looks at economic growth over a 15-year time horizon and relates it to state appropriations made 15 years previously, to allow generously for the lagged impact of appropriations.

There is much that can be said about the results. Most importantly, however, in all three equations (and dozens of other equations not presented here) we obtain a *negative* relationship between state and local higher education expenditures and economic growth. In two of the equations, the results are statistically significant at the 1 percent level.

Economists cannot say with precision what factors are most important for future economic growth in a state, but with these results in hand we can say this: The hypothesis that higher education spending promotes economic growth is rejected.

Some of the control variables introduced are interesting in their own right. The model shows a very strong negative correlation between the aggregate state and local tax burden and economic growth in a state. Since taxes are something controlled by state policymakers, the model suggests a better growth-enhancing factor than expanding higher education appropriations would be to lower the tax burden.

Also, we included non-higher education spending (K-12) as a variable in the model, and in the statistically most impressive equation three, we obtain a *negative* relationship between spending and growth — even after controlling for the tax burden. All of this suggests that government activities that crowd out private-sector activity (through higher taxes, for example) tend to lower growth, since on average the private sector utilizes resources more efficiently than the public sector.

There is one variable in the model that seems to suggest that universities have a positive growth effect. Economic growth is faster in states where the proportion of the population over the age of 25 possesses college degrees. Doesn’t this favor more state university funding — since more state subsidies will mean lower tuition charges, increasing access to colleges? There are several reasons why this argument is weak.

First, other empirical evidence we have gathered shows that a large majority of new state appropriations go to increase total university expenditures — not to lowering the rate of tuition increases. Second, there is only the very weakest of statistical correlations between state appropriations and the proportion of the population who are college graduates. It is worth remembering in this context that roughly half the students entering four-year degree programs fail to graduate from college within six years. More appropriations may merely lead to small increases in enrollments among marginally qualified students who then fail to graduate.³

Most important, however, is the fact that college almost certainly acts as a “screening device.” The persons who graduate from college derive higher earnings than non-college graduates and are clearly more productive. But is this because of what they learned in college? Or, is it because, on average, college graduates are brighter, more motivated, and more disciplined than non-college graduates? Even if they had not gone on to college, the college graduates would probably have fared far better than the typical non-college worker because of these other attributes.⁴

The results presented here are merely representative of many models estimated. We have used alternative functional forms (ordinary least squares, generalized least squares), different independent (control) variables, different lags, allowed for individual state characteristics (so-called fixed effects models) and other permutations. The preponderance of evidence leads us to reject the hypothesis that university spending tends to increase the rate of economic growth. While the alternative hypothesis — higher university spending lowers growth — seems

likely to be valid, it is not necessary to accept it in order to reject the validity of notions that greater fiscal efforts by the state will enhance growth.

Elsewhere, the senior author has shown that incremental resources of universities have often gone to fund things far removed from the core functions, including bloated administrative bureaucracies, elaborate student services, high salaries and reduced teaching loads for faculty. This is particularly true of the large research universities like the University of Michigan.⁵

Table 3

Modeling the Factors Influencing State Economic Growth

Dependent Variable: 5, 10 and 15 year growth in real per capita state personal income (1975-2005; n=1550, n=1300, n=1050, 50 cross sections)

Independent Variables	Eq. 1	Eq. 2	Eq. 3
	N=5	N=10	N=15
State Age	0.008 (19.59)	0.01 (22.91)	0.01 (20.38)
State Personal Income (T-N)	-0.00003 (-29.94)	-0.00003 (-36.49)	-0.00004 (-47.96)
N-year Average Union Growth	-0.05 (-6.62)	-0.05 (-6.93)	0.02 (2.72)
N-Year Population Growth Rate	0.47 (11.93)	0.40 (14.93)	0.20 (7.72)
N-Year State Tax Burden Growth	-0.09 (-5.88)	-0.07 (-5.27)	-0.15 (-13.94)
Real Per Capita State & Local Appropriations for Higher Education (T-N)	-0.0004 (-11.39)	-0.0001 (-1.94)	-0.0001 (-3.16)
Percentage of 25 + Population with at least a Bachelors (T-N)	0.006 (8.05)	0.006 (6.63)	0.006 (6.86)
Real Per Capita State & Local, Non-Higher Education Expenditures (T-N)	-0.000001 (-0.38)	0.00004 (1.45)	-0.0001 (-3.16)
Adjusted R2	0.57	0.77	0.95

T-statistics are in parentheses. Estimated using Panel Generalized Least Squares with cross section weights and cross section fixed dummies (not presented). Bachelors Degree data simulated using affine approximation for the following years: 1971-1979, 1981-1988, and 1992.

Michigan and Other State-Specific Evidence

Past work by the senior author reinforces these observations about higher education spending and economic growth.⁶ In fiscal year 1980, the proportion of personal income spent by Michigan on higher education was around one-third more than the proportion spent by Illinois and 15 percent more than that spent by Ohio. Over the next two decades, Michigan dramatically increased its already above-average commitment to universities. By 2000, it had the sixth highest proportion in the nation and was spending 2.34 percent of its personal income on state government support for higher education. This was nearly double Illinois' 1.26 percent and well above Ohio's 1.58 percent.

