Advancing Postsecondary Opportunity, Completion, and Productivity

Essential Performance Indicators for

Indiana

and Selected Peer States

2012-2013

Midwestern Higher Education Compact

MHEC
Advancing Education Through Cooperation

Table of Contents

Increasing Educational Attainment in Indiana: An Imperative for Future Prosperity

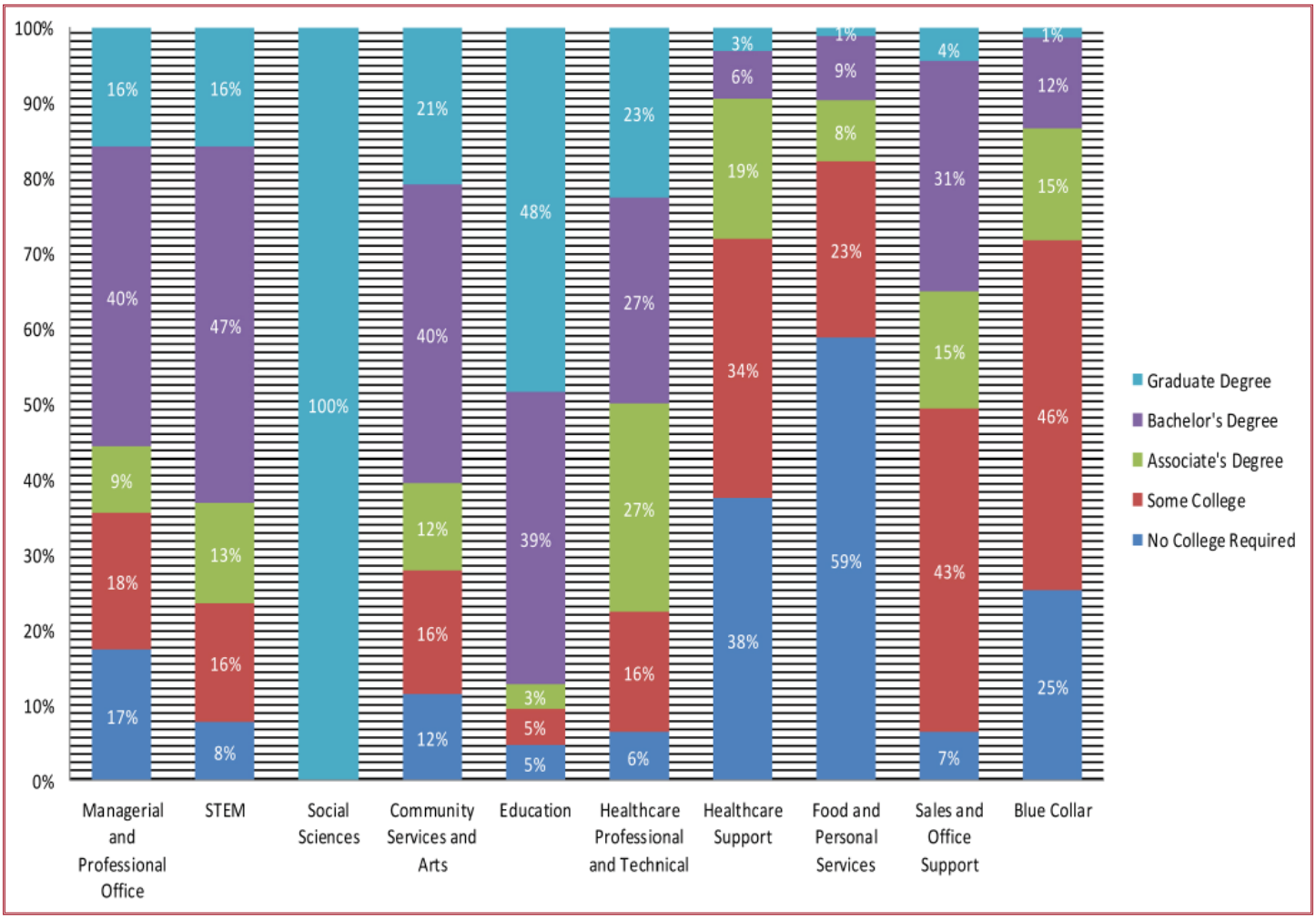
Technological advancement, global competition, and the emerging knowledge-innovation economy are driving an increasing demand for postsecondary education and training. In the United States, approximately 65 percent of all jobs in 2020 will require some level of postsecondary education, and the demand will reach 62 percent in Indiana.[1] The demand for postsecondary education in Indiana will be heavily concentrated in managerial, STEM, social sciences, community service, education, and healthcare industries (see Figure 1).[2] Demand will be lowest in "blue collar" industries, including farming, fishing, forestry, construction and extraction, installation, maintenance, production, and transportation.

These same projections for 2020 suggest that the demand for adults who possess an associate's degree or higher could reach 60 percent by 2025. This scenario has helped to guide Lumina Foundation's state-by-state assessment of degree production trends.[3] If the historical rate of educational attainment in Indiana were to remain constant through 2025, approximately 41 percent of adults would possess an associate's degree or higher. *Accordingly, a degree gap of 19 percentage points is projected in Indiana by 2025 if current trends continue.*

As indicated in Figures 2a-b, the ability of policymakers to close the degree gap carries significant implications for state revenue. If the current rate of degree production remains constant, state revenue in 2025 will be $10 million more than it is today. Conversely, if the degree gap is closed, over $1 billion in additional revenue will be generated through income tax, sales tax, property tax, Medicaid savings, and corrections savings. Moreover, policies that effectively raise levels of educational attainment will yield important civic and health benefits.[4] Indeed, Table 1 indicates that rates of voting, volunteerism, and healthful prenatal care are higher among individuals with at least a bachelor's degree than those with only a high school diploma or GED.[5] Health risk factors such as smoking are less prevalent among individuals who have a bachelor's degree or higher. Residents of Indiana also benefit from higher education in terms of higher earnings and lower unemployment.

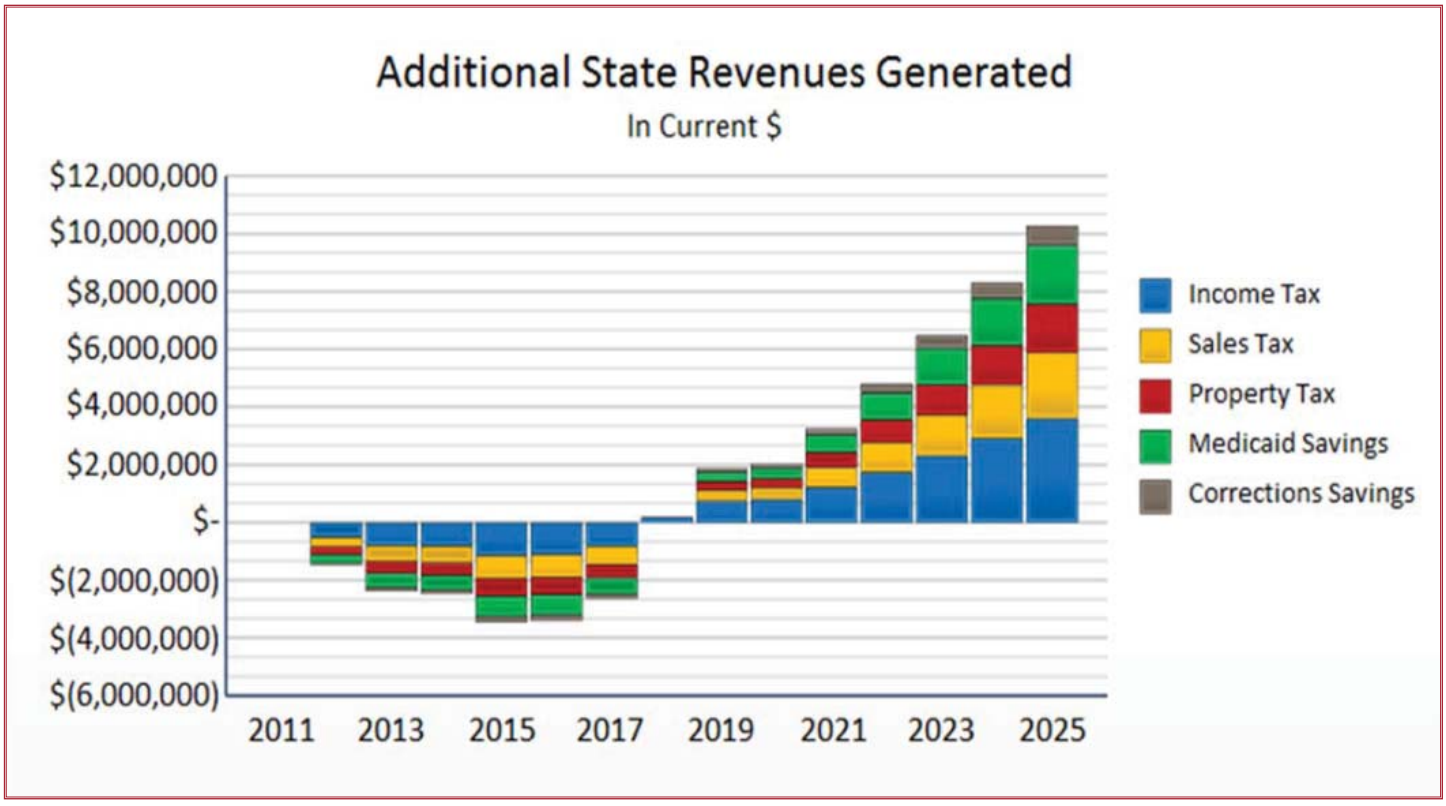
This report portrays various performance indicators that are intended to facilitate an assessment of the postsecondary education system in your state. Descriptive statistics are presented for your state and five other comparison states as well as the nation. Comparison states were selected according to the degree of similarity of population characteristics, capital advantages, and market conditions.[6] Indicators in the first section, *Target Outcomes*, assess progress towards the key goal of increasing the number of people who enroll in college and complete a high-quality degree as efficiently as possible. The second section, *Leverage Points*, provides indicators relevant to intermediate outcomes associated with postsecondary degree production, including academic preparation, affordability, and institutional effectiveness. The final section, *Policy Instruments*, focuses on some of the system resources and policies needed to influence leverage points and target outcomes.

Figure 1. Educational Requirements for All Job Openings by 2020



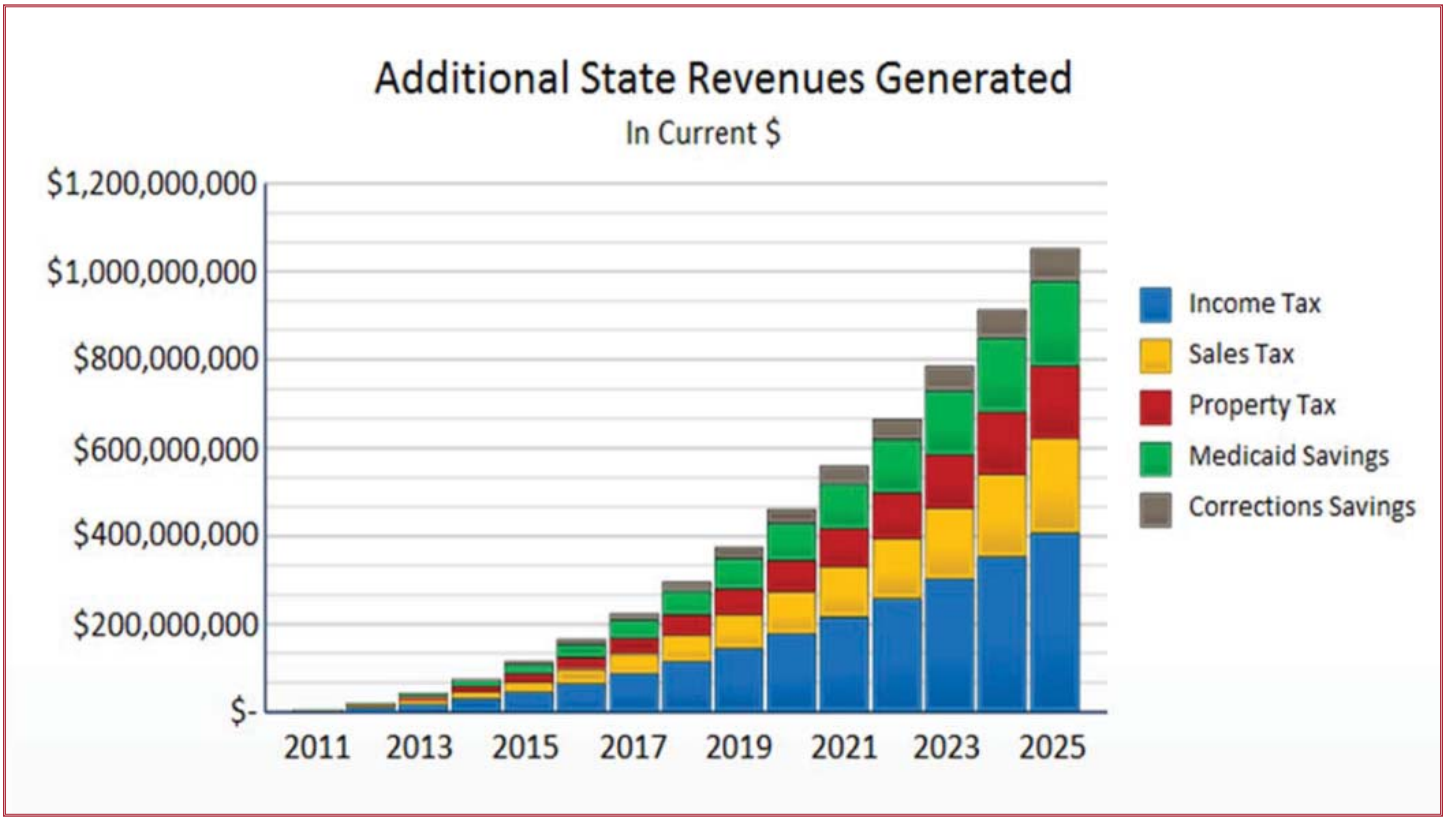
Source: The Georgetown University Center on Education and the Workforce. (2013). *Recovery: Job growth and education requirements through 2020.*

Figure 2a. State Revenues Generated from the Current Rate of Degree Production



Source: National Center for Higher Education Management Systems and CLASP. (2012). *Calculating the economic value of increasing college credentials by 2025.*

Figure 2b. State Revenues Generated from Closing the Degree Gap



Source: National Center for Higher Education Management Systems and CLASP. (2012). *Calculating the economic value of increasing college credentials by 2025.*

Table 1. Civic, Health, and Economic Benefits of Higher Education

Benefit Type	Indiana	Top Comparison State	National Average
Civic			
Voting rate in the 2008 presidential election among individuals with a high school diploma vs. bachelor's degree[7]	–	–	55%/77%
Volunteerism rate among individuals with a high school diploma vs. bachelor's degree or higher[8]	–	–	17.9%/42.3%
Health			
Percentage of mothers 20 years of age and older with low birth-weight live births (less than 5.5 pounds): High school diploma vs. bachelor's degree or higher[9]	–	–	8.3%/6.8%
Breastfeeding among mothers 15-44 years of age: High school diploma vs. bachelor's degree[10]	–	–	43.2%/74.6%
Age-adjusted prevalence of smoking among persons 25 years of age and older: High school diploma vs. bachelor's degree[11]	–	–	28.7%/9.0%
Economic			
Average difference in earnings between associate's degree/ some college and high school diploma in 2010 (25 years and older)[12]	$4,642	$6,074 (Michigan)	$5,579
Average difference in earnings between bachelor's degree and high school diploma in 2010 (25 years and older)[13]	$16,584	$22,618 (Illinois)	$21,073
Average unemployment rate in 2010: High school diploma vs. bachelor's degree[14]	11.7%/4.3%	11.2%/3.8% (Kentucky)	10.3%/5.4%
Difference in median state income tax revenue: High school diploma vs. bachelor's degree[15]	$564	$1,117 (Wisconsin)	–

Summary of State Performance Indicators

A common limitation of presenting a large compendium of indicators is the difficulty of distilling a few reasonable judgments about system performance. This report provides one method of summarizing state performance indicators associated with target outcomes, leverage points, and policy instruments. As indicated in Tables 2-4, over 35 performance indicators used in this report are enumerated within 14 categories. The state's performance score for each indicator is evaluated in relation to an aspirational score, such as the average of the top 10 states, and then assigned a weight that reflects the priority of improvement relative to the aims of effectiveness and efficiency (see Appendix B). Category scores are computed as the sum of weighted indicator scores. One of three colors - red, yellow, or green - is then used to reflect the proximity of the state's actual performance score to the aspirational score. In most cases, the thresholds were set accordingly: red (the weighted score is less than 70 percent of the aspirational score); yellow (the weighted score is 70 to 89 percent of the aspirational score); and green (the weighted score is 90 to 100 percent of the aspirational score). Each color thus represents the overall performance and need for improvement: red (high need for improvement), yellow (moderate need for improvement), and green (state approximates or exceeds aspirational score). However, state performance was not rated in three categories – Degree Quality, Efficiency of Postsecondary Institutions, and Investments – due to the current lack of indicators or difficulty in establishing appropriate benchmarks. Finally, the recent trend in state performance is described as decreasing, stable, or increasing. Trends are defined from multi-year indicators by comparing performance from the present year and the most recent year depicted in the corresponding figure (e.g., 2013 compared to 2006). Trends for indicators that only portray present performance are either omitted or estimated in relation to performance levels documented in a previous year's state report.

