

# Chicago Fed Letter

## The state of higher education in the Midwest

by Richard H. Mattoon, senior economist

Home to several excellent universities and colleges, the Midwest has long benefited from the region’s strong higher education system. However, with projected demographic changes and state support declines, institutions of higher learning face significant challenges in the years ahead. These issues will be discussed at an upcoming Chicago Fed conference.

The Midwest economy has long benefited from a concentration of excellent private and public universities and colleges. The five states in the Seventh Federal Reserve District<sup>1</sup> boast 513 universities and colleges in all. In particular, the region is well known as home to many significant private and public research universities, among them Northwestern

University, the University of Chicago, and the University of Michigan–Ann Arbor. The higher education system in the region has been responsible for educating the future work

force, providing research breakthroughs, and increasingly supporting economic development through technology transfer and public–private partnerships.

force, providing research breakthroughs, and increasingly supporting economic development through technology transfer and public–private partnerships. The second issue is financial. State financial support for public higher education is eroding, as state budgets grapple with skyrocketing Medicaid and health care costs as well as commitments to elementary education. In addition, rising tuition costs at both public and private institutions of higher education are raising concerns about reduced student access at a time when success in the labor market increasingly requires some college education.

Taken together, these challenges imply that our colleges and universities must develop new ways to meet the needs of students and the broader community, which is relying on these institutions to provide the skilled workers and leaders of tomorrow. These problems are not unique to the Midwest. The future of higher education is part of a larger discussion on education being held on college campuses and in state capitals nationwide. However, arguably, midwestern states, which bore the brunt of the last recession due to the region’s manufacturing legacy, are facing tighter state budgets and slower state revenue recoveries than other parts of the nation. Therefore, the short-term pressure on public higher education in particular is likely to be more significant here than elsewhere.

### Higher education in the Midwest

Figure 1 shows the enrollment distribution of institutions of higher education among the five states in the Seventh

1. Higher education enrollment, 2004

	Illinois	Indiana	Iowa	Michigan	Wisconsin	U.S.
Public 4-year	146,000	161,000	55,000	214,000	127,000	4,969,519
% of total	23	54	32	43	45	36
Public 2-year	339,000	66,000	69,000	199,000	109,000	5,996,651
% of total	54	22	41	40	39	44
Private 4-year	135,000	62,000	44,000	81,000	44,000	2,428,739
% of total	22	21	26	16	16	18
Private 2-year	6,000	7,000	1,900	1,500	1,000	253,878
% of total	1	2	1	< 1	< 1	2

SOURCE: National Center for Public Policy and Higher Education, 2004, "Measuring up: The national report card on higher education," report, Washington, DC, available at <http://measuringup.highereducation.org>.

force, providing research breakthroughs, and increasingly supporting economic development through technology transfer and public–private partnerships.

Despite this impressive record, higher education in the Midwest region—and indeed the nation—faces some significant challenges in the years ahead. These challenges take two forms. The first major challenge to the existing system of higher education relates to changing demographics among the student population. Specifically, the pool of potential college students will be increasingly older and ethnically diverse. The academic needs of this student population will

## 2. State and local revenue support for higher education, FY2003

	Total state/local (\$000)	Gross tuition revenue and fees (\$000)	Higher education general operations (%) <sup>a</sup>	Public postsecondary research, agricultural extension, and medical schools (%) <sup>a</sup>	State student financial aid (\$000)
Illinois	3,365,203	1,207,296	73.4	14.6	192,926
Indiana	1,326,680	1,172,376	76.8	12.9	71,947
Iowa	812,388	515,986	80.1	13.7	3,483
Michigan	2,594,247	2,138,000	82.8	9.6	99,421
Wisconsin	1,528,958	703,483	89.1	10.4	n.a.
U.S.	67,868,080	33,324,376	78.8	14.2	2,667,844

<sup>a</sup>Percent of total state/local support.

Note: n.a. means not available.

Source: State Higher Education Executive Officers, 2004, "State Higher Education Finance FY2003," report, Boulder, CO, available at [www.sheeo.org/finance/shef.pdf](http://www.sheeo.org/finance/shef.pdf).

## 3. Education funding per full-time equivalent student, FY2003

	Unadjusted	Adjusted for enrollment mix <sup>a</sup>	Adjusted for cost of living	Adjusted for enrollment mix and cost of living
Illinois	\$ 9,135	\$ 9,299	\$ 8,580	\$ 8,734
% of U.S. avg.	105	107	99	100
Indiana	\$ 9,671	\$ 8,802	\$ 9,573	\$ 8,713
% of U.S. avg.	111	101	110	100
Iowa	\$10,303	\$ 9,713	\$10,289	\$ 9,700
% of U.S. avg.	119	112	118	112
Michigan	\$11,919	\$11,281	\$11,467	\$10,854
% of U.S. avg.	137	130	132	125
Wisconsin	\$ 9,850	\$ 9,625	\$ 9,505	\$ 9,288
% of U.S. avg.	113	111	109	107
U.S.	\$ 8,694	\$ 8,694	\$ 8,694	\$ 8,694
High	\$14,180 (CT)	\$14,138 (CT)	\$13,374 (DE)	\$12,185 (CT)
Low	\$ 5,665 (FL)	\$ 5,568 (FL)	\$ 6,062 (FL)	\$ 5,957 (FL)

<sup>a</sup>Enrollment mix refers to the different types of enrollment—community college, undergraduate, and graduate—at institutions of higher education.

