

ANALYSIS OF ARIZONA HIGHER EDUCATION FINANCE COMPARED TO NINE COMPARISON STATES.

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Attached are tables generated by the National Center for Higher Education Management Systems (NCHEMS), which compare revenues and expenditures for various sectors of higher education in ten states that the study group selected for comparison: Arizona, California, Colorado, Michigan, Missouri, North Carolina, Pennsylvania, Washington, and Wisconsin.

Revenue Comparisons.

These data reflect distinct differences between the states, their support of various sectors, and particularly unique funding patterns for Arizona in comparison to other states.

In some respects the data confirm trends previously noted in the examination of present and future challenges facing the state. Overall, higher education funding for Arizona ranks relatively low in comparison to the other nine states. Arizona’s aggregate funding per full time student, at \$14,644 in 2002-03, ranked it lowest amongst these states, 17 percent below the mean average total funding per student of the ten states (see table 1).

TABLE 1:

Ten-State Comparison – Public Higher Education					
Revenue – All Sources 2002-03					
	RExt	RInt	BA/MA	Asoc	All
Arizona	22,645	15,494	13,601	8,344	14,644
California	36,367	43,536	12,388	8,222	15,503
Colorado	27,961	13,077	8,144	8,207	15,422
Michigan	33,873	12,999	12,822	11,973	20,002
Minnesota	43,314	-	10,935	10,052	18,152
Missouri	24,930	19,564	11,640	8,799	14,883
North Carolina	38,041	16,566	14,390	9,794	16,858
Pennsylvania	42,819	13,576	12,674	10,498	22,494
Washington	43,008	-	12,653	10,259	19,330
Wisconsin	31,661	-	11,372	15,493	18,641
Average					17,593

KEY: **RExt** – Research Extensive Universities; **RInt** – Research Intensive Universities; **BA/MA** – Baccalaureate and Masters Degree Granting Institutions; **Asoc** – Community Colleges and Technical Institutes

Source: IPEDs Finance and Enrollment Survey generated by NCHEMS for WICHE

This is not because the state itself is stingy in its support; state appropriations at \$6,949/ft student ranked Arizona 6th among the ten states and 5 percent above the mean average (see table 2).

TABLE 2:



	St. & Local	Tuit.
Arizona	6,949	2,869
California	7,816	2,042
Colorado	3,726	4,285
Michigan	6,993	5,432
Minnesota	7,441	4,493
Missouri	6,041	4,151
North Carolina	8,291	2,901
Pennsylvania	5,525	7,805
Washington	5,633	4,058
Wisconsin	7,972	3,422
Average	6,639	4,146

Source: IPEDs Finance and Enrollment Survey generated by NCHEMS for WICHE

Where Arizona loses ground is with respect to tuition revenue, which at \$2,869/ft student, ranked ninth amongst the ten states. Arizona ranked above only California in tuition revenue per student, and California ranks low only because of the exceptionally low tuition in the California Community Colleges. Arizona’s tuition revenue ranked 31 percent below the average for the ten states. Because these data were for 2002-03, they obviously do not include the rather substantial increase in tuition and fees that occurred in 2003-04. Factoring in these comparatively large increases in tuition, however, still leaves the aggregate resources available in Arizona substantially below the average of the nine comparison states.

Yet, these total revenue dollars per student don’t tell the whole story, particularly the story that is driving the redesign of higher education in Arizona, because they confound funding for instruction, research, and other purposes.

The best proxy for understanding what funding is available for instructional purposes is to examine resources only from state appropriations and tuition, because for all practical purposes these are the only two sources of revenue that support instruction in any substantial way. Here is where the Arizona story becomes really interesting, particularly compared to the other nine states.

In comparison with other states, when comparing only appropriations and tuition per FTE student (see table 3):

- Arizona’s research intensive university, NAU, compared reasonable well, with \$11,215 in revenue per student compared to \$11,687 for the average amongst research intensive institutions in the seven states that have comparable institutions.
- Arizona’s Baccalaureate and Masters institutions – ASU East and West – on the other hand, compared exceptionally well with \$12,130 in revenue per student, compared to \$9,446 for the other nine states. These campuses received 28 percent more funding from appropriations and tuition than the average amongst institutions from this sector in all ten states.
- Arizona’s Community Colleges didn’t fare quite as well, with their average funding per student of \$6,694 falling \$932 (12 percent) below the average for the ten states together.
- The real competitive losers in Arizona, however, were the two Research Extensive Universities – the University of Arizona and Arizona State University – which with funding of \$13,333 per student fell \$4,205 below similar institutions in the ten states -- 24 percent below the average.

TABLE 3:

Ten-State Comparison – Public Higher Education				
State and Local Appropriations Plus Tuition 2002-03				
	RExt	RInt	BA/MA	Asoc
Arizona	13,333	11,215	12,130	6,694
California	19,479	16,437	10,068	5,972
Colorado	11,834	8,156	5,443	5,663
Michigan	17,382	10,252	10,196	9,234
Minnesota	23,338	-	8,998	7,936
Missouri	14,448	13,324	9,090	6,087
North Carolina	20,084	12,783	11,133	7,178
Pennsylvania	21,130	9,639	9,921	8,344
Washington	19,977	-	9,302	6,883
Wisconsin	14,355	-	8,180	12,464
Average	17,538	11,687	9,446	7,626

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Source: IPEDs Finance and Enrollment Survey generated by NCHEMS for WICHE

Another way to examine this information is to compare the differences between sectors. Here again, Arizona looks much different than the other states:

- On average, the difference in appropriations and tuition revenue between Research Extensive Universities and Research Intensive Universities in the ten states was \$5,851 (33%). In Arizona that difference was only \$2,118 (16%). As discussed earlier, this was not because NAU was over funded compared to similar institutions in other states, but because UofA and ASU were funded so much more leanly than similar institutions in the other states.
- Similarly, Baccalaureate and Masters Institutions in the ten states received, on average, \$2,241 (19%) less per student than Research Intensive Universities. Not in Arizona, however. In Arizona ASU East & West received \$12,130 per student, 8 percent more than the amount received by Arizona's Research Intensive University – NAU. Arizona was the only state in which Baccalaureate and Masters Institutions received more than the Research Intensive Institution.
- Community Colleges in the ten states received \$1,820 (19%) less than Baccalaureate and Masters Institutions. In Arizona, this difference was much greater -- \$5,436 (45%) less – in part because Arizona provides more funding, on average, for students in Baccalaureate and Masters institutions and in part because the state and localities in Arizona provided less funding, on average, for students in Community Colleges.

Also notable are the extreme variations in support amongst these states. In each sector the range between the state with the lowest level of funding and the state with the highest level of funding ranges by nearly 100 percent or more. Wisconsin Community Colleges and Technical Institutes receive 120 percent more than Colorado's (and 86 percent more than Arizona's). Arizona's Baccalaureate and Masters Institutions receive 123 percent more than Colorado's. California's Research Intensive Universities receive 101 percent more than Colorado's (and 19 percent more than NAU). And, Minnesota's Research Extensive University receives 97 percent more than Colorado's (and 75 percent more than the UofA and ASU). Circumstances could be worse for Arizona institutions; just look at Colorado.

Expenditures.

Expenditures, not surprisingly, generally track revenue comparisons (see table 4).

TABLE 4:

Ten-State Comparison – Public Higher Education

Total Expenditures 2002-03

	RExt	RInt	BA/MA	Asoc	All
Arizona	20,539	13,970	11,356	7,075	12,998
California	37,210	41,958	11,799	7,641	15,146
Colorado	26,742	12,510	7,347	7,879	14,651
Michigan	30,076	12,015	12,099	10,615	17,936
Minnesota	43,232	-	10,137	9,313	17,545
Missouri	21,352	19,187	10,298	7,190	13,257
North Carolina	38,096	17,863	13,260	9,621	16,628
Pennsylvania	37,707	13,320	12,204	9,979	20,422
Washington	37,376	-	12,654	9,589	17,456
Wisconsin	29,469	-	10,540	13,864	17,149
Average	32,179	18,689	11,214	9,577	16,319

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Source: IPEDs Finance and Enrollment Survey generated by NCHES for WICHE

Two points, however, are noteworthy with regard to expenditures.

First, patterns in the share of expenditures spent on instruction related expenses (instruction, academic support, and student support) are almost entirely predictable from revenue patterns (see table 5):

- Arizona’s Research Extensive Universities spent \$5,892 per FTE student (38%) less on instruction than similar institutions in the ten states overall, but this was not because they spent proportionately less on instruction but because they expended so much less in total. Like the other states, these institutions spent about half of their resources on instruction related activities.
- NAU, Arizona’s only Research Extensive University spent \$2,347/fte (22%) less on instruction related activities than similar institutions in the other states. This is somewhat surprising, considering NAU’s revenue stream from tuition and appropriations was roughly comparable to similar institutions elsewhere. A closer perusal of the expenditure data shows this is because similar institutions in some other states, particularly California and Colorado, garner significantly more revenues from grants and private sources to support to their research mission.
- Consistent with the data on revenues, ASU East and West spent 20% more on instructional related activities, both because they received more to spend and because they spent a larger share, on average, on instruction than similar institutions elsewhere.
- Arizona’s Community Colleges spent \$1,556 (25%) less per student on instruction than similar institutions in the ten states overall, but this represented roughly the same proportion (2/3) of all expenditures being spent on instruction.

TABLE 5:

Ten-State Comparison – Public Higher Education Instructional Related Expenditures 2002-03

(includes IPEDs categories for (1) instruction, (2) academic support, and (3) student support)

	RExt	RInt	BA/MA	Asoc	All
Arizona	10,129	8,225	8,734	4,692	7,222
California	19,483	18,192	7,644	4,962	8,717
Colorado	12,699	8,584	5,211	5,273	8,195
Michigan	14,492	7,541	7,699	7,358	9,965
Minnesota	21,111	-	6,955	6,498	10,083
Missouri	10,499	12,524	7,019	4,548	8,128
North Carolina	19,196	9,855	8,018	5,880	9,303
Pennsylvania	21,539	9,084	8,308	6,666	12,446
Washington	17,746	-	7,369	6,239	9,474
Wisconsin	13,257	-	7,763	10,378	10,227
Average	16,021	10,572	7,272	6,248	9,370

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Source: IPEDs Finance and Enrollment Survey generated by NCHES for WICHE

Second, comparing instruction related expenditures with the two revenue sources generally used to fund instruction (tuition and appropriations) provides some interesting contrasts between Arizona and the other nine states.

- With respect to Research Extensive Universities, Arizona's institutions devoted a much smaller share of tuition and appropriations revenue (76%) to instructional activities than did the ten states combined (91%).
- With respect to Research Intensive Institutions, NAU similarly dedicated a much smaller share of tuition and appropriations revenue (73%) to instructional activities than did similar institutions in the ten states overall (90%). This may be because the institution lacked the external research funding to support its research mission.
- Arizona's Baccalaureate and Masters Institutions (ASU East and West) spent 72 percent of their tuition and appropriations revenue on instruction related activities, compared to 77% for similar institutions in the ten states overall. It is somewhat baffling that these institutions, with missions focused on undergraduate instruction, spent such a modest share of tuition and appropriations on instructional activities.
- Community Colleges in Arizona also spent a relatively low share (70%) of tuition and appropriation dollars on instruction, an amount that is substantially below the 82 percent for similar institutions in all ten states combined. Again, one wonders why such a modest share of funds was devoted to instruction for teaching institutions.

These revenue and expenditure data tell two compelling stories for the redesign of Arizona higher education.

First, Arizona's two research extensive universities will not be able to compete in the top tier of research universities in the country without a stronger funding base. Clearly, the change in tuition policy implemented in 2003-2004 will help redress some of the comparative funding differences, but those increases address less than one-quarter of the difference between UofA and ASU and their peers in the other nine states.

Second, Arizona currently has no cost competitive model for delivering baccalaureate education. Arizona institutions that focus on the baccalaureate mission cost more per student than institutions with similar missions in any of the other comparison states. Within this cost structure, it will cost Arizona 28 percent more per student to educate the wave of new students that will be coming in the next few years than it would cost to do so, on average, in the other states. Yet none of these other states face anywhere near the increase in demand that Arizona will face.

If Arizona does not contrive a less costly way of delivering undergraduate education, the state faces three choices:

- generate substantial increases in revenue from the state and/or tuition to fund Arizona's comparatively high cost approach to providing undergraduate education,
- allow access to undergraduate education to erode by simply not expanding capacity enough to incorporate the increased demand resulting from increases in the number of young adults graduating from high school and adults seeking to return to college,
- force the increasing number of students into the current array of institutions and do so within the current cost structure, which will erode quality and require abandoning the State's goal to move its two major research universities forward in their research mission; they simply won't have the resources to compete with their peers.

Stated simply, Arizona must redesign its system by developing a more cost effective approach for delivering undergraduate baccalaureate education – what works today won't work tomorrow; it is simply too inefficient.