Table 2. Performance Summaries for Target Outcomes

Indicator Category	Current Score	Trend	Aspirational Score
● **Postsecondary Enrollment: General**			
Rate of college enrollment directly after high school	66%	Increasing	72%
Rate of postsecondary enrollment among older adults	7%	Increasing	8%
● **Postsecondary Enrollment: Achievement Gap**			
Undergraduate enrollment rate of disadvantaged minority students at public four-year institutions	14%	Stable	18%
Postsecondary enrollment rate among low-income students	36%	Increasing	49%
● **Degree Completion: General**			
Graduation rate at public two-year colleges	9%	Increasing	32%
Graduation rate at public four-year colleges	53%	Decreasing	67%
● **Degree Completion: Achievement Gap**			
Graduation rate by ethnicity at public four-year institutions: average gap between disadvantaged minority students and White students	16 percentage points	Increasing (gap)	0.5
● **System Efficiency**			
Credentials awarded per expenditure: Public two-year colleges	2.7	—	4.2
Credentials awarded per expenditure: Public master's universities	2.3	—	2.6
Credentials awarded per expenditure: Public research universities	1.5	—	1.9
○ **Degree Quality**			

● Approximates or exceeds aspirational score ● Moderate need for improvement ● High need for improvement ○ Performance not rated

Table 3. Performance Summaries for Leverage Points

Indicator Category	Current Score	Trend	Aspirational Score
● Academic Preparation: General			
Percentage of children ages 3 to 4 enrolled in preschool	40%	Increasing	93%
Percentage of 8th grade students scoring at or above proficiency in math	38%	Increasing	55%
Percentage of 8th grade students scoring at or above proficiency in reading	35%	Increasing	47%
Percentage of 8th grade students scoring at or above proficiency in science	33%	—	48%
Rate of high school graduation	77%	Increasing	91%
Percentage of college-bound students who demonstrate college-ready academic achievement: English	70%	—	78%
Percentage of college-bound students who demonstrate college-ready academic achievement: Reading	51%	—	57%
Percentage of college-bound students who demonstrate college-ready academic achievement: Math	53%	—	62%
Percentage of college-bound students who demonstrate college-ready academic achievement: Science	41%	—	52%
● Academic Preparation: Achievement Gap			
Percentage of 8th grade students scoring at or above proficiency in math: Lower vs. Higher income students	27 percentage points	Increasing (gap)	0
Percentage of 8th grade students scoring at or above proficiency in reading: Lower vs. Higher income students	23 percentage points	Increasing (gap)	0
Percentage of 8th grade students scoring at or above proficiency in science: Lower vs. Higher income students	24 percentage points	—	0
● Affordability: Middle Class			
Percentage of family income needed to pay for college	26%	Increasing	19%
Monthly savings over 18 years needed to pay for four year of college	$356	Increasing	$195
Average student loan debt	$26,488	—	$19,982
● Affordability Gap			
Percentage of family income needed to pay for college: Lower vs. Median income families, two-year colleges	25 percentage points	Increasing (gap)	0
Percentage of family income needed to pay for college: Lower vs. Median income families, four-year colleges	20 percentage points	Increasing (gap)	0
● Effectiveness of Postsecondary Institutions: Four-Year Colleges			
Public four-year effectiveness in promoting degree completion	-2.03	—	1.00
○ Efficiency of Postsecondary Institutions: Four-Year Colleges			
Educational expenditures index	0.64 (expenditures are higher than expected)	—	—

● Approximates or exceeds aspirational score ● Moderate need for improvement ● High need for improvement ○ Performance not rated

Table 4. Performance Summaries for Policy Instrument Indicators

Indicator Category	Current Score	Trend	Aspirational Score
○ Investments (prior to FY 2013)[16]			
Pre-K Expenditures per Student: Percentage actual of ideal	0%	Stable	100%
K-12 Expenditures per Student	$12,845	Decreasing	—
State fiscal support for higher education per $1,000 of personal income	$6.73	Decreasing	—
State fiscal support for higher education as a percentage of total state revenue	6.8%	Decreasing	—
State appropriations for postsecondary institutions as a proportion of average education and related expenditures	41-54%	—	—
Average award of State Need-based Grant Aid	$2,622	Decreasing	—
State Need-Based Grant Aid: Total State Aid as a percentage of Federal Pell Grant Aid	34%	Stable	—
● Policies for Improving Educational Quality: PK-12			
Pre-K policy rating: Percent of standards met	0%	Stable	100%
K-12 policy rating: Percent of standards met	36%	—	100%
● Policies for Improving Educational Quality: Postsecondary			
Postsecondary policy: Student learning outcomes state reporting	0%	Stable	100%

● Approximates or exceeds aspirational score ● Moderate need for improvement ● High need for improvement ○ Performance not rated

TARGET OUTCOMES

Postsecondary Enrollment

Postsecondary enrollment has steadily grown over the past few decades as the perceived value of postsecondary credentials has risen. Total undergraduate enrollment in the nation's degree-granting institutions increased by 34 percent between 2000 and 2009, from 13.2 million to 17.6 million.[17] Nonetheless, enrollment gaps remain among some demographic segments, such as those defined by race/ethnicity, socioeconomic status, and age. The identification of these gaps can inform strategies for reducing access barriers and expanding postsecondary enrollment and educational opportunity.

Indicators in this section include:

» College Enrollment Directly after High School
» Postsecondary Enrollment among Older Adults
» Undergraduate Enrollment by Race/Ethnicity
» Postsecondary Enrollment among Low-Income Students

College Enrollment Directly after High School

High school seniors bound for college make a crucial decision of whether to enroll in college immediately after graduating from high school or to delay enrollment for a semester or longer. The decision is consequential since postponed enrollment is associated with future obstacles to degree completion, such as the decay of academic skills and knowledge, the loss of relevant social capital (e.g., college-oriented friends, counselors), and the adoption of competing roles and obligations (e.g., work, marriage, family). Recent research has indicated that the odds of obtaining a bachelor's degree decrease by 5 percent for every month that a student delays postsecondary enrollment after graduating from high school.[18] The rate of direct enrollment is thus a valid concern for policymakers. As indicated in Figures 3a-b, approximately 13 percent of high school graduates in Indiana directly enroll in an associate's or certificate-granting college, and 54 percent of high school graduates directly enroll in a four-year institution. (These rates do not sum to the total direct enrollment rate of 66 percent due to rounding error.).

Figure 3a. Percentage of High School Graduates Going Directly to an Associate's or Certificate-Granting College

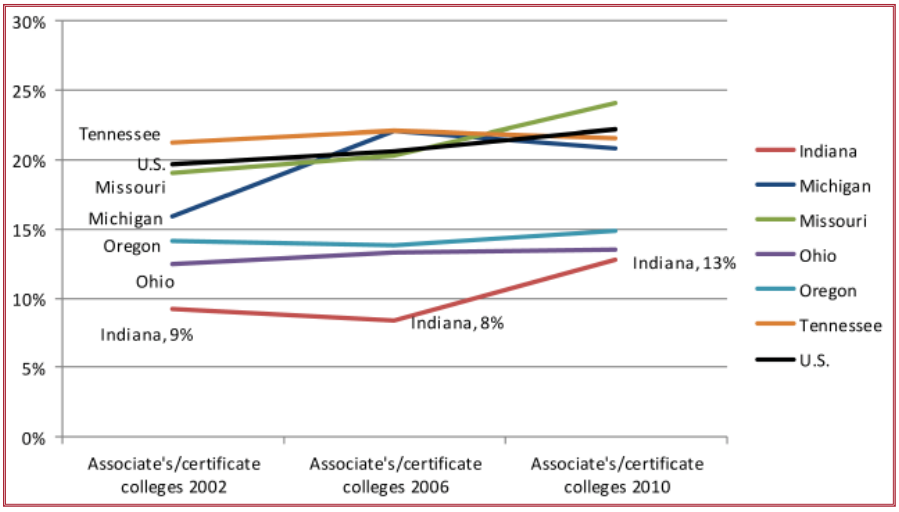
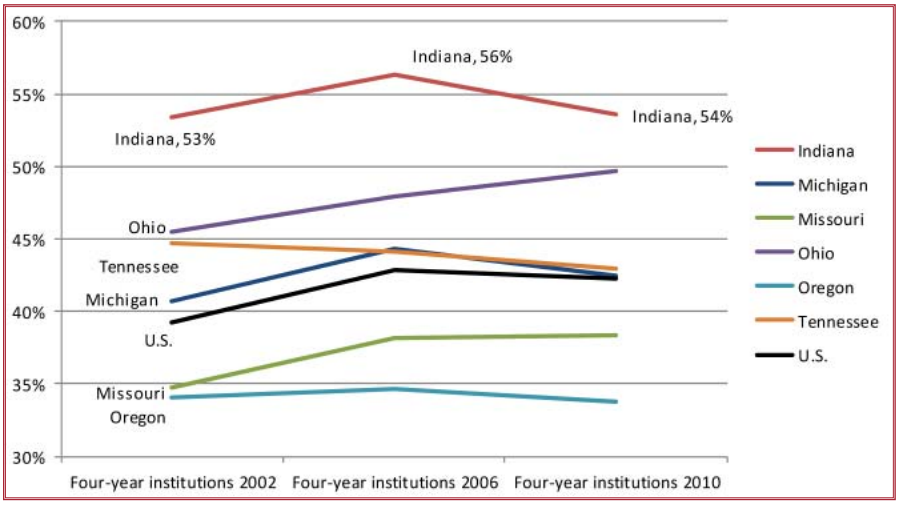


Figure 3b. Percentage of High School Graduates Going Directly to a Four-Year Institution

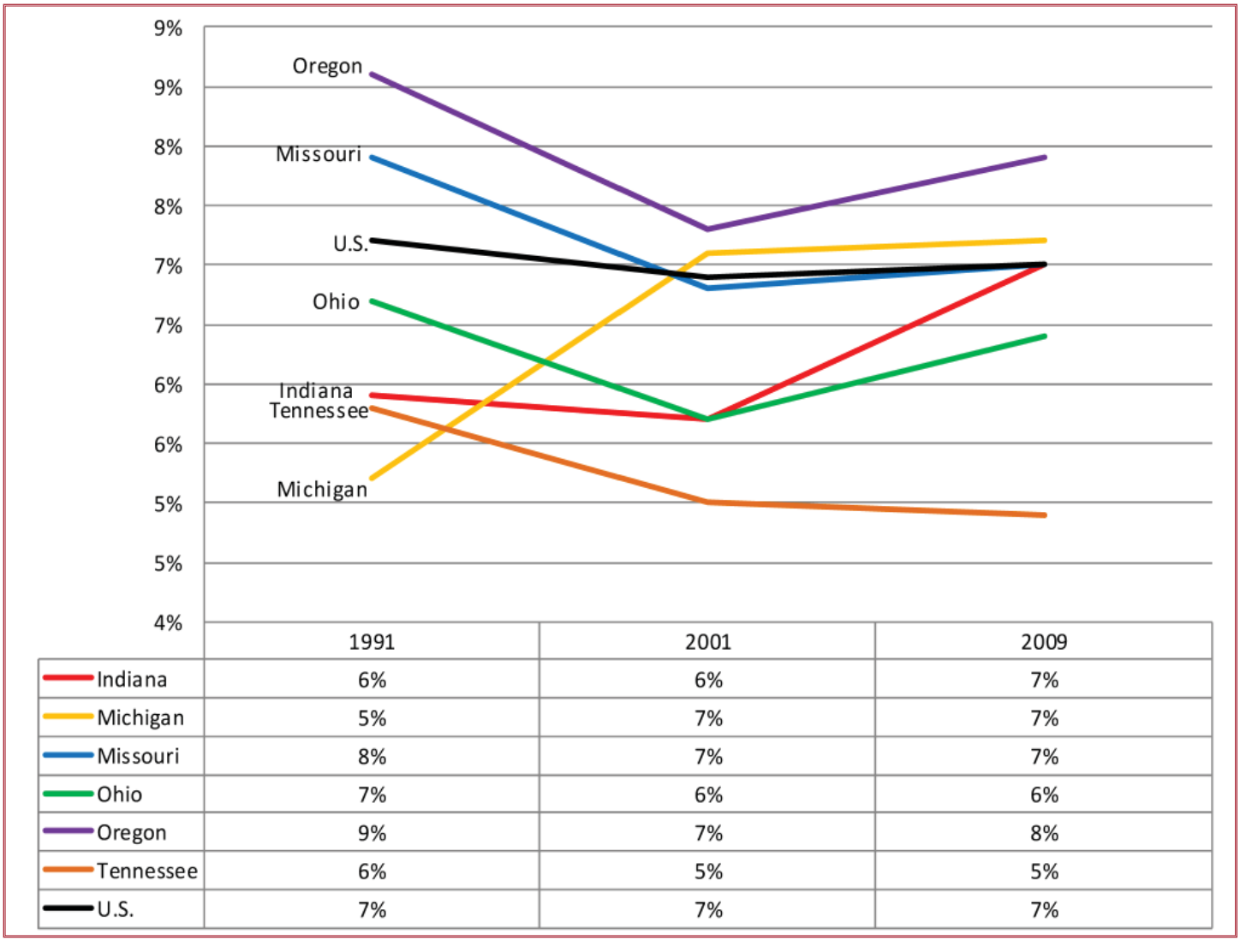


Source: IPEDS. (2013). *Enrollment.* Common Core of Data. (2013). *State diploma recipients/completers.* Private School Universe Survey. (2013). *High school graduates.*

Postsecondary Enrollment Among Older Adults

The expansion of postsecondary opportunities for older adults is particularly crucial for meeting future workforce demands. Figure 4 depicts the proportion of older adults enrolled in postsecondary education. In Indiana, the proportion of older residents enrolled in college increased between 1991 and 2009. Indiana's rate of enrollment among residents aged 25-49 without a bachelor's degree in 2009 (7 percent) equals the national average.

Figure 4. Percentage of Population Enrolled in College: Persons Aged 25-49 without a Bachelor's Degree



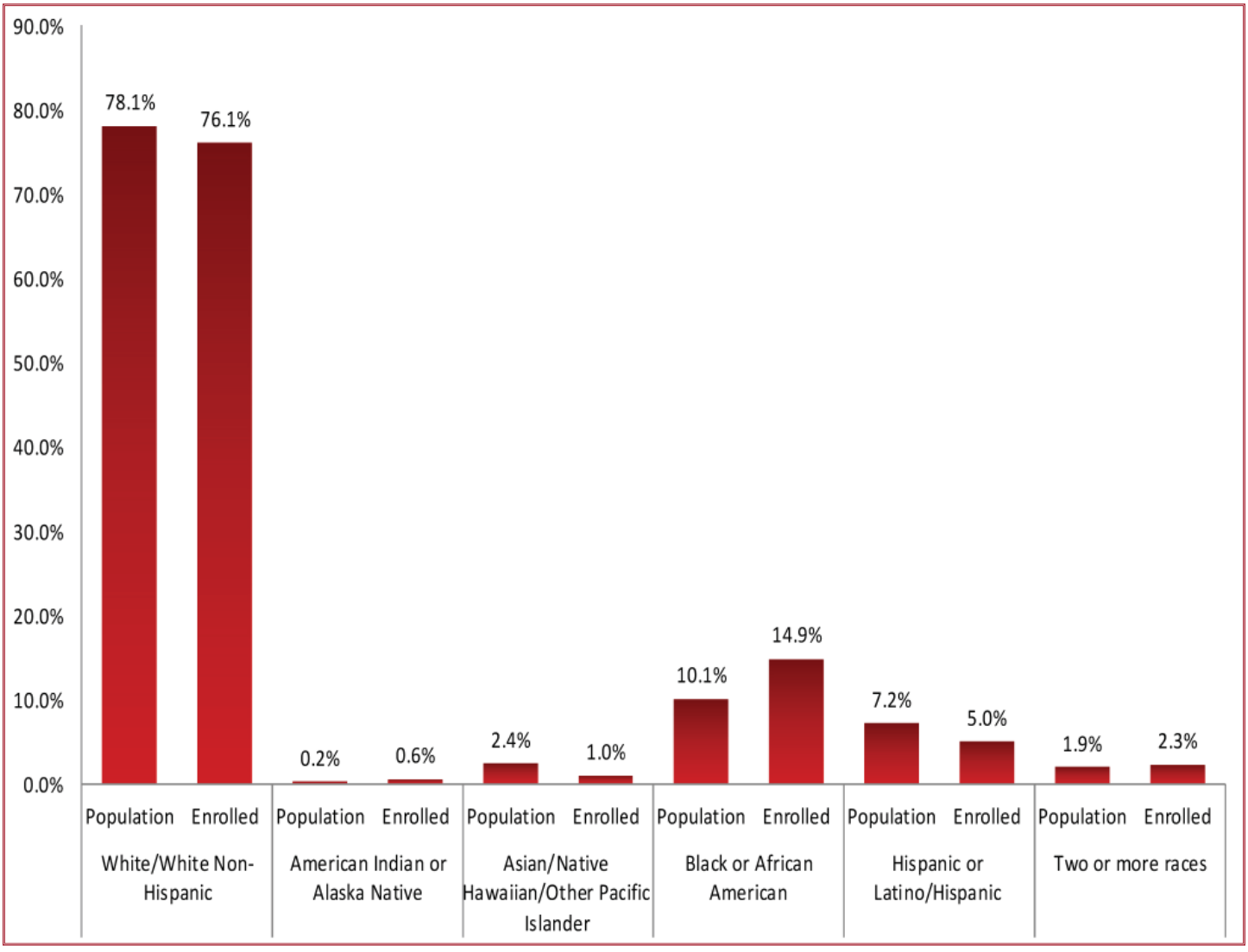
	1991	2001	2009
Indiana	6%	6%	7%
Michigan	5%	7%	7%
Missouri	8%	7%	7%
Ohio	7%	6%	6%
Oregon	9%	7%	8%
Tennessee	6%	5%	5%
U.S.	7%	7%	7%

Source: National Center for Higher Education Management Systems. (2011). *Enrollment of 25-49 year olds as a percent of 25-49 year olds with no bachelor's degree or higher.*

Undergraduate Enrollment by Race/Ethnicity

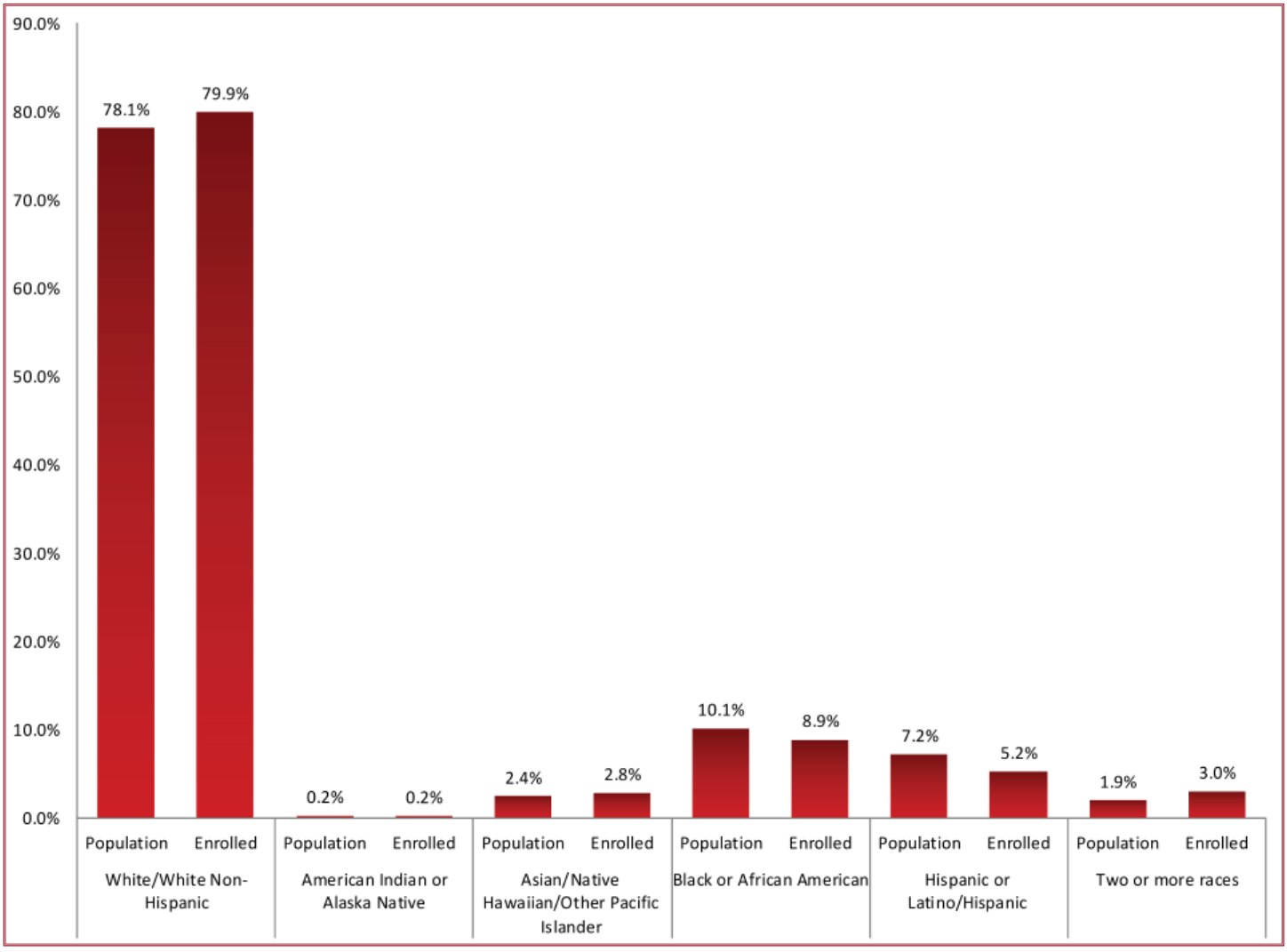
The postsecondary enrollment of traditionally under-represented students has been a priority in states committed to promoting equal opportunity and economic growth, particularly as state populations become more racially and ethnically diverse. Figures 5a and 5b provide a comparison of the demographic composition of state populations aged 18-24 to current postsecondary enrollment in public two- and four-year institutions, respectively. The figures demonstrate that students of under-represented ethnic and racial backgrounds tend to enroll at relatively higher rates at two-year institutions than do White students. The converse holds true at public four-year institutions. For example, Figure 5b indicates that while African American residents aged 18-24 comprise 10 percent of the population in Indiana, only 9 percent of full-time undergraduate students (any age) at public four-year institutions are African American.[19] In contrast, they constitute 15 percent of students at two-year institutions.

Figure 5a. Indiana State Racial Composition for Persons Aged 18-24 and First-Time, Full-Time, Degree-Seeking Student Enrollment in Indiana Public Two-Year Institutions



Source: U.S. Census Bureau. (2012). *2010 U.S. Census Summary Files*. Integrated Postsecondary Education Data System. (2012). *Student enrollment: 2011.*

Figure 5b. Indiana State Racial Composition for Persons Aged 18-24 and First-Time, Full-Time, Degree-Seeking Student Enrollment in IndianaPublic Four-Year Institutions

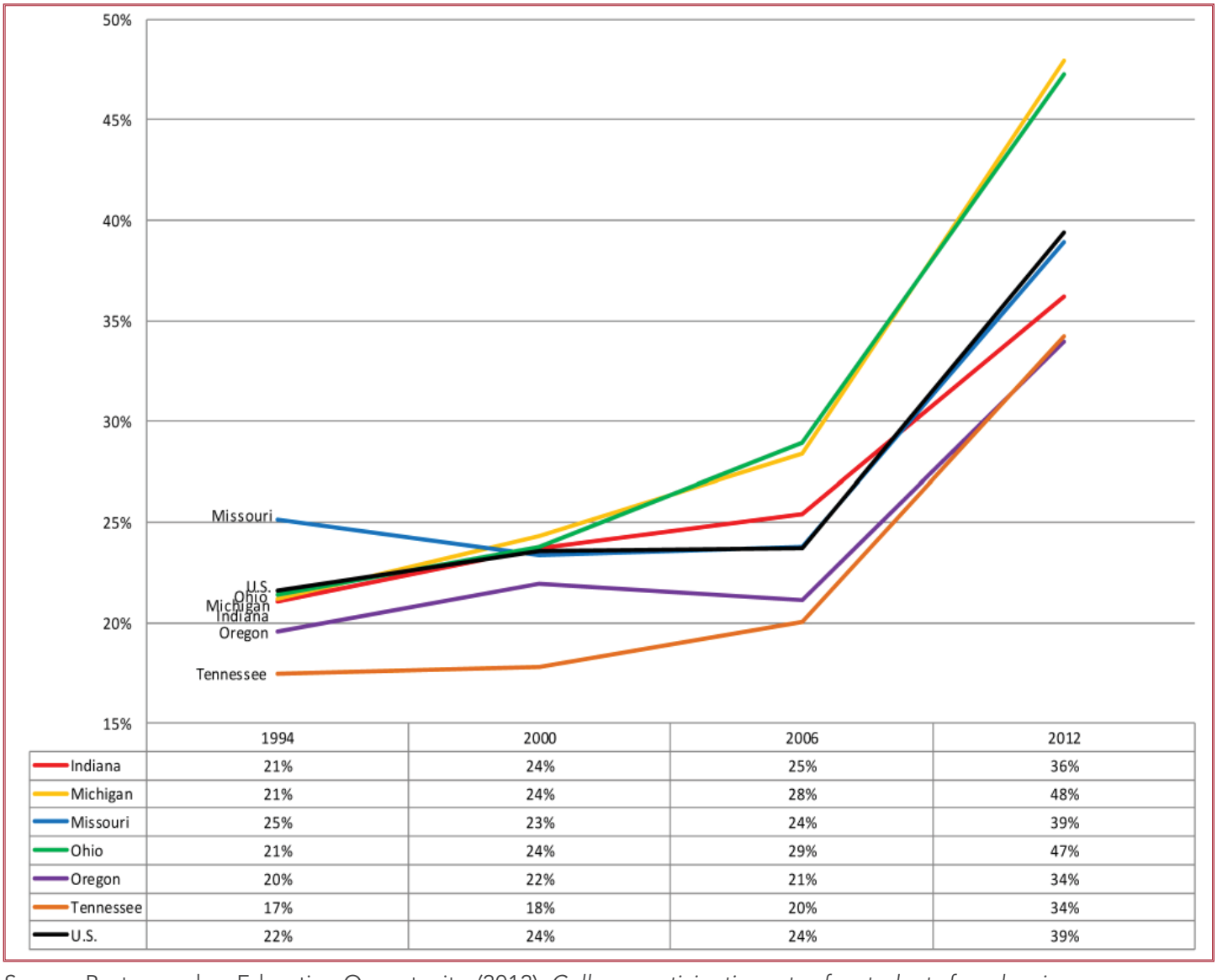


Source: U.S. Census Bureau. (2012). *2010 U.S. Census Summary Files.* Integrated Postsecondary Education Data System. (2012). *Student enrollment: 2011.*

Postsecondary Enrollment among Low-Income Students

Students from low-income families have traditionally faced academic, social, and financial barriers to college enrollment. States continue to address such barriers through PK-12 improvement initiatives, postsecondary encouragement programs, and student grant aid. The rate of enrollment among low-income students has increased in Indiana over the past decade (see Figure 6).[20] Despite these gains, the current rate of 36 percent is below the national average of 39 percent.

Figure 6. Undergraduate Enrollment Rate of Low-Income Students over Time



	1994	2000	2006	2012
Indiana	21%	24%	25%	36%
Michigan	21%	24%	28%	48%
Missouri	25%	23%	24%	39%
Ohio	21%	24%	29%	47%
Oregon	20%	22%	21%	34%
Tennessee	17%	18%	20%	34%
U.S.	22%	24%	24%	39%

Source: Postsecondary Education Opportunity. (2012). *College participation rates for students from low income families by state.*

Postsecondary Degree Completion

While many states have made significant gains in the rate of postsecondary enrollment, rates of degree completion across the nation have largely remained steady and below the level expected by policymakers. Nationally, only 29 percent of students who enroll in a two-year college graduate within 3 years, and 56 percent of students who enroll in a four-year institution graduate with a bachelor's degree within 6 years.[21] The failure to complete a degree program has negative consequences for both students and states. Since employers are more likely to demand an educational credential than a specific number of postsecondary credits, a premature departure from college can severely curb one's prospects for future employment and earnings. This is partly evident in the 2010 annual average unemployment rate of individuals with some college but no degree, which was 3.8 percentage points higher than the unemployment rate of individuals with a bachelor's degree.[22] Moreover, individuals who have attained a bachelor's degree earn 26 percent more than those who have completed 16 years of schooling without graduating from college.[23] Low completion rates can thus translate into liabilities and an impoverished tax base for states and local communities.

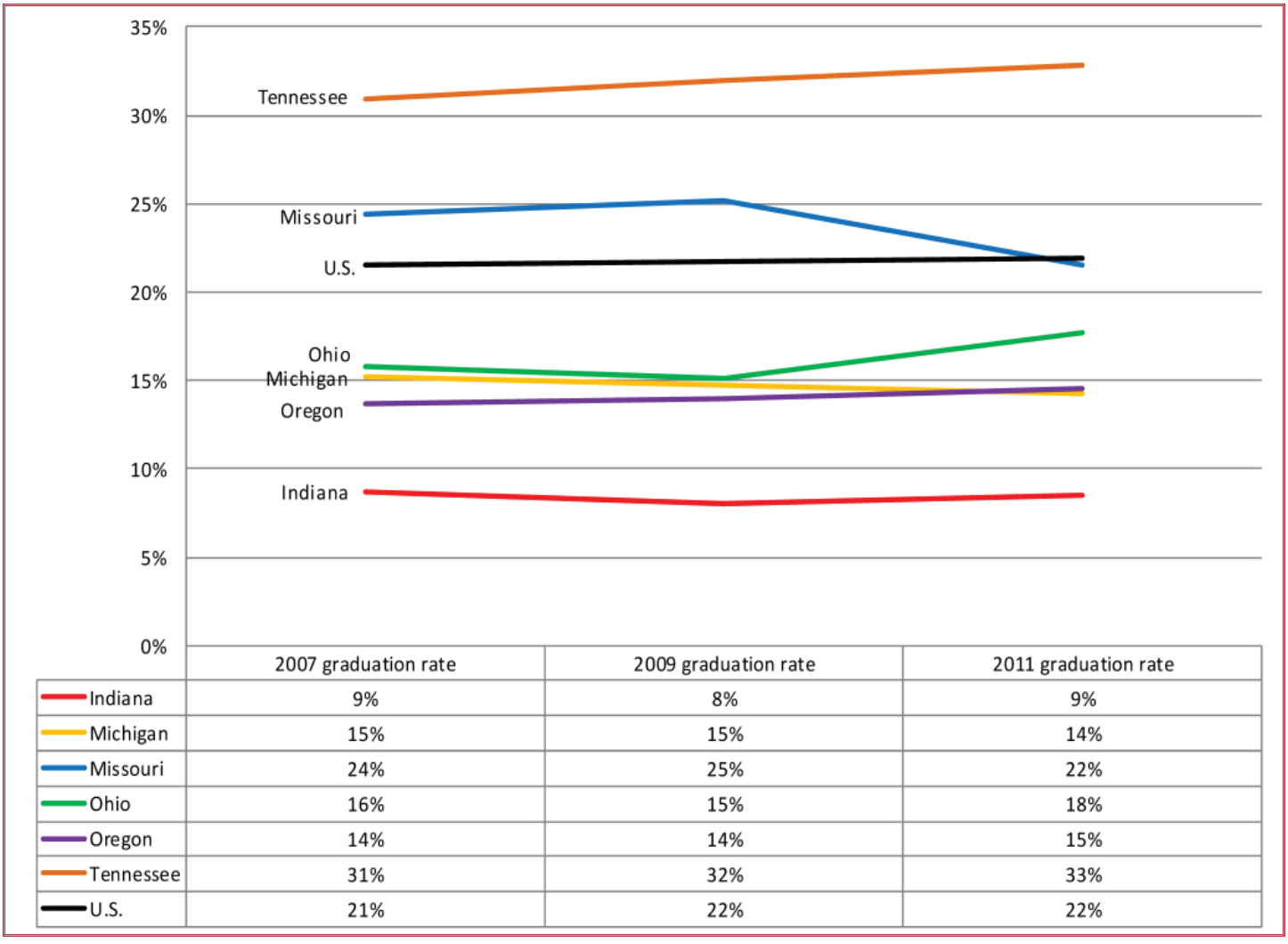
Indicators in this section include:

» Graduation Rates at Two-Year and Four-Year Institutions[24]
» Graduation Rates by Ethnicity at Public Four-Year Institutions

Graduation Rates at Two-Year and Four-Year Institutions

A commonly used metric for degree completion is graduation from a two-year institution within three years and graduation from a four-year institution within six years. Figure 7a shows that the public two-year graduation rate in Indiana is below the national average and the rates in several peer states. The public four-year graduation rate in Indiana was 53 percent, which was lower than the rates of most comparison states and the national average (see Figure 7b). Figure 7c demonstrates that Indiana's private nonprofit colleges and universities outperform private institutions in all peer states. Graduation rates among four-year colleges are lowest at Indiana's private for-profit institutions (see Figure 7d).

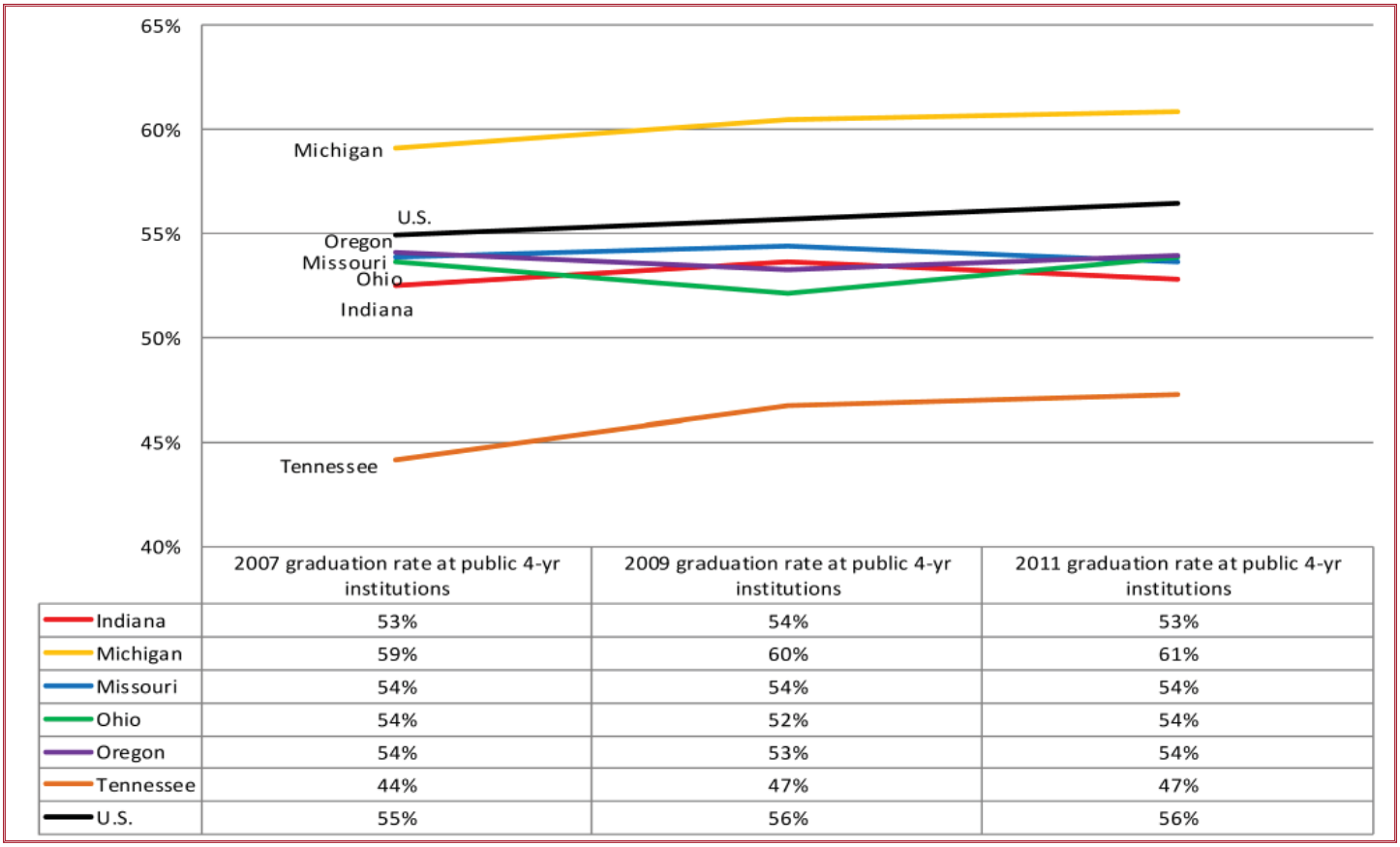
Figure 7a. Graduation Rates at Public Two-Year Institutions



	2007 graduation rate	2009 graduation rate	2011 graduation rate
Indiana	9%	8%	9%
Michigan	15%	15%	14%
Missouri	24%	25%	22%
Ohio	16%	15%	18%
Oregon	14%	14%	15%
Tennessee	31%	32%	33%
U.S.	21%	22%	22%

Source: Integrated Postsecondary Education Data System (2013). *Graduation.*

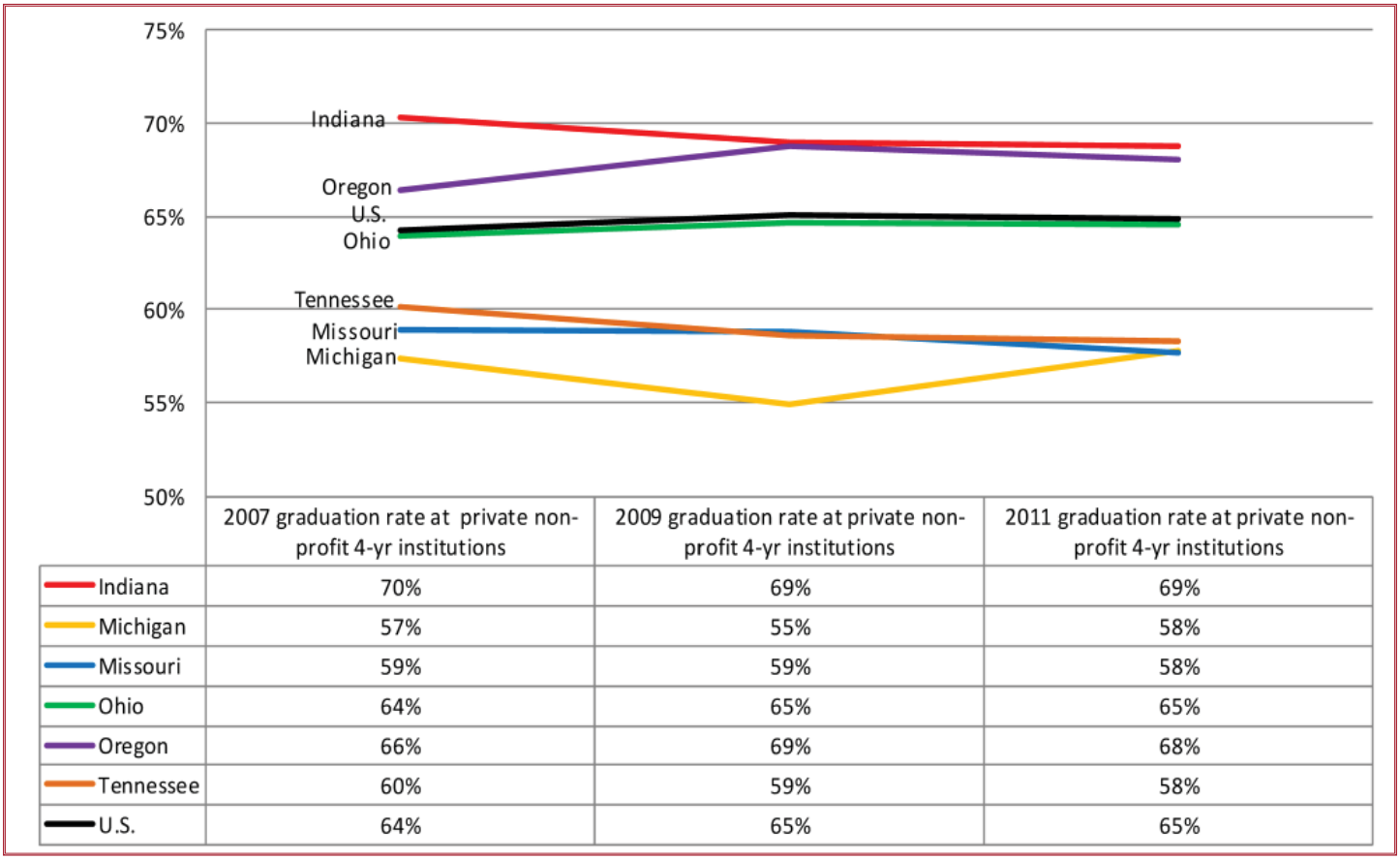
Figure 7b. Graduation Rates at Public Four-Year Institutions



	2007 graduation rate at public 4-yr institutions	2009 graduation rate at public 4-yr institutions	2011 graduation rate at public 4-yr institutions
Indiana	53%	54%	53%
Michigan	59%	60%	61%
Missouri	54%	54%	54%
Ohio	54%	52%	54%
Oregon	54%	53%	54%
Tennessee	44%	47%	47%
U.S.	55%	56%	56%

Source: Integrated Postsecondary Education Data System (2013). *Graduation.*

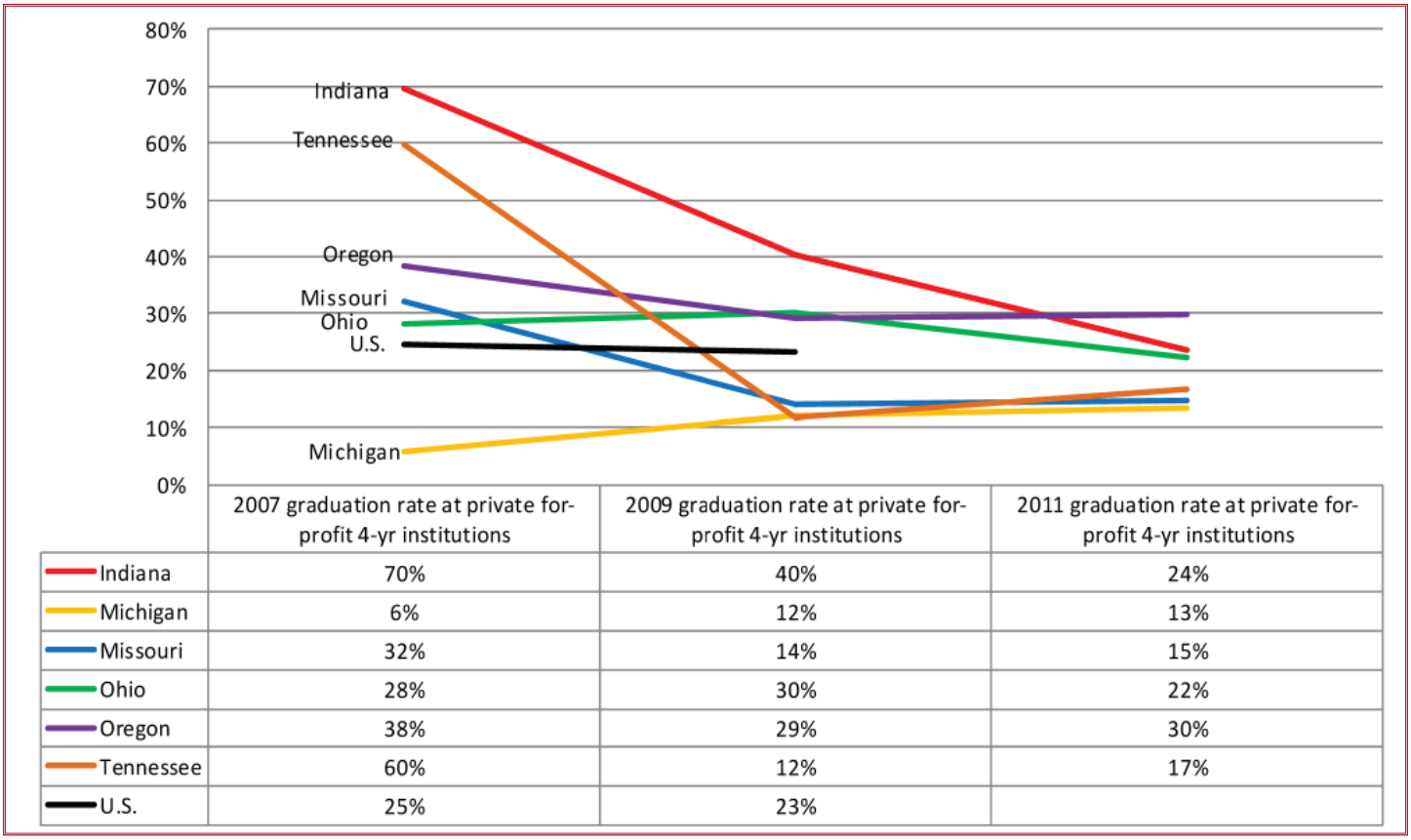
Figure 7c. Graduation Rates at Private Non-Profit Four-Year Institutions



	2007 graduation rate at private non-profit 4-yr institutions	2009 graduation rate at private non-profit 4-yr institutions	2011 graduation rate at private non-profit 4-yr institutions
Indiana	70%	69%	69%
Michigan	57%	55%	58%
Missouri	59%	59%	58%
Ohio	64%	65%	65%
Oregon	66%	69%	68%
Tennessee	60%	59%	58%
U.S.	64%	65%	65%

Source: Integrated Postsecondary Education Data System (2013). *Graduation.*

Figure 7d. Graduation Rates at Four-Year Private For-Profit Institutions



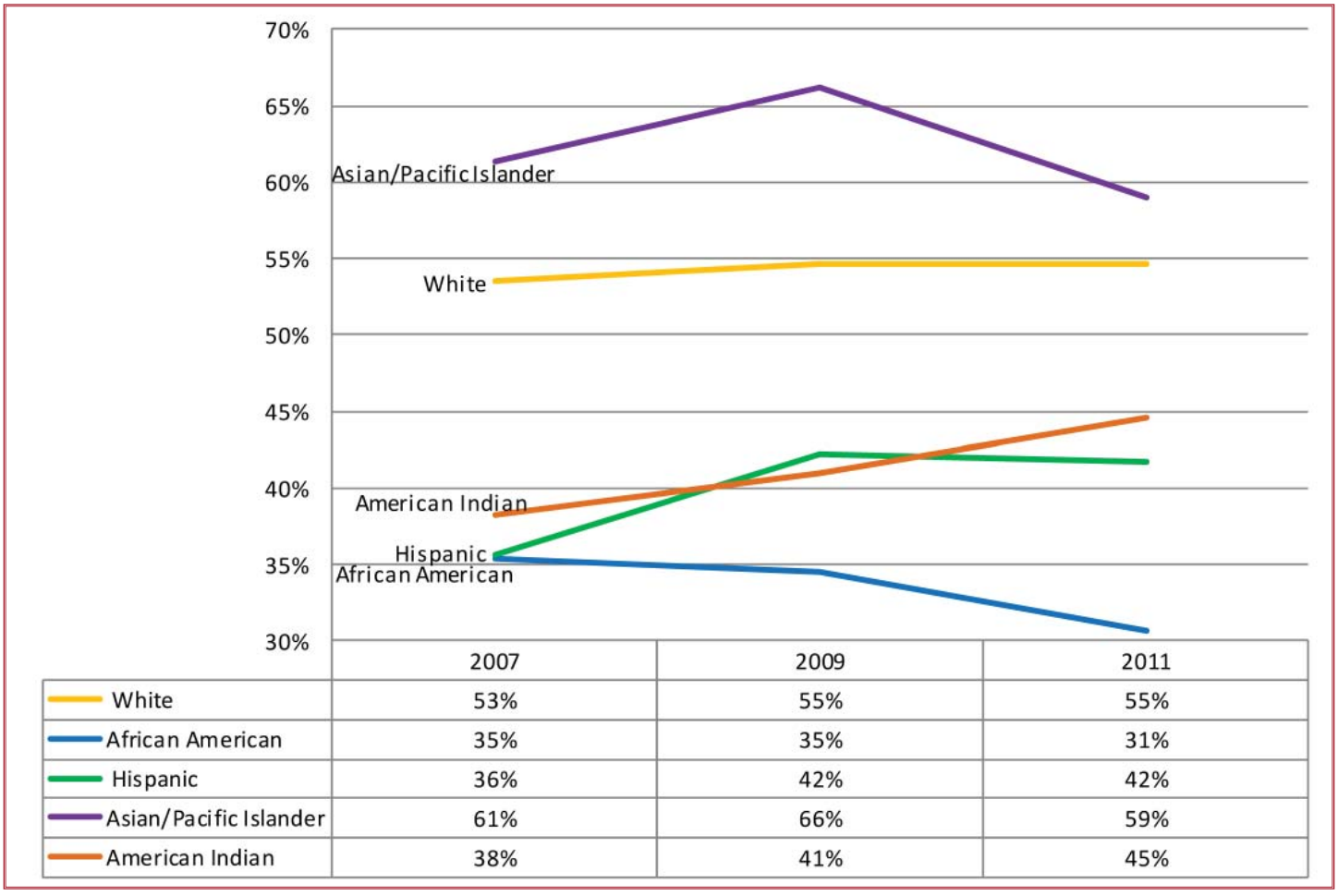
	2007 graduation rate at private for-profit 4-yr institutions	2009 graduation rate at private for-profit 4-yr institutions	2011 graduation rate at private for-profit 4-yr institutions
Indiana	70%	40%	24%
Michigan	6%	12%	13%
Missouri	32%	14%	15%
Ohio	28%	30%	22%
Oregon	38%	29%	30%
Tennessee	60%	12%	17%
U.S.	25%	23%	

Source: Integrated Postsecondary Education Data System (2013). *Graduation.* Note. Data were missing for some years.

Graduation Rates by Ethnicity at Public Four-Year Institutions

Figure 8 depicts the six-year graduation rates for students of various ethnic backgrounds. Graduation rates were highest among White and Asian students. Less than half of students of Hispanic or American Indian ethnicity graduate within six years of beginning college. Graduation rates are lowest among African American students (31 percent). Moreover, the graduation rate of African American students decreased between 2007 and 2011.

Figure 8. 6-Year Graduation Rates by Ethnicity at Indiana Public Four-Year Institutions



	2007	2009	2011
White	53%	55%	55%
African American	35%	35%	31%
Hispanic	36%	42%	42%
Asian/Pacific Islander	61%	66%	59%
American Indian	38%	41%	45%

Source: Integrated Postsecondary Education Data System (2013). *Graduation.*

System Efficiency

Under conditions of financial exigency, states and institutions are pressed to produce graduates with high-quality degrees or certificates at the lowest possible cost. The measurement of efficiency, though, is particularly difficult due to the labor-intensive process of educating students, the challenges of scalability in academic environments, and changing workforce demands. Policymakers should thus interpret indicators of efficiency with caution, while recognizing that producing a skilled labor force requires significant investments in time and financial resources.

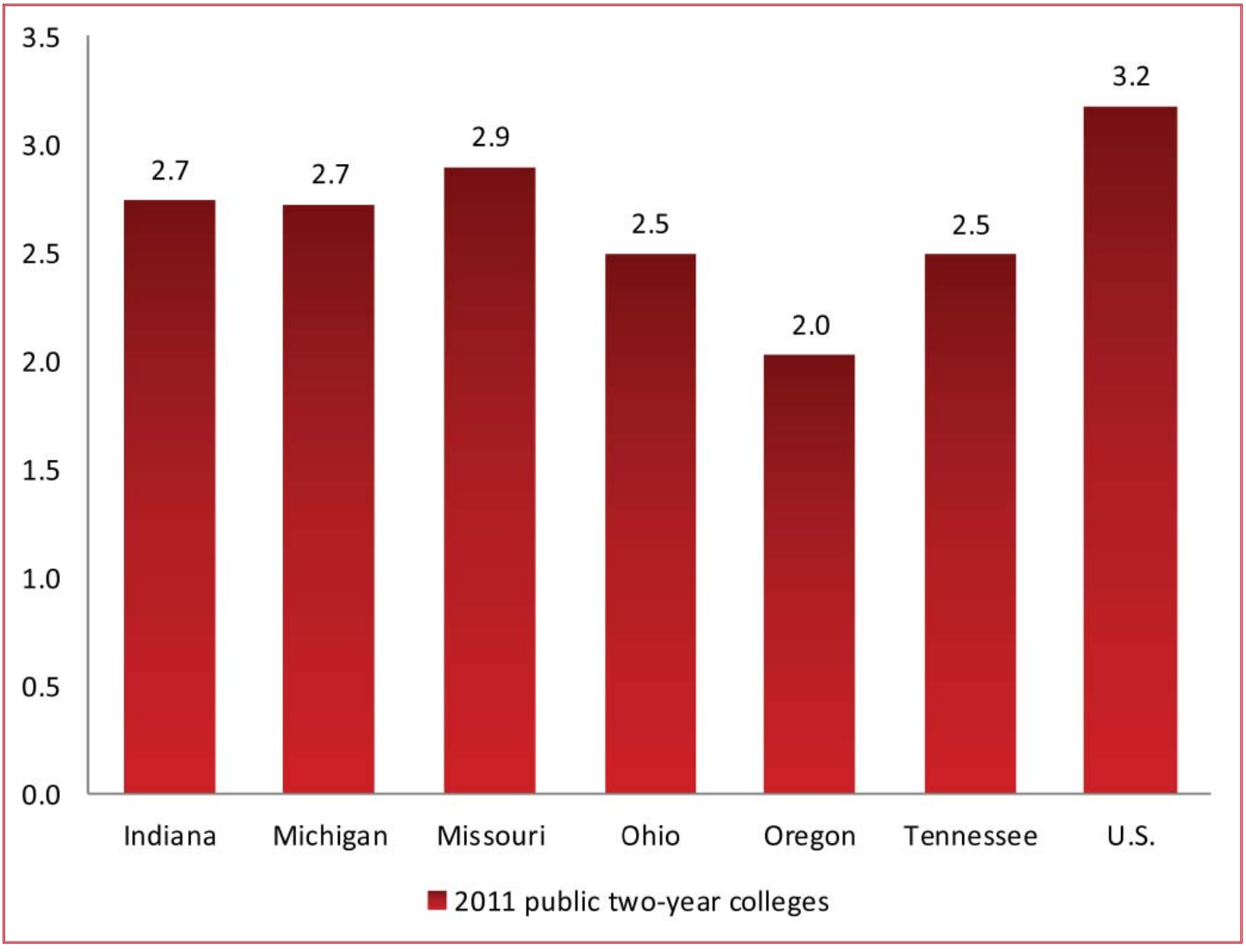
Indicators in this section include:

» Credentials Awarded per Expenditure

Credentials Awarded per Expenditure

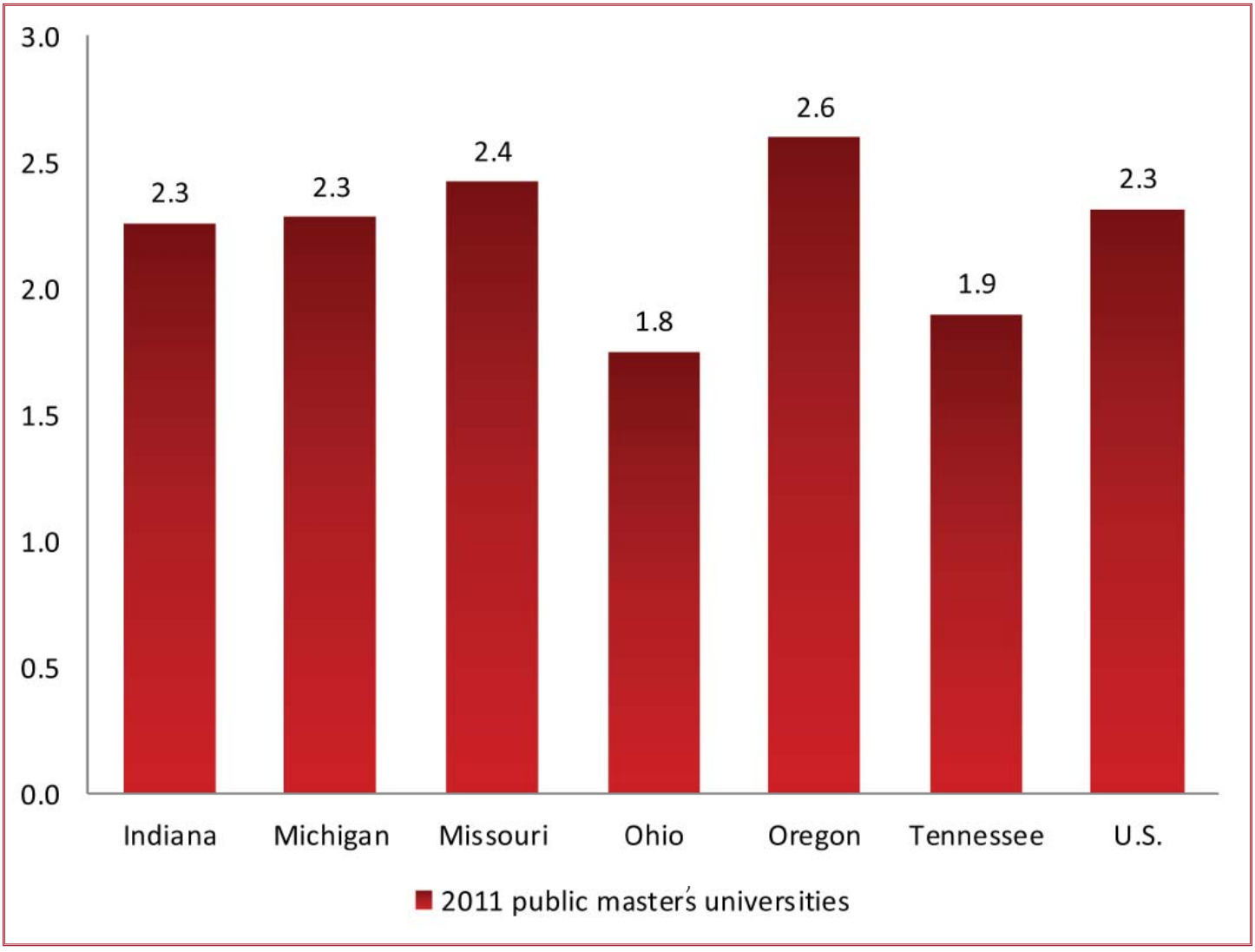
Revenue-based indicators of efficiency are helpful for comparing states on the use of educational resources. Figures 9a-c depict state performance according to the number of credentials awarded per $100,000 of education and related expenditures.[25] Performance on this measure among Indiana's institutions exceeds or approximates efficiency levels observed in several comparison states.[26]

Figure 9a. Credentials Awarded Per $100,000 of Education and Related Expenditures: Public Two-Year Colleges



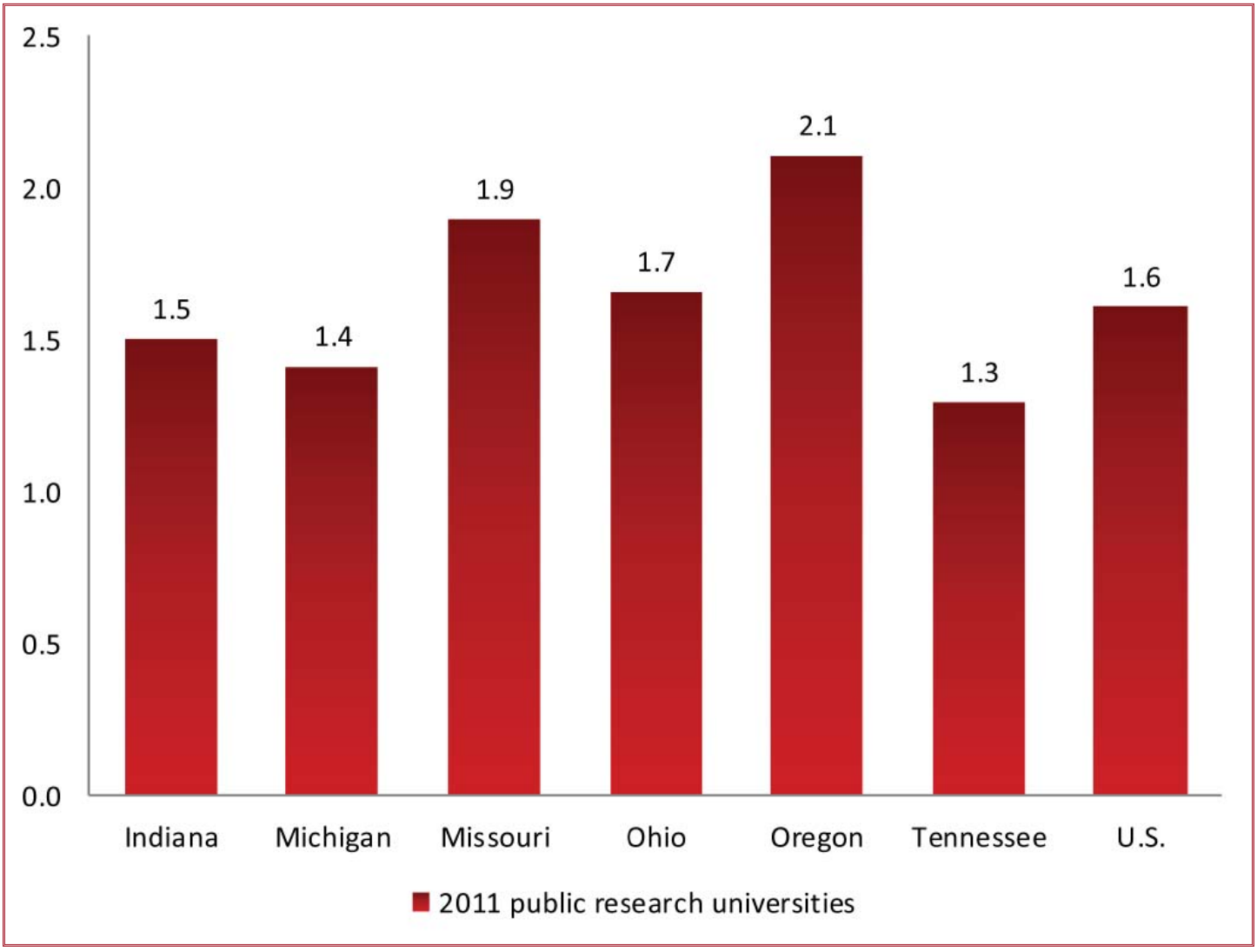
Source: Integrated Postsecondary Education Data System (2013). *Completions, Finance.*

Figure 9b. Credentials Awarded Per $100,000 of Education and Related Expenditures: Public Master's Universities



Source: Integrated Postsecondary Education Data System (2013). *Completions, Finance.*

Figure 9c. Credentials Awarded Per $100,000 of Education and Related Expenditures: Public Research Universities



Source: Integrated Postsecondary Education Data System (2013). *Completions, Finance.*

LEVERAGE POINTS

Academic Preparation

The extent to which students are academically prepared for college predicts degree completion beyond the effects of race/ethnicity, socioeconomic status, institutional selectivity, attendance patterns, and academic performance during college.[27] Academic preparation thus constitutes a key leverage point for improving postsecondary outcomes. However, the cumulative nature of both academic competencies and deficits necessitates an assessment of academic preparedness that spans pre-K education, middle school, and high school.

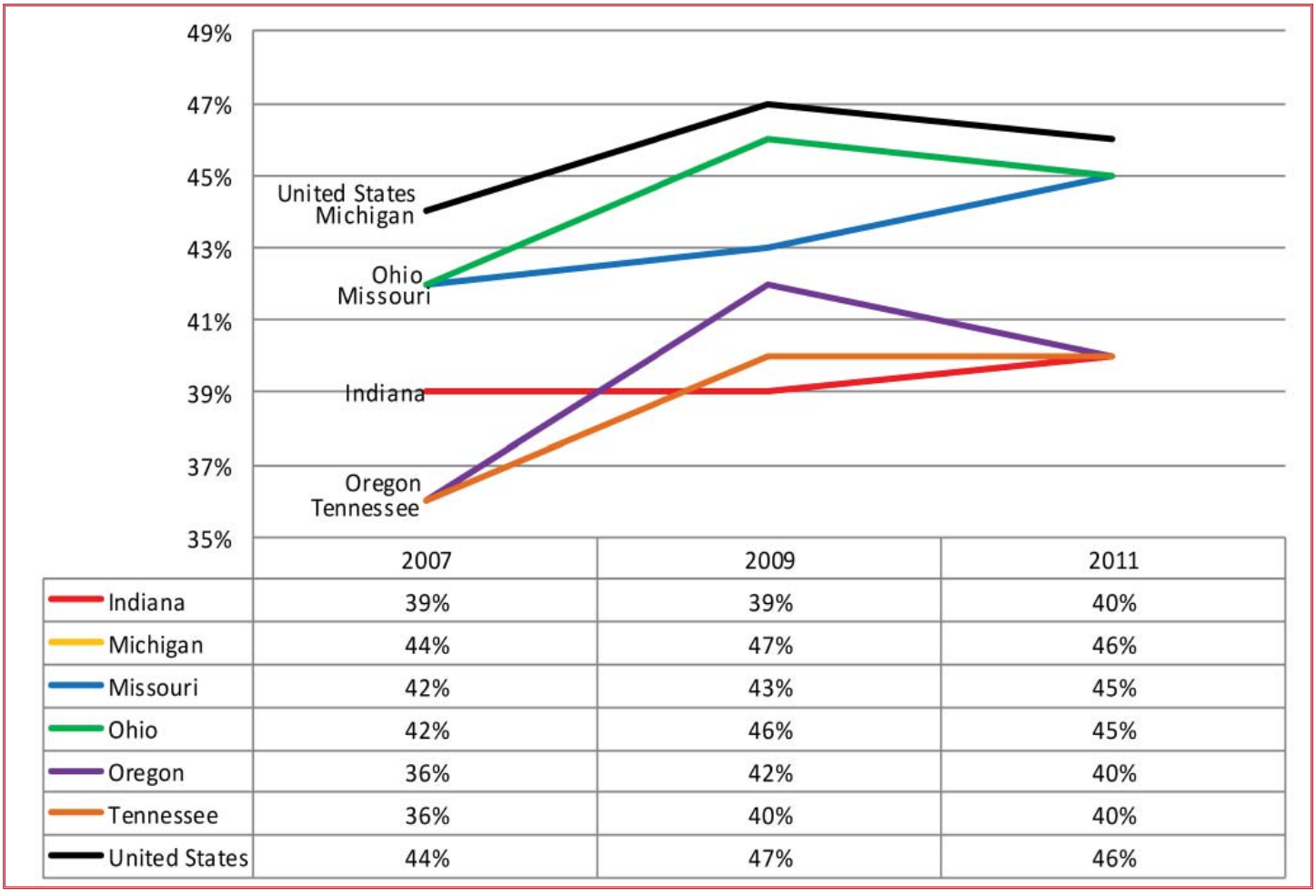
Indicators in this section include:

» Children Ages 3 to 4 Enrolled in Preschool
» Academic Proficiency of 8th Grade Students
» Rate of High School Graduation
» Proportion of College-bound Students who Demonstrate College-ready Academic Achievement

Children Ages 3 to 4 Enrolled in Preschool

Early childhood education provides a critical foundation for successfully managing subsequent academic challenges. Relative to children in control groups, participants in high-quality, educationally-focused programs have exhibited greater long-term gains in IQ, lower rates of grade retention and special education placements, and higher rates of high school graduation and college attendance.[28] Moreover, the benefit-cost ratios of such programs have varied from 2.5 to 16.2. Figure 10 demonstrates that the rate of enrollment in preschool among children ages 3 to 4 is lower in Indiana than in several peer states. The current rate of preschool enrollment in Indiana can also be contrasted with the national average rate of school enrollment among children ages 5 to 6 (93 percent).[29]

Figure 10. Children ages 3 to 4 enrolled in preschool



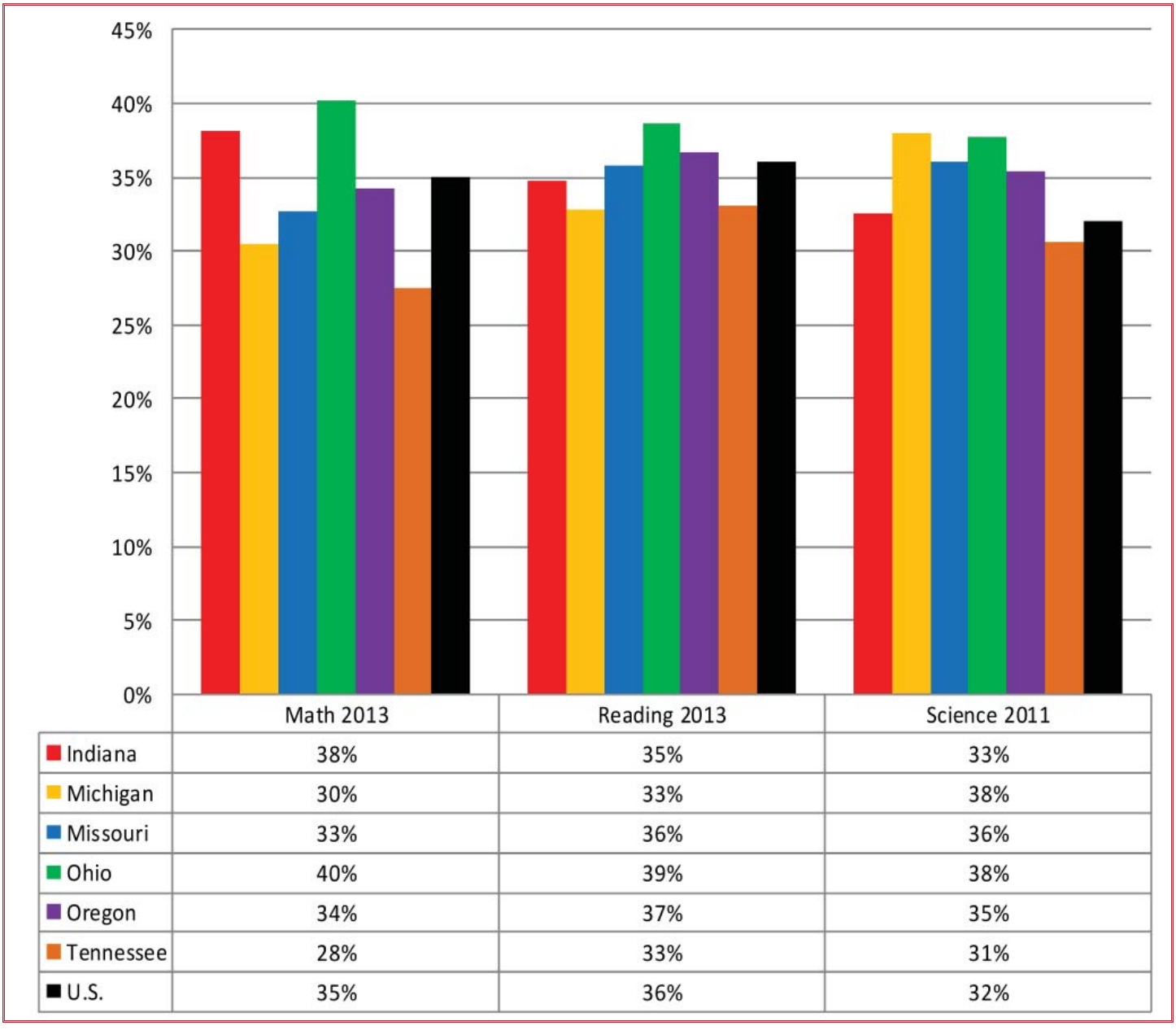
	2007	2009	2011
Indiana	39%	39%	40%
Michigan	44%	47%	46%
Missouri	42%	43%	45%
Ohio	42%	46%	45%
Oregon	36%	42%	40%
Tennessee	36%	40%	40%
United States	44%	47%	46%

Source: The Annie E. Casey Foundation Kids Count Data Center. (2013). *Early childhood indicators.*

Academic Proficiency of 8th Grade Students

The successful completion of rigorous coursework in high school is significantly determined by whether students enter high school with foundational skills and knowledge in such areas as math, reading, and science. In fact, 8th grade academic achievement has been found to be the most significant predictor of college readiness among 12th grade students.[30] As indicated in Figure 11a, less than half of students in Indiana and comparison states score at or above the proficiency level in math, reading, or science on the National Assessment of Educational Progress (NAEP). Moreover, Figure 11b reveals wide disparities in performance between students from low- and higher-income families.[31]

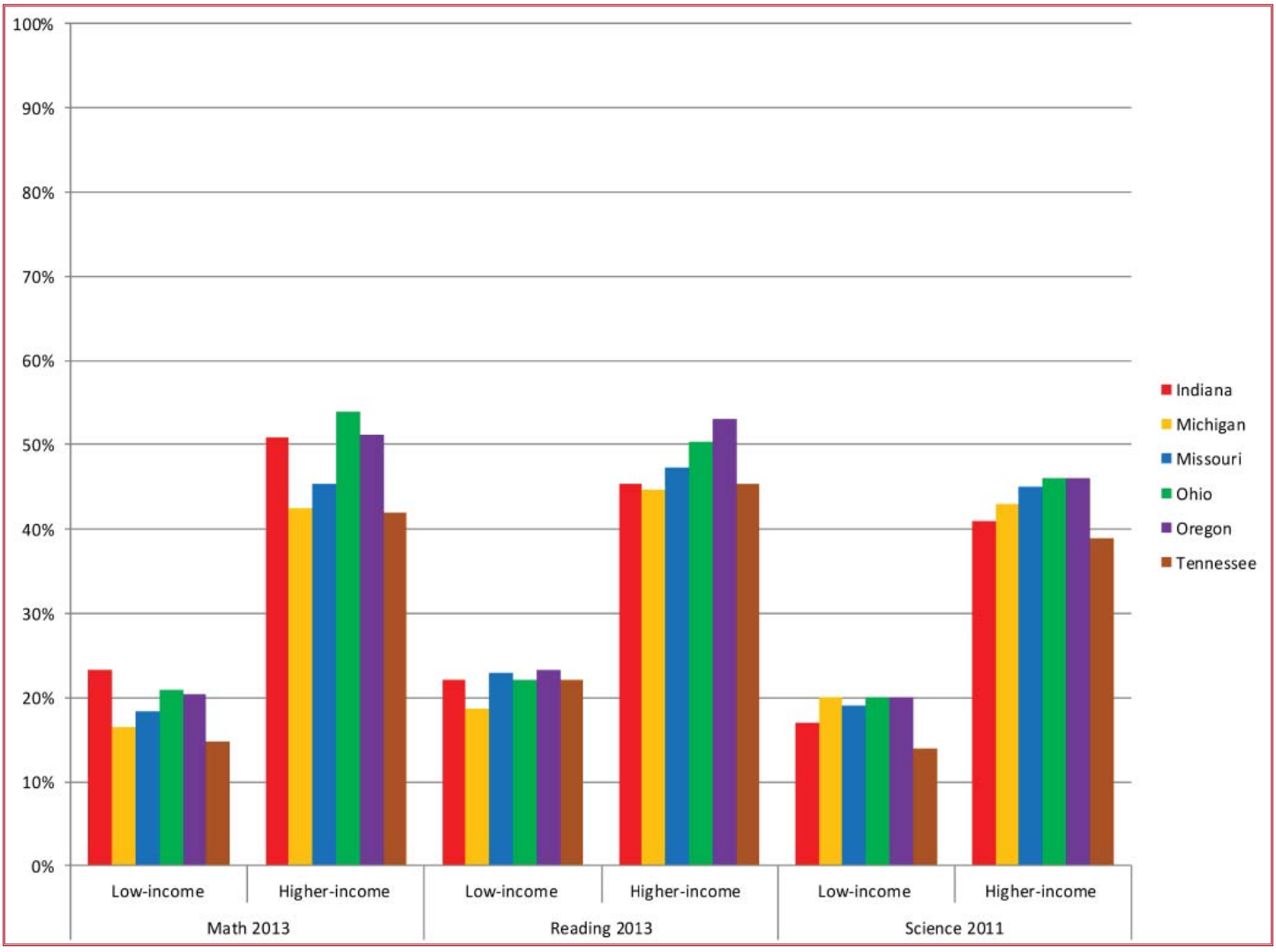
Figure 11a. NAEP 8th Grade Math, Reading, and Science Scores: All Students At or Above Proficient Level



	Math 2013	Reading 2013	Science 2011
Indiana	38%	35%	33%
Michigan	30%	33%	38%
Missouri	33%	36%	36%
Ohio	40%	39%	38%
Oregon	34%	37%	35%
Tennessee	28%	33%	31%
U.S.	35%	36%	32%

Source: National Center for Education Statistics. (2013). *National assessment of educational progress: 2013.*

Figure 11b. NAEP 8th Grade Math, Reading, and Science Scores: Low- and Higher-Income Students At or Above Proficient Level

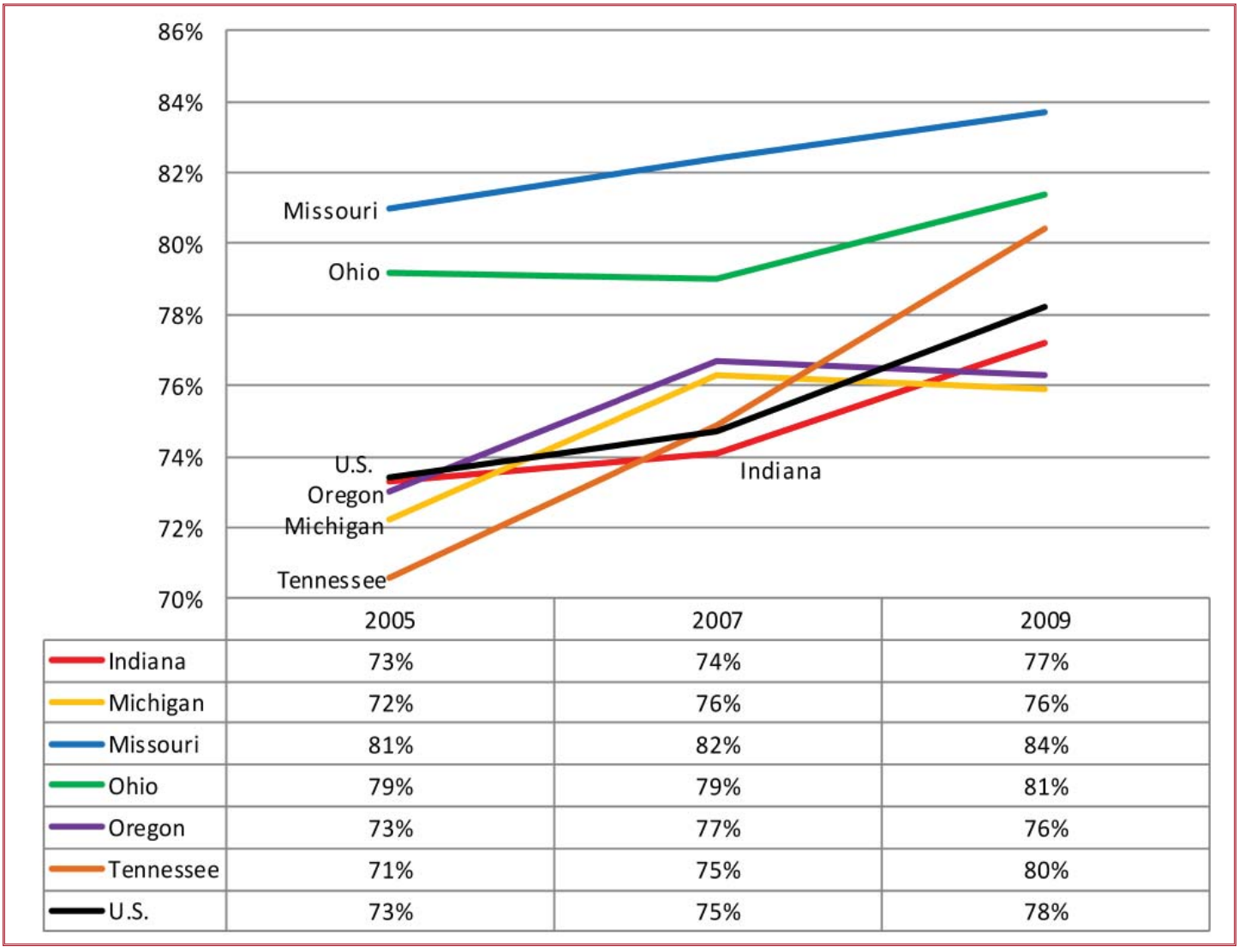


Source: National Center for Education Statistics. (2013). *National assessment of educational progress: 2011, 2013.*

Rate of High School Graduation

The completion of high school or its equivalent is required for college admission. In Indiana, the percentage of 9th grade students who graduate from high school four years later has risen since 2005 (see Figure 12). However, the current graduation rate remains below the national average.[32]

Figure 12. Public High School Graduation Rates Over Time



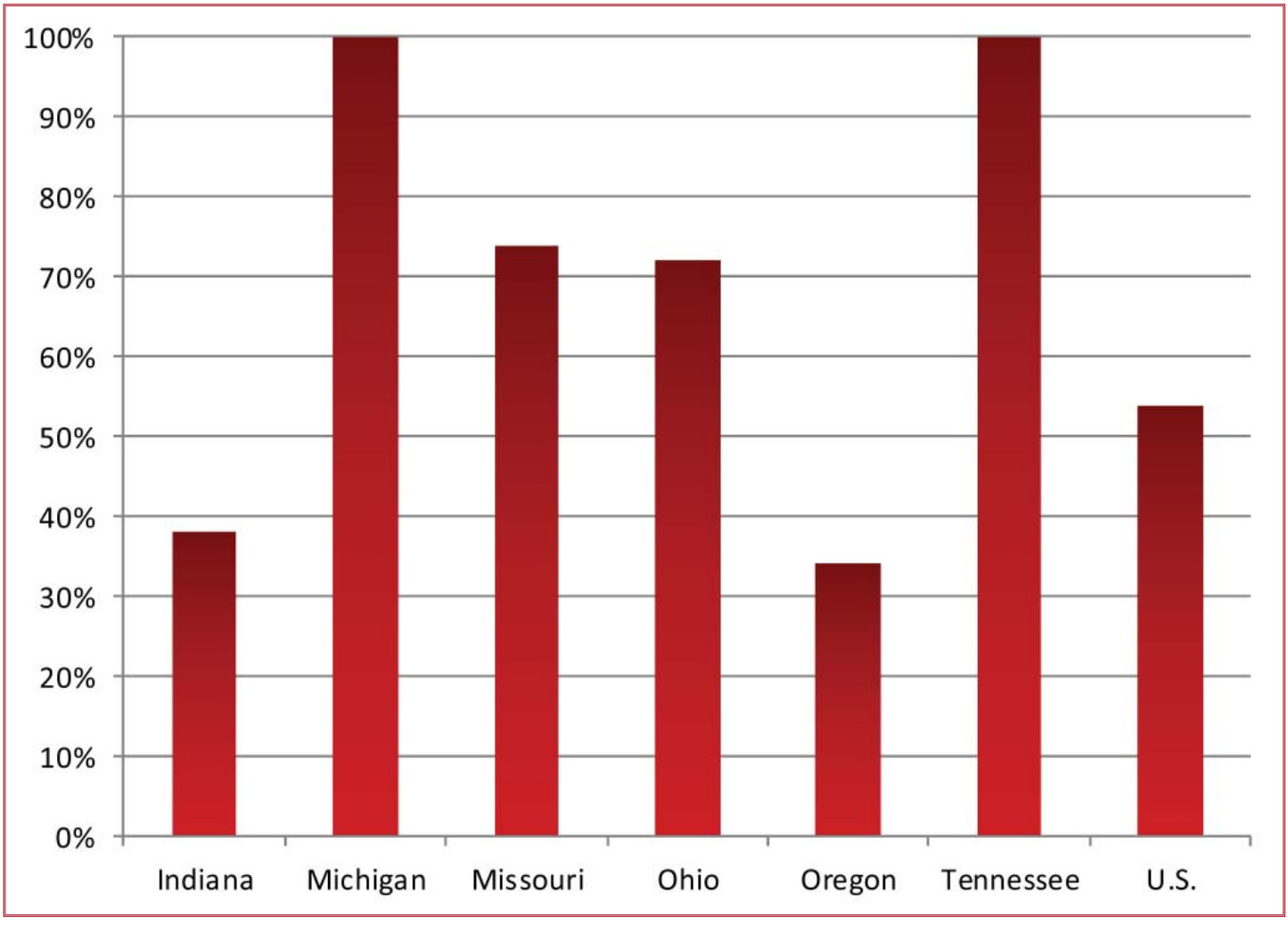
	2005	2007	2009
Indiana	73%	74%	77%
Michigan	72%	76%	76%
Missouri	81%	82%	84%
Ohio	79%	79%	81%
Oregon	73%	77%	76%
Tennessee	71%	75%	80%
U.S.	73%	75%	78%

Source: NCES. (2013). *Common core of data.*

Proportion of College-bound Students who Demonstrate College-ready Academic Achievement

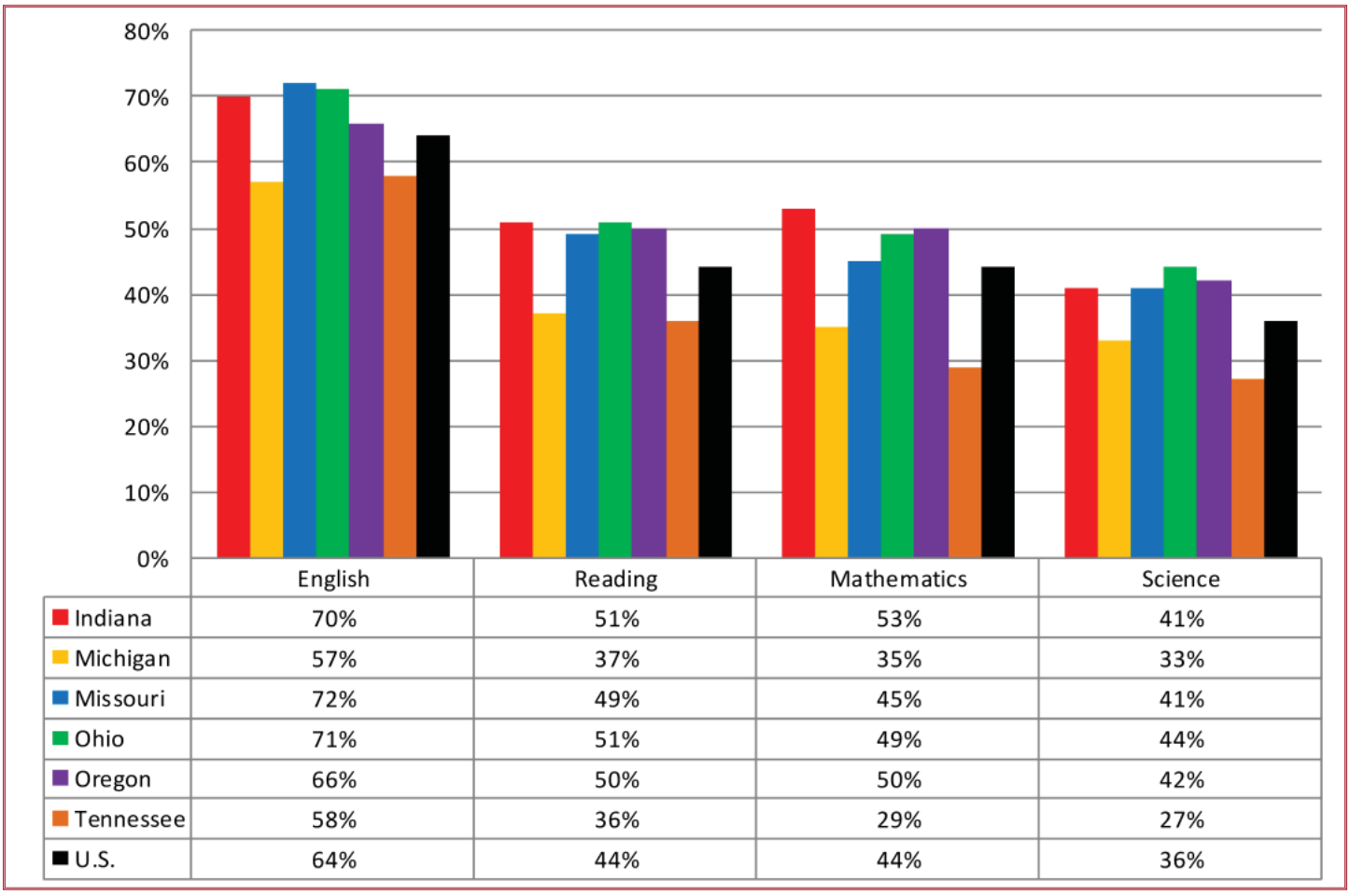
Students who enter college with a high level of academic preparedness are less likely to need remedial education and are more likely to complete their degrees on time. Academic preparedness can be assessed by the proportion of students taking the ACT who meet college readiness benchmarks. Benchmark scores in English, math, reading, and science delineate a 75 percent likelihood of attaining at least a "C" in first-year college courses (e.g., biology).[33] Figure 13a demonstrates that a relatively low proportion of high school graduates in Indiana take the ACT. Figure 13b indicates that the percentage of ACT-tested high school graduates meeting or exceeding benchmark scores was higher in Indiana than in several peer states. Nonetheless, many students did not meet the benchmark in each subject.

Figure 13a. Percentage of High School Graduates Taking ACT



Source: ACT. (2013). *2013 national and state scores.*

Figure 13b. Percentage of ACT-Tested High School Graduates Who Met or Exceeded College Readiness Benchmark Scores



	English	Reading	Mathematics	Science
Indiana	70%	51%	53%	41%
Michigan	57%	37%	35%	33%
Missouri	72%	49%	45%	41%
Ohio	71%	51%	49%	44%
Oregon	66%	50%	50%	42%
Tennessee	58%	36%	29%	27%
U.S.	64%	44%	44%	36%

Source: ACT. (2013). *College readinesss benchmark attainment by state: 2013.*

Affordability

The affordability of higher education has become a growing concern for students, parents, and policymakers. Over the past few decades, college tuition and fees have increased at more than four times the rate of consumer prices partly in response to reductions in state and local funding. For instance, tuition revenue per student at public research universities increased by $369 between 2008 and 2009, a time during which state and local appropriations per student decreased by $751.[34] Such precipitous increases in tuition have occurred while the incomes of many low- and middle-class families have stagnated or declined. Accordingly, states play an increasingly critical role in determining the relative affordability of public colleges and universities.

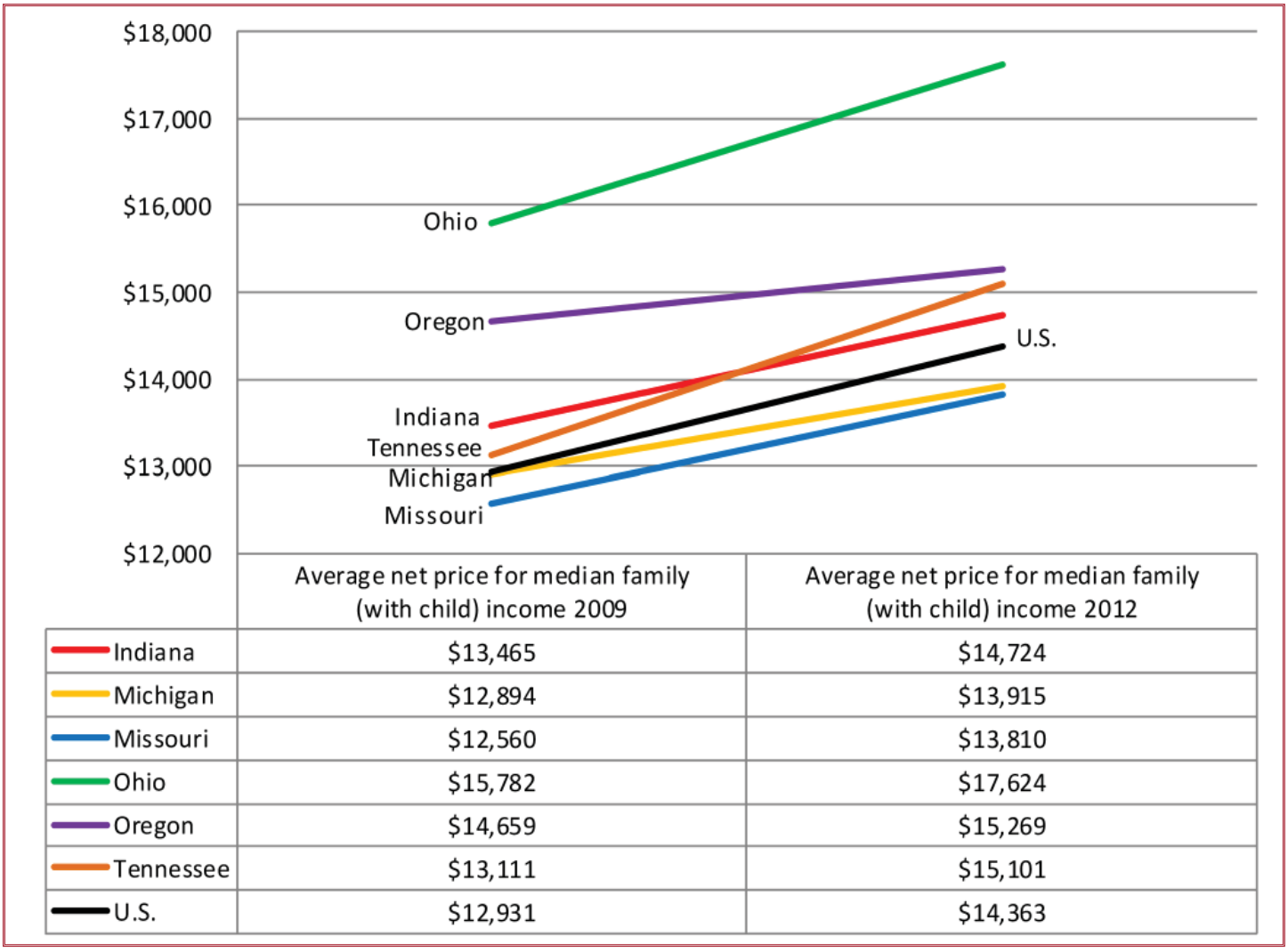
Indicators in this section include:

» Percentage of Family Income Needed to Pay for College
» Monthly Savings Needed to Pay for Four Years of College
» Average Student Loan Debt

Percentage of Family Income Needed to Pay for College

A key challenge in promoting financial access is to ensure that students and families can manage the net price of college, that is, the cost of tuition, room, and board after subtracting grant aid. Figure 14a demonstrates that the average net cost of full-time enrollment at a public four-year institution has increased over the past few years in Indiana and is above the national average.[35] Figures 14b-c show that the net cost of college as a percentage of family income has also increased over time. Moreover, Figure 14c indicates that college affordability in Indiana is highly contingent on family income. Families with median incomes in Indiana would need to allocate between 23 and 26 percent of their incomes to pay for college. In contrast, college attendance for low-income students requires between 40 and 41 percent of family income.

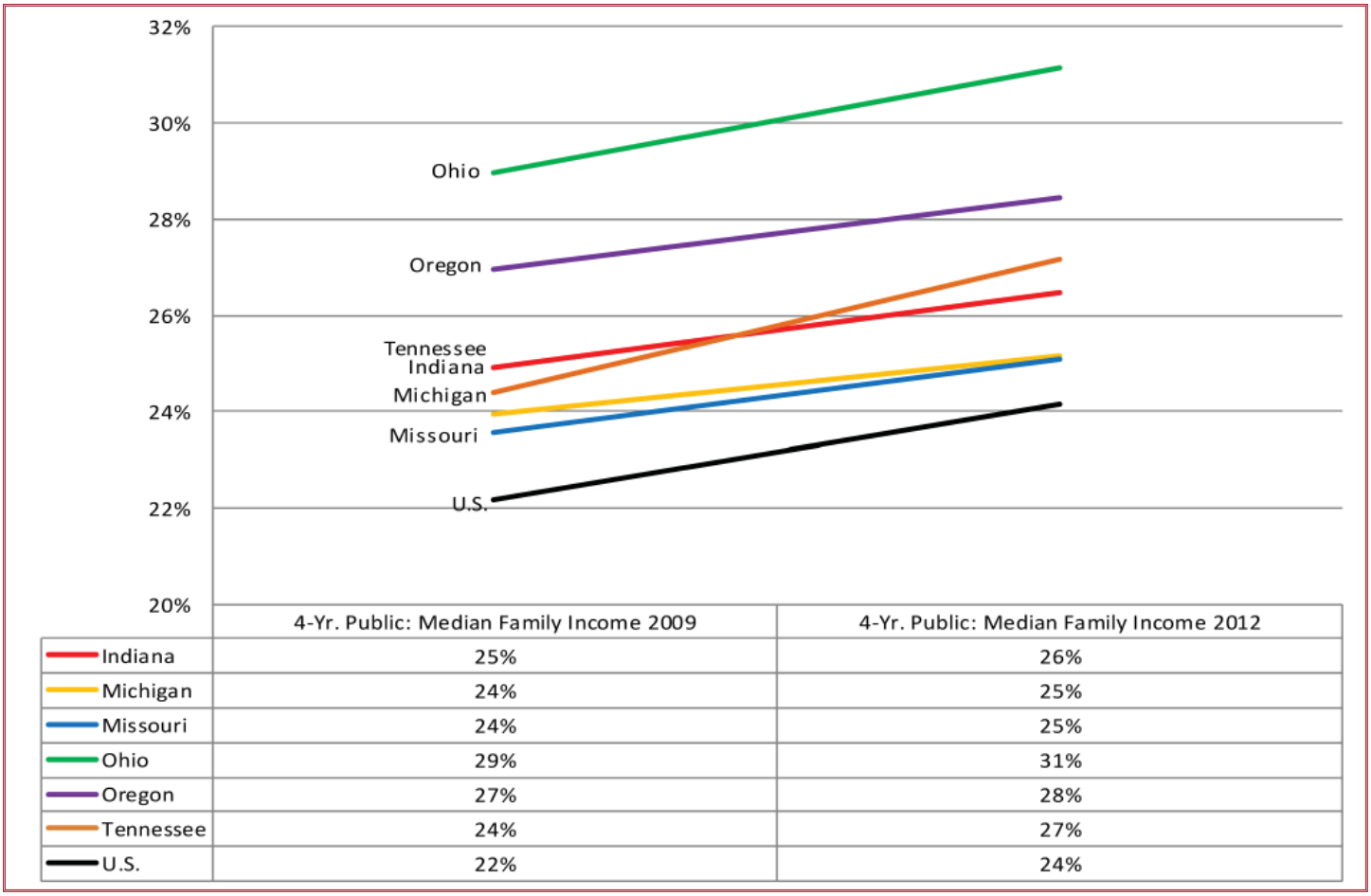
Figure 14a. Net Price of One Year of Full-Time Enrollment at a Public Four-Year Institution



	Average net price for median family (with child) income 2009	Average net price for median family (with child) income 2012
Indiana	$13,465	$14,724
Michigan	$12,894	$13,915
Missouri	$12,560	$13,810
Ohio	$15,782	$17,624
Oregon	$14,659	$15,269
Tennessee	$13,111	$15,101
U.S.	$12,931	$14,363

Source: NCES IPEDS. (2009, 2013). *Net price.*

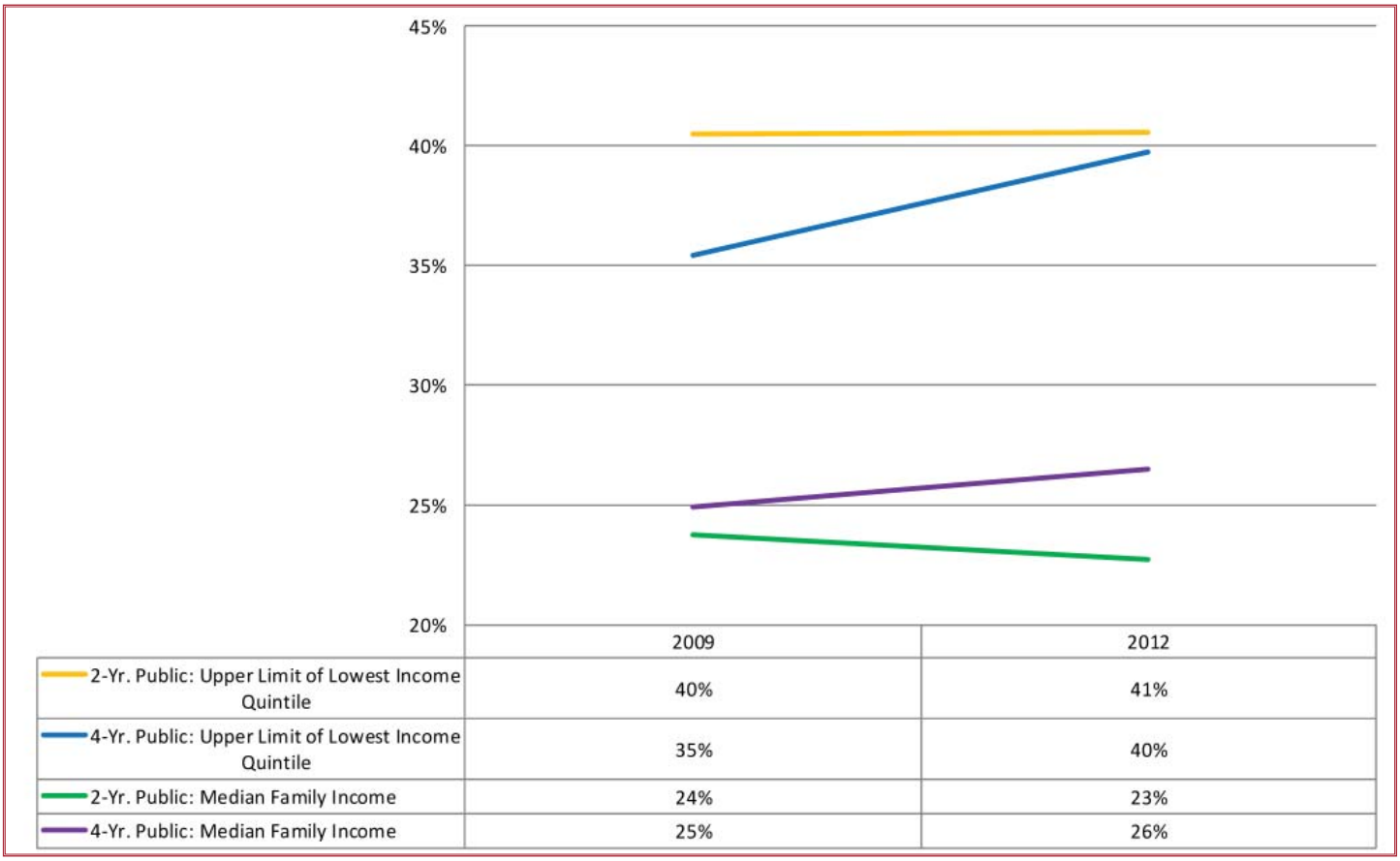
Figure 14b. Percentage of Family Income Needed to Pay for Full-Time Enrollment at a Public Four-Year College: Families with Median Incomes



	4-Yr. Public: Median Family Income 2009	4-Yr. Public: Median Family Income 2012
Indiana	25%	26%
Michigan	24%	25%
Missouri	24%	25%
Ohio	29%	31%
Oregon	27%	28%
Tennessee	24%	27%
U.S.	22%	24%

Source: NCES IPEDS. (2009, 2013). *Net price*. The Annie E. Casey Foundation Kids Count Data Center. (2009, 2012). *Median family (with child) income*.

Figure 14c. Percentage of Family Income Needed to Pay for College: Families in the Lowest Income Quintile and Families with Median Incomes



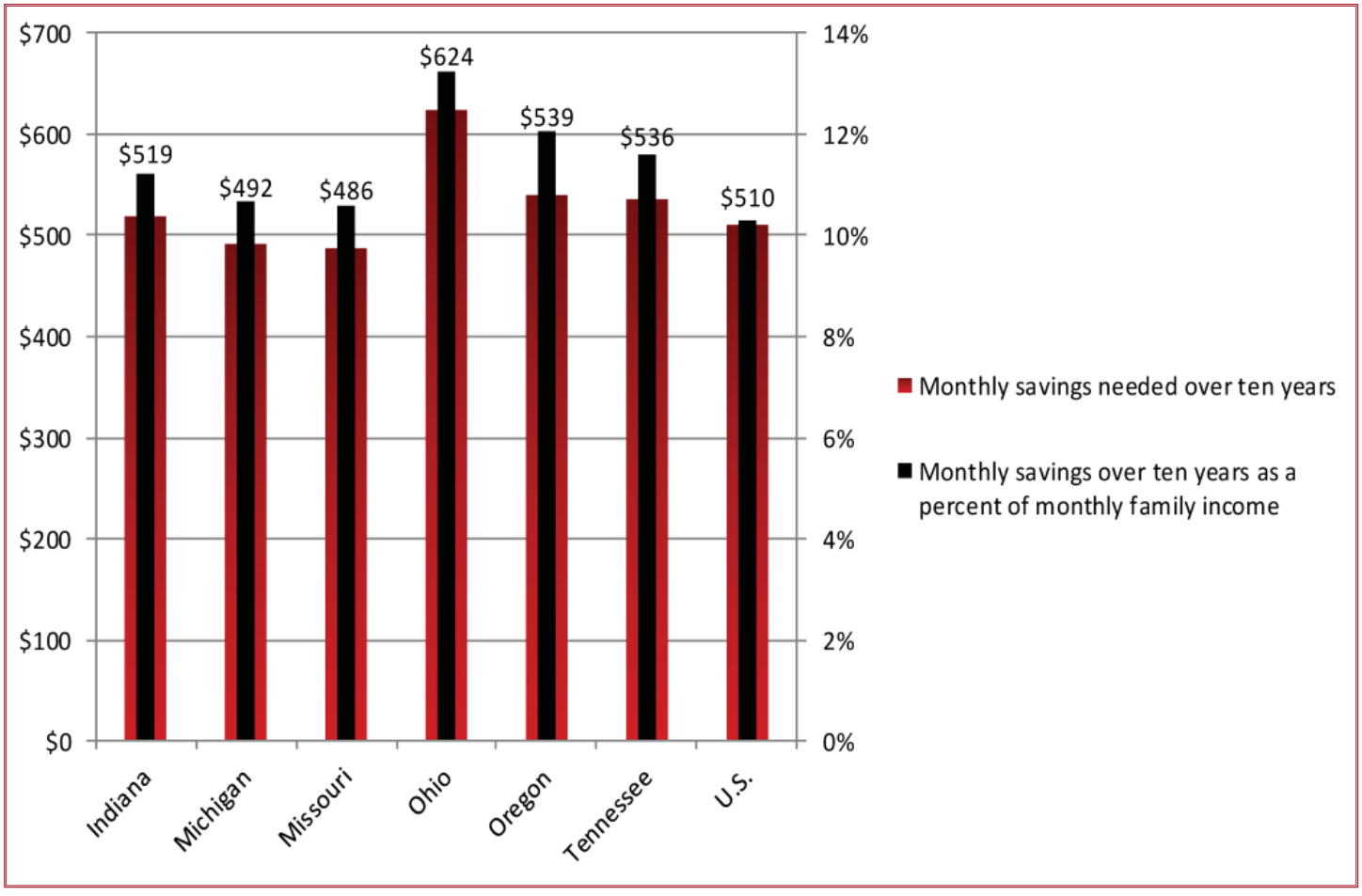
	2009	2012
2-Yr. Public: Upper Limit of Lowest Income Quintile	40%	41%
4-Yr. Public: Upper Limit of Lowest Income Quintile	35%	40%
2-Yr. Public: Median Family Income	24%	23%
4-Yr. Public: Median Family Income	25%	26%

Source: NCES IPEDS. (2009, 2013). *Net price.* U.S. Census Bureau. (2009, 2012). *Household income quintile upper limits.* The Annie E. Casey Foundation Kids Count Data Center. (2009, 2012). *Median family (with child) income.*

Monthly Savings Needed to Pay for Four Years of College

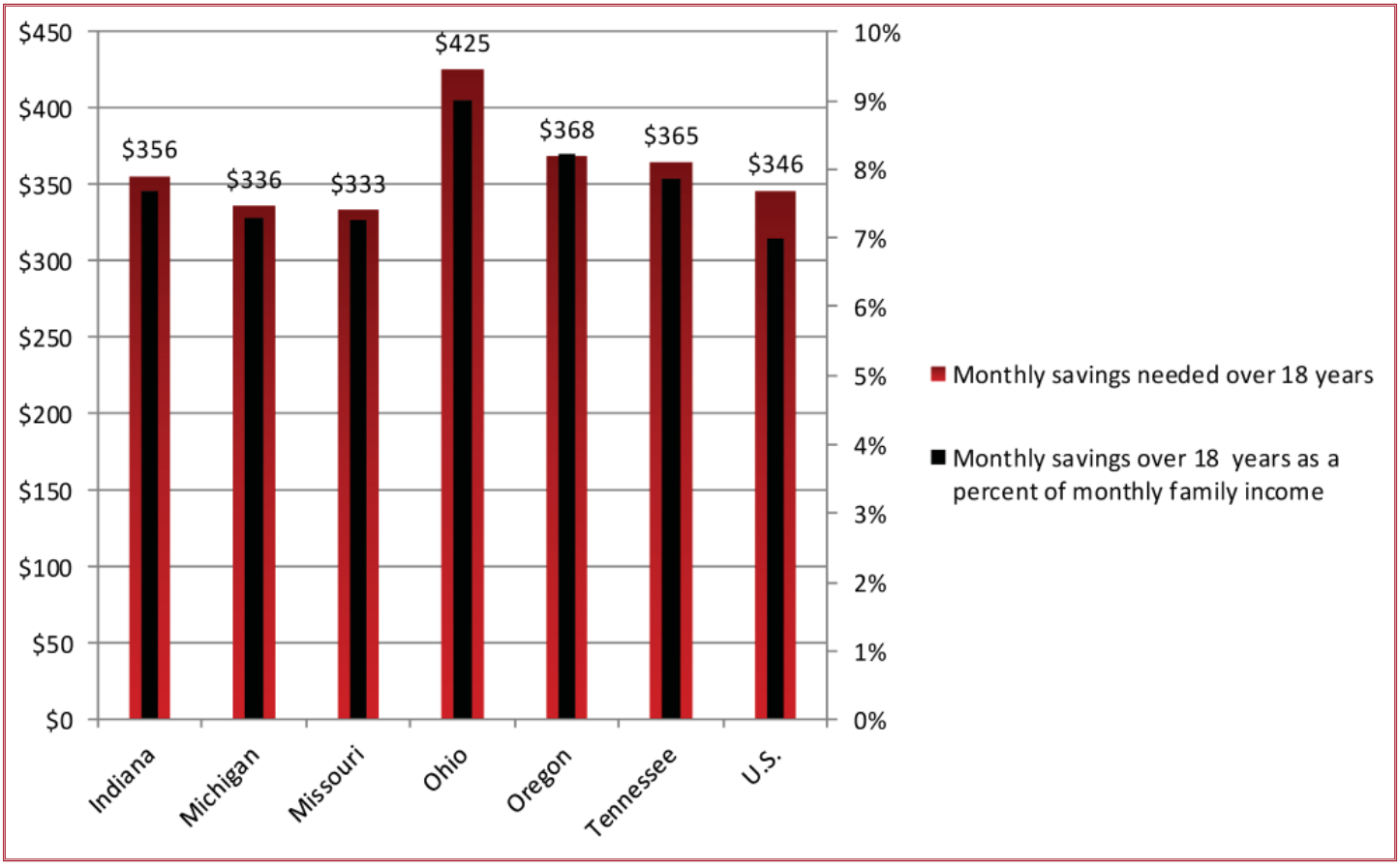
A key indicator of college affordability is whether families can save enough money over time to pay for four years of full-time enrollment at a public college. Figures 15a-b provide two investment scenarios (10-year vs. 18-year) for a 529 college savings plan that obtains a 5 percent rate of return. According to Figure 15a, a family with the median income in Indiana would need to save $519 per month or 11 percent of income over ten years to pay the net cost of enrolling at a public four-year institution for four years.[36] Under more ideal circumstances, Figure 15b shows that a family would need to save $356 per month or 8 percent of income over 18 years. Notably, these amounts of monthly savings are much higher than the current national average college savings rate, which is $195 per month for a child aged 13-17 in a middle-income family.[37]

Figure 15a. Monthly Savings Over 10 Years Needed for Families with Median Household Incomes to Pay the Net Cost of Four Years of Full-Time Enrollment at a Public Four-Year Institution



Source: Integrated Postsecondary Education Data System (2013). *Tuition.* TIAA-CREF. (2013). *529 college savings tool.*

Figure 15b. Monthly Savings Over 18 Years Needed for Families with Median Household Incomes to Pay the Net Cost of Four Years of Full-Time Enrollment at a Public Four-Year Institution

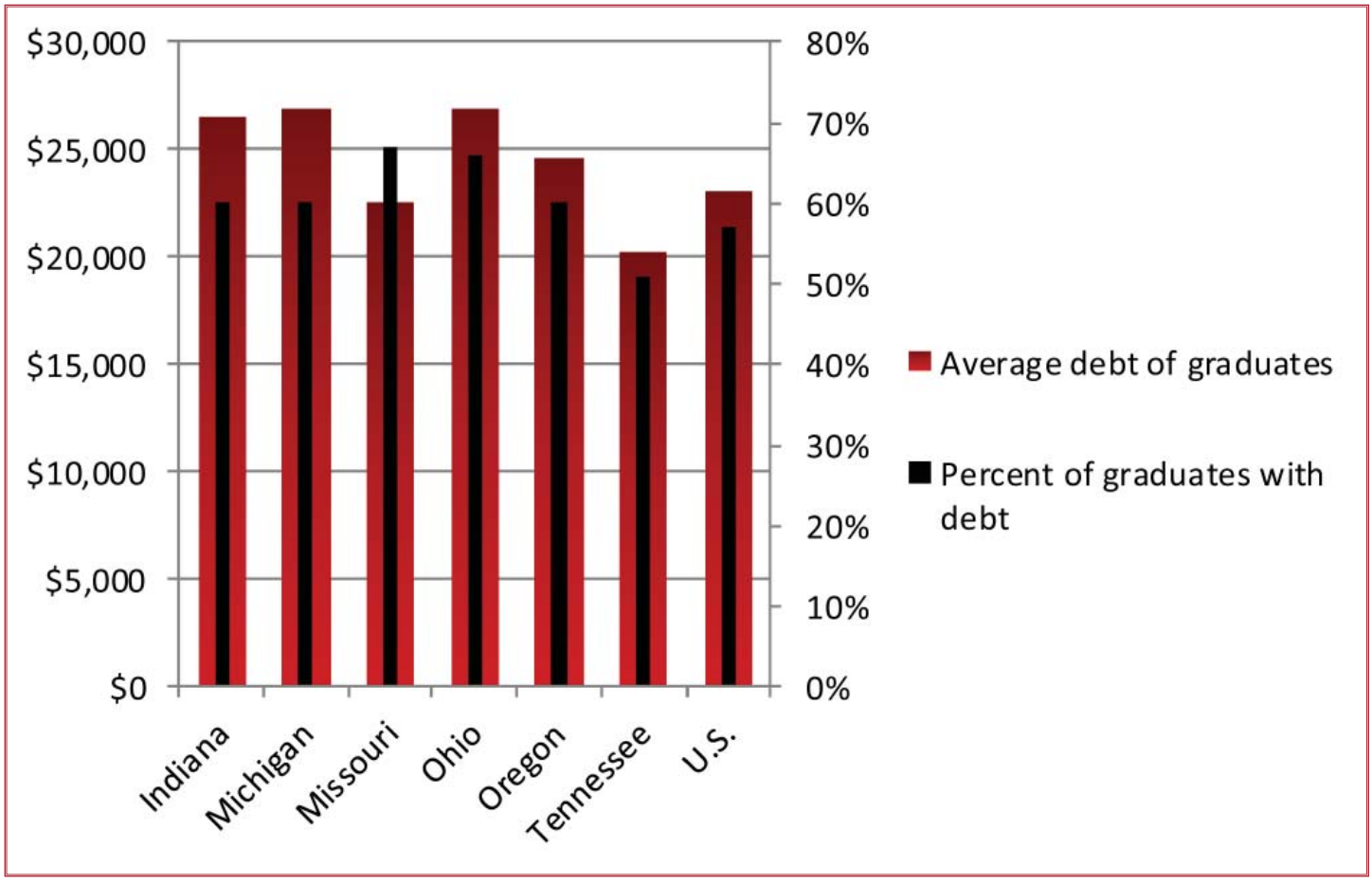


Source: Integrated Postsecondary Education Data System (2013). *Tuition.* TIAA-CREF. (2013). *529 college savings tool.*

Average Student Loan Debt

Students are increasingly using loans to finance their college education. Nationally, individuals in the graduating class of 2011 had an average student loan debt of $26,600 (not counting credit card debt or borrowing from family members).[38] Approximately 60 percent of graduates of public four-year institutions in Indiana had some student loan debt (i.e., institutional, state, federal, or private loans), and the average debt of $26,488 was higher than the average debt of college graduates in most comparison states (see Figure 16). Assuming a beginning salary of $41,701, the average beginning salary for the graduating class of 2011,[39] the typical graduate from a public four-year institution in Indiana will need to allocate 9 percent of his or her income to loan repayments.[40] This debt burden can be contrasted with what has been classified as "unmanageable debt," which requires repayment in excess of 8 percent of income.[41]

Figure 16. Educational Loan Debt Among Graduates of Public Four-Year Institutions



Source: Institute for College Access and Success. (2012). *College InSight database: 2010-11.*

Effectiveness and Efficiency of Postsecondary Institutions

A fundamental objective in many state accountability frameworks is to determine whether the institutional conditions of colleges and universities are conducive to student success. The student outcomes most commonly examined in this regard include levels of student engagement, student learning, degree completion, and employment. However, the availability of relevant data for interstate comparison is quite limited. Institutional effectiveness and efficiency are variously examined here as the diffusion of high-impact educational experiences, the degree to which institutions promote timely degree completion, and the relative level of educational expenditures.

Indicators in this section include:

» Diffusion of High-Impact Educational Experiences: Study Abroad
» Promotion of Timely Degree Completion
» Education and Related Expenditures for Total Degree Production

Diffusion of High-Impact Educational Experiences: Study Abroad

A useful measure of the quality of undergraduate education is the extent to which students are exposed to so-called high-impact experiences, including first-year seminars, learning communities, collaborative learning, undergraduate research, service-learning, internships, capstone projects, and study abroad. Such activities tend to exert a rather strong impact on a variety of student outcomes by demanding a high degree of student effort; promoting faculty and peer interactions; exposing students to diverse people and ideas; inciting feedback from others; and applying and integrating knowledge.[42] This report begins to examine the diffusion of high-impact practices by focusing on undergraduate participation in study abroad, an experience that is arguably crucial in preparing students to be internationally competitive and globally engaged.[43] As indicated in Table 5, approximately 4 students studied abroad in Indiana for every 100 students enrolled full-time, which is above the national average.

Table 5. Undergraduate Study Abroad Participants per 100 Students Enrolled Full-Time at Four-Year Colleges and Universities

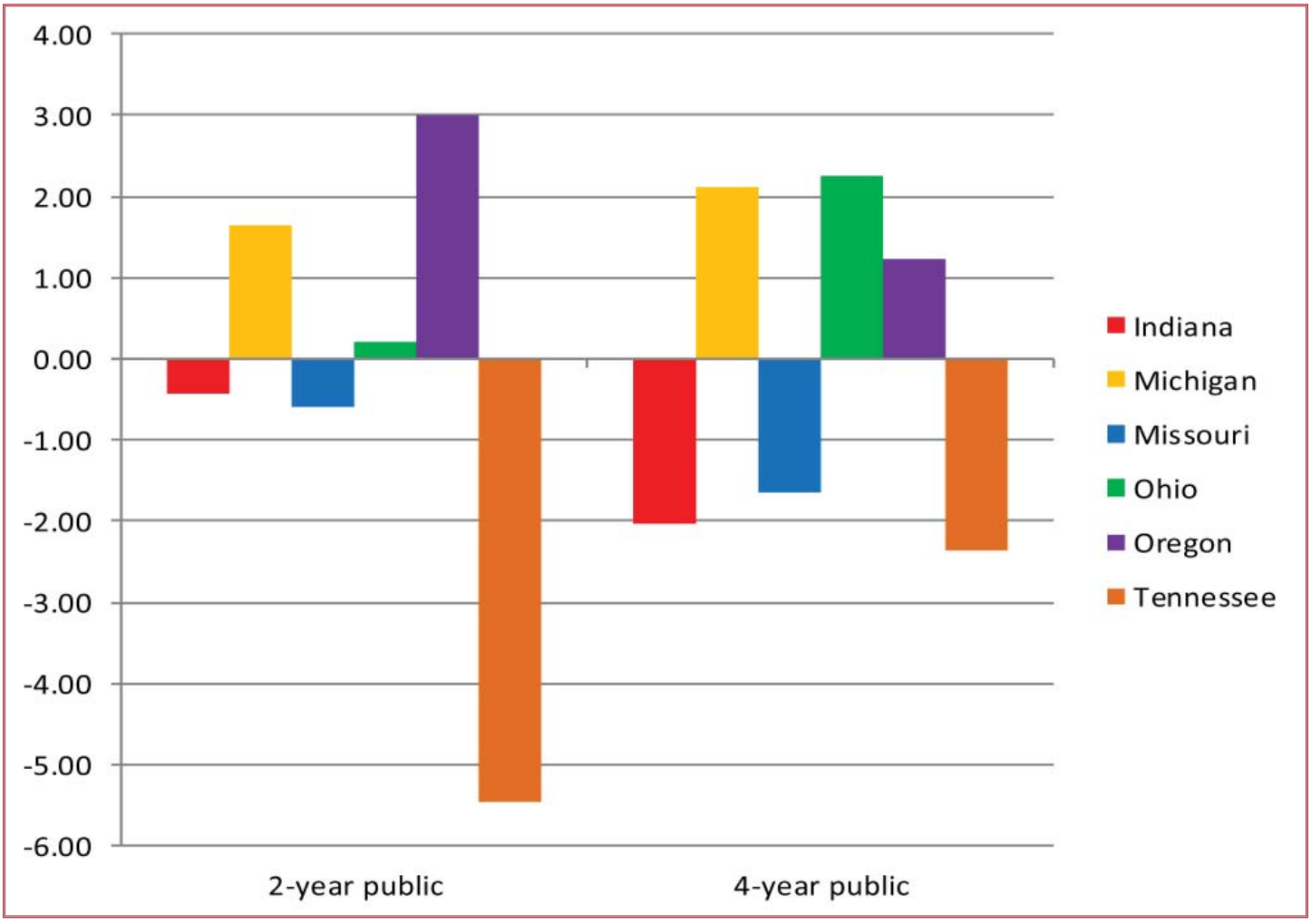
MHEC State	Number of study abroad participants per 100 full-time students enrolled
Illinois	3
Indiana	4
Iowa	5
Kansas	3
Michigan	3
Minnesota	6
Missouri	3
Nebraska	3
North Dakota	1
Ohio	3
South Dakota	2
Wisconsin	4
U.S.	3

Source: Integrated Postsecondary Education Data System (2013). *Enrollment: 2011*. Open Doors Data (2013). *Fact sheets by states: 2011-12 data.*

Promotion of Timely Degree Completion

Graduation rates are frequently used to assess the degree to which institutions promote timely degree completion. However, numerous factors that frequently lie beyond institutional control strongly influence degree completion, such as the socioeconomic status and academic preparedness of students. The indicator presented here thus estimates institutional effectiveness as the difference between actual graduation rates and the rates that we would predict from several structural, demographic, and contextual factors.[44] Values below -1 indicate limited institutional effectiveness, and values above 1 indicate a high or very high level of effectiveness. Figure 17 indicates that the institutional effectiveness of public two-year institutions in Indiana is moderate, but public four-year institutions exhibit a more limited impact on timely degree completion.

Figure 17. Institutional Effectiveness Scores based on Graduation Rates

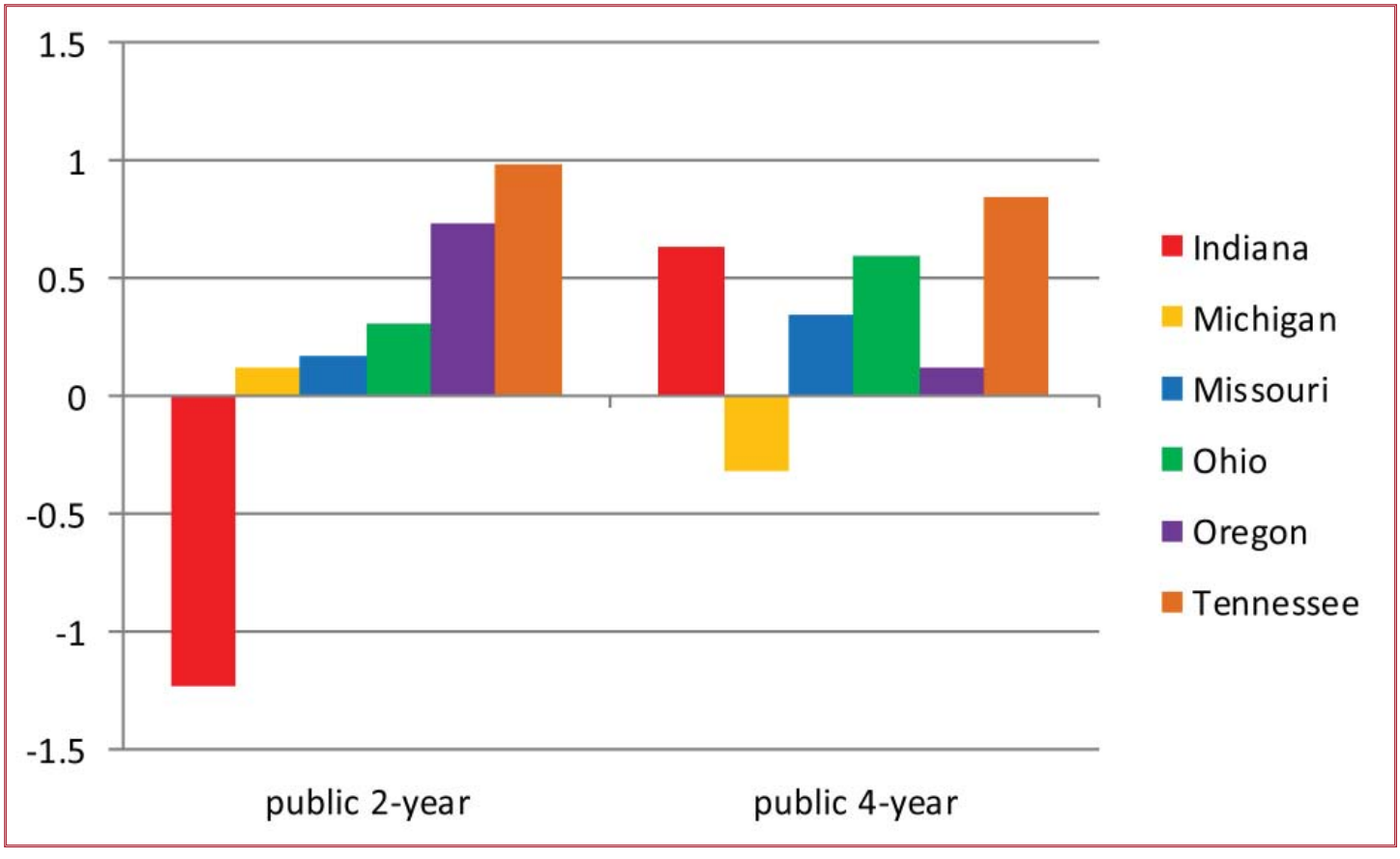


Source: Horn, A. S. (2014). *Effectiveness and efficiency in promoting timely degree completion: A performance rating system for the states.* Minneapolis, MN: Midwestern Higher Education Compact.

Education and Related Expenditures for Total Degree Production

Institutional efficiency can be partly defined by the relationship between educational expenditures and degree production, particularly the minimization of expenditures for a specific level of degree production without sacrificing quality.[45] Although a simple cost-per-degree indicator is frequently used to assess efficiency, education and related expenditures can vary tremendously according to the types of degrees produced (e.g., certificates, bachelor's degrees, doctoral degrees), the disciplines represented (e.g., English, engineering), and other factors such as the student-faculty ratio. The indicator in this report thus estimates whether educational expenditures are lower or higher than expected, given the institution's degree production profile as well as structural, demographic, and contextual attributes. Values below -.25 indicate that average educational expenditures are lower than expected, which may reflect a high level of institutional efficiency. Values above .25 indicate that educational expenditures are higher than expected, which may reflect either inefficiency or unmeasured investments associated with educational quality. Figure 18 indicates that the educational expenditures of