Note: CT is Connecticut; DE is Delaware; FL is Florida.

Source: State Higher Education Executive Officers, 2004, "State Higher Education Finance FY2003," report, Boulder, CO, available at [www.sheeo.org/finance/shef.pdf](http://www.sheeo.org/finance/shef.pdf).

District. In 2004, the region accounted for just under 14% of all students enrolled in an institution of higher learning in the U.S. The bulk of the region's enrollment was in public schools (nearly 80%, which was the same as the national average in 2004), and public schools are the focus of the rest of this article. Because tuition rates at public institutions are highly favorable for state residents, these institutions rely heavily on in-state students for their enrollments, suggesting that changing demographic patterns represent a potential challenge. Current projections suggest that the Midwest may fall behind other regions in its share of high school graduates relative to total high school enrollment by 2018. As high school graduates are the primary consumers of higher education, fewer graduates will mean institutions may need to look outside the region or to older adults to fill their seats.

In addition, the demographic makeup of high school graduates is changing. One concern for higher education

providers and policymakers is minority groups that have been less likely, historically, to attend and complete college. For example, the fastest growing population in the U.S. is Hispanic, which according to census figures passed 41 million in 2004 and grew 3.6% from 2003 to 2004.<sup>2</sup> Within two years of graduating from high school, 66% of Hispanics attend college versus 71% of whites. However, by age 26, only 18% of the Hispanic population has a bachelor's degree, compared with 38% of the white population.<sup>3</sup> Raising academic completion rates in the Hispanic community is an example of how institutions of higher education will need to adapt. Also, there has been a long-standing trend of population movements to the South and West, with both of these regions having growth rates far higher than those of the Midwest and Northeast. As a result of these trends, Iowa and Wisconsin are likely to experience a decline in the number of high school graduates of 6.7% and 4.1%, respectively, from 2002–03 to 2017–18.

Although Michigan, Illinois, and Indiana are expecting gains of 6.0%, 8.2%, and 12.6%, respectively, over the same period, their growth rates pale in comparison to those in the South and West. For example, in the same period Texas and Florida are likely to experience growth in high school graduates of nearly 30%; Arizona, 55%; and Nevada, over 100%.<sup>4</sup>

### Financial support

State and local support for higher education remains considerable. Nationwide, nearly \$68 billion went to higher education in FY2003, representing 5.4% of state and local own-source revenues.

This does not include support in the form of special tax treatment for property and investments and separate state financial aid programs. In the Seventh District, \$10.4 billion went to the support of higher education, representing 6.4% of state and local own-source revenues (figure 2 provides a breakdown of Midwest state and local revenue support for higher education by state).<sup>5</sup>

Studies have also demonstrated that the Seventh District states have provided public funding at levels that are either at or above the national average. As figure 3 shows, even when adjusted for the type of enrollment (community college, undergraduate, and graduate) and local cost of living factors, spending per full-time equivalent student (FTE) exceeds the U.S. average in Iowa, Michigan, and Wisconsin and meets the national average in Illinois and Indiana.

However, recently there have been indications that state financial support for higher education is declining. For example, the University of Illinois system saw a reduction in state appropriations of 4.9% from FY2003 to FY2004 and a further reduction of 0.7% in FY2005. The University of Michigan–Ann Arbor saw a cut of 7.1% during the same period and no increase in FY2005. The University of Iowa and the University of Wisconsin system experienced cuts of 2.9% and 8.7%, respectively, from FY2003 to FY2004. Only the Indiana University system saw an increase in state appropriations for FY2004 of 3.2%. Over a ten-year period from FY1995 to FY2005, the percentage change in state higher education appropriations fell below the U.S. average of 47% in four out of the five states in the Seventh District. While Indiana increased state appropriations over this period by 53%, appropriations in Illinois, Michigan,