This additional university spending did not pay off in greater economic growth. In 1980, per capita income in Illinois was 5 percent higher than in Michigan. By 2002 the gap had doubled, and Illinois residents enjoyed income that was 10 percent higher on a per capita basis. In fact, of the three states, Michigan had the largest higher education spending commitment but the lowest growth, while Illinois had the smallest spending commitment but the highest growth. Ohio fell in the middle, also growing faster than Michigan, but not as fast as Illinois.

Similar trends appear elsewhere. In 1977, North Dakota spent 2.78 percent of its personal income on higher education, compared to 2.03 percent in South Dakota. North Dakota's spending had risen to 2.88 percent of income by 2000 — the highest in the nation — while the figure in South Dakota fell to 1.56 percent. Nevertheless, over the same period per capita income in lower-spending South Dakota grew substantially faster than its neighbor to the north — nearly 57 percent compared to a little more than 35 percent. More recently, 2006 data collected by the nation's second largest moving company, United Van Lines, shows that North Dakota tied Michigan as having the highest proportion of outbound moves compared to people moving into the state — 66 percent. In contrast, 55.9 percent of South Dakota moves were households coming into the state.⁷ Past data from this source has been found to be highly correlated with U.S. Census data.⁸

Nationwide, from 1980 to 2000, the 10 states with the most rapid economic growth expanded their spending on higher education on average at a modest pace, from 1.31 percent to 1.44 percent of personal income. In the 10 slowest growing states, higher education spending grew rapidly on average, from 1.80 percent to 2.21 percent of personal income.⁹ It is likely that university presidents in those slow growing states were making the same arguments now being heard in Michigan, that increased

appropriations for their institutions are the key to future prosperity.

Conclusions

According to data they report to the federal government, state universities in Michigan have not experienced dramatic financial cutbacks during years of state budget stringency. The reduction in appropriations to those schools in the first half of this decade made sense not only fiscally, but also in broader economic terms, as there is no good evidence that state spending on higher education has positive growth effects.

What our analysis suggests is that the alleged “positive externalities” — or spillover effects of higher education — appear to be overblown, at least regarding economic considerations. Indeed, the opposite appears the case: more university spending might actually lower living standards for all, having negative spillover effects. The benefits of higher education accrue primarily to the users, specifically individual students with in-demand degrees, wherever they choose to make their homes after graduation.

It would be a mistake for Michigan to rely on greater efforts in higher education as a primary means of promoting growth. Empirical evidence suggests that a more promising approach would be to constrain government and universities in their spending growth, using the fruits of higher tax revenues over time to lower the tax burden. With respect to universities, spending constraint could come from reductions in non-instructional staff, increasing the teaching loads of faculty, using buildings year-round, increasing the use of technology to reduce labor costs and through other means.

Footnotes

1 Documented in Michigan by the Michigan House Fiscal Agency in *The Long View: State University Enrollments, Revenues and Expenditures: FY 1977 through FY 2002. A Report to the House Appropriations Subcommittee on Higher Education*, by Dr. Hank Prince: “What may be evident ... 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.’”

2 See Richard Vedder, *Going Broke By Degree: Why College Costs Too Much* (Washington, D.C.: AEI Press, 2004), and also his “Private vs. Social Returns to Higher Education: Some Cross Sectional Evidence,” *Journal of Labor Research* 25 (4), Fall 2004, pp. 677-686.

3 As a spring *Detroit Free Press* poll of 640 students at the University of Michigan, Michigan State and Wayne State University suggest, nothing guarantees that students will remain in Michigan after they graduate: Of those polled, 53 percent said they plan to depart the state when they graduate. Of those who plan to leave, 47 percent cite “go to where good jobs are” as the reason. *Detroit Free Press*, “Most plan to learn, leave: Graduates of big state colleges won’t stick around, poll shows,” by Kristen Jordan Shamus, April 29, 2007.

4 This point has been made by many scholars, perhaps most strongly by Charles Murray, and also by Murray and Richard Herrnstein in their book “The Bell Curve: Intelligence and Class Structure in American Life” (New York: The Free Press, 1994). It should be noted that studies purporting to measure the positive economic impact of state universities generally do not control for this factor, and assume that the extra earnings that college graduates generate compared with their high school-educated counterparts are entirely the result of their university training. This dubious assumption makes for deeply flawed analyses. See Richard Vedder, “Going Broke by Degree,” *Viewpoint on Public Policy* published by the Mackinac Center for Public Policy, Sept. 6, 2004.

5 Vedder, *Going Broke By Degree*, AEI Press.

6 Vedder, *Going Broke By Degree*, AEI Press.

7 Michael D. LaFaive and Michael J. Hicks, *Lights Out?* Mackinac Center for Public Policy, Jan. 8, 2007.

8 *Ibid.*

9 Vedder, *Going Broke By Degree*, AEI Press.

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