#### 4. University-reported contribution to state economy

	Estimated multiplier from \$1 of state tax support	State tax revenue generated by university in 1999 (\$ mil.)	University employment—direct/indirect	Spinoff companies/ patents, 1997–2001	Revenue from licensing/ royalties, 1997–2001 (\$ mil.)	Retention of graduates in state, significant period of time (%)
University of Illinois at Urbana-Champaign	11	1,150	29,752/ 84,600	13 companies/ 140 patents	24.2	66
Indiana University	n.a.	15	6,862/ 10,000	32 patents	7.5	50
Purdue University	4	21	15,000/ 7,000	12 companies/ 117 patents	8.0	n.a.
Iowa State University	5	35 <sup>a</sup>	6,202/ 16,500	32 companies/ 227 patents	21.0	n.a.
Michigan State University	n.a.	104 <sup>a</sup>	12,985/ 12,000	24 companies/ 216 patents	89.7	70
University of Wisconsin–Madison	n.a.	n.a.	20,000/ 67,000	108 companies/ 302 patents	67.1	40

<sup>a</sup>FY1999.

NOTE: n.a. means not available.

SOURCE: National Association of State Universities and Land-Grant Colleges, 2001, "Shaping the future: The economic impact of public universities," report, Washington, DC, available at [www.nasulgc.org/publications/EconImpact.pdf](http://www.nasulgc.org/publications/EconImpact.pdf).

Iowa, and Wisconsin grew by 39.6%, 23%, 15.6%, and 12.7%, respectively.<sup>6</sup>

Universities have responded to declining public support by relying more heavily on own-source revenues. Hikes in tuition and an increased reliance on endowment funds have been prominent. Not surprisingly, tuition rates have been increasing sharply in recent years. In 2004, the College Board reported that tuition at four-year public universities had increased on average by 10.5% from the previous year. In terms of endowment resources, major institutions have a wide range of relative wealth. The University of Michigan–Ann Arbor is the only major public university in the region to rank in the top 15 in terms of total endowment, ranking number 11 in 2004, with \$4.1 billion in assets. Other major public universities in the Seventh District range from Purdue University at number 38, with an endowment of \$1.2 billion, to the University of Iowa at number 70, with a relatively small endowment of \$737 million. On a relative basis, the endowments of most of the major public universities in the Seventh District are significantly smaller than that of the University of Texas system, which ranks third in the nation with its \$10.3 billion endowment.<sup>7</sup>

Advocates of continuing a high level of funding for higher education argue that the benefits from education accrue to more than the individual. They contend that the benefits to society include an educated and more involved citizenry,

higher tax revenues through the higher lifetime earnings of college graduates, and new businesses and products that develop from university programs, including research and commercial development. There are also the less tangible benefits to the community provided by college sports and arts programs. However, others take the view that higher education should be seen primarily as an individual investment in human capital. Over the course of their lives, college graduates are compensated for the costs of their degrees through higher wages, estimated at nearly \$1 million more than those of individuals with only high school degrees. Advocates in this camp suggest that public support should be minimal—limited to offering loans to potential students to help them overcome the immediate financial cost of entering school.

Concerns about declining public funds for higher education have prompted many universities to estimate the direct economic benefits they provide to their respective states in order to garner support among policymakers and taxpayers. Figure 4 provides university-reported data on contributions to the state economy of selected universities in the region.

#### Potential solutions

Most observers agree that higher education is facing significant challenges, both demographic and financial. The most immediately pressing issue is developing a

financing structure that will be predictable and allow universities to meet the needs of their stakeholders. In addition to solving the financial puzzle, institutions need to take the demographic trends cited earlier into account in designing and marketing their programs, in order to enhance the benefits of a university education for workers and the economy. A partial list of options includes:

- Pricing tuition closer to real resource cost and using additional financial aid to provide lower-income students with access to higher education. Particularly at public institutions, tuition and fees do not reflect the actual cost of attending the school. Upper-income students receive implicit subsidies even if they are paying full tuition. Aside from equity, some would argue that price rations the limited supply of spots to those who would value the education the most. The idea would be to raise tuition closer to the actual cost for those who can afford to pay and provide need-based subsidies for those who cannot.
- Reducing the scope of services offered by colleges and universities. Institutions could focus on core competencies in which they have a comparative advantage. They could then partner with other providers, public or private, to offer services and functions ranging from dormitories and food

Michael H. Moskow, *President*; Charles L. Evans, *Senior Vice President and Director of Research*; Douglas Evanoff, *Vice President, financial studies*; David Marshall, *Vice President, macroeconomic policy research*; Richard Porter, *Vice President, payment studies*; Daniel Sullivan, *Vice President, microeconomic policy research*; William Testa, *Vice President, regional programs and Economics Editor*; Helen O'D. Koshy, Kathryn Moran, and Han Y. Choi, *Editors*; Rita Molloy and Julia Baker, *Production Editors*.

*Chicago Fed Letter* is published monthly by the Research Department of the Federal Reserve Bank of Chicago. The views expressed are the authors' and are not necessarily those of the Federal Reserve Bank of Chicago or the Federal Reserve System.

© 2005 Federal Reserve Bank of Chicago  
*Chicago Fed Letter* articles may be reproduced in whole or in part, provided the articles are not reproduced or distributed for commercial gain and provided the source is appropriately credited. Prior written permission must be obtained for any other reproduction, distribution, republication, or creation of derivative works of *Chicago Fed Letter* articles. To request permission, please contact Helen Koshy, senior editor, at 312-322-5830 or email [Helen.Koshy@chi.frb.org](mailto:Helen.Koshy@chi.frb.org). *Chicago Fed Letter* and other Bank publications are available on the Bank's website at [www.chicagofed.org](http://www.chicagofed.org).

ISSN 0895-0164

service to back-office operations. This could even include offering course-work at other institutions.

- Funding students, not institutions. This might take the form of higher education vouchers that would force institutions to compete for students. This would provide schools with a real incentive to focus on putting their students' needs above those of their faculties. This could bring about better service and greater cost efficiency.
- Linking funding more closely to performance. Graduation rates from U.S. colleges currently hover at around 50%. Funding formulas could be developed to provide greater funding to schools meeting certain performance standards, such as high graduation rates or the ability to limit tuition increases. This would redistribute resources from poor- to high-performing universities and colleges. Many states have already created performance benchmarks for state

universities, although most have been reluctant to tie a significant portion of state appropriations directly to performance on the benchmarks.

- Limiting subsidies provided to the wealthiest institutions of higher education. Tax breaks and public financial aid could be capped for wealthy universities. For example, institutions that can afford to provide student aid out of their own resources could become ineligible for funding from federal programs, such as Pell grants. The money saved could be provided to students attending other less well-off schools. A more radical approach would tax institutions with large

#### CHICAGO FED CONFERENCE

On November 2, 2005, the Chicago Fed will host a conference looking at the future of higher education. This event will be co-sponsored by the Chicago Fed, the Committee on Institutional Cooperation of the Big Ten, and the Midwestern Higher Education Compact. Speakers will include James Duderstadt, president emeritus, University of Michigan–Ann Arbor; Michael McPherson, president of the Spencer Foundation; and provosts from the Big Ten universities. For information and registration, please go to: [www.chicagofed.org/news\\_and\\_conferences/conferences\\_and\\_events/2005\\_future\\_of\\_higher\\_education.cfm](http://www.chicagofed.org/news_and_conferences/conferences_and_events/2005_future_of_higher_education.cfm).

endowments and use the money raised to provide financial aid. A downside of this type of approach is that it might dampen the flow of private funding.

In light of the demands that health care, elementary education, and corrections are making on state budgets, it seems unlikely that states will revert to their historical levels of support for public higher education, even in the presence of stronger economic growth and healthier state revenues. A new model for financing higher education, therefore, will likely be needed.

<sup>1</sup> The Seventh Federal Reserve District includes all of Iowa and most of Illinois, Indiana, Michigan, and Wisconsin.

<sup>2</sup> U.S. Census Bureau, 2005, "Hispanic population passes 40 million, Census Bureau reports," press release, Washington, DC, June 9, available at [www.census.gov/Press-Release/www/releases/archives/population/005164.html](http://www.census.gov/Press-Release/www/releases/archives/population/005164.html).

<sup>3</sup> Pew Hispanic Center, 2004, "Hispanic college enrollment: Less intensive and less heavily subsidized," *Pew Hispanic Center Fact Sheet*, Washington, DC, January, available at <http://pewhispanic.org/files/factsheets/7.1.pdf>.

<sup>4</sup> Western Interstate Commission for Higher Education, 2003, "Knocking at the college door: Projections of high school graduates by state, income, and race/ethnicity," report, Boulder, CO, December, available at [www.wiche.edu/policy/knocking/1988-2018/profiles/pa.pdf](http://www.wiche.edu/policy/knocking/1988-2018/profiles/pa.pdf).

<sup>5</sup> State Higher Education Executive Officers, 2004, "State Higher Education Finance FY2003," report, Boulder, CO, available at [www.sheeo.org/finance/shef.pdf](http://www.sheeo.org/finance/shef.pdf).

<sup>6</sup> Illinois State University, Center for the Study of Education Policy, 2005, "Grapevine," report, Normal, IL, available at

[www.coe.ilstu.edu/grapevine](http://www.coe.ilstu.edu/grapevine). Information for FY2005 was not available for all institutions.

<sup>7</sup> The rank and assets of other universities in the Seventh District are: University of Illinois at Urbana-Champaign (44), \$1 billion; Indiana University (46), \$1 billion; University of Wisconsin–Madison (49), \$944 million; and Michigan State University (68), \$749 million. National Association of College and University Business Officers, 2005, "2004 NACUBO endowment study," Washington, DC, January 24, available at [www.nacubo.org/x4928.xml](http://www.nacubo.org/x4928.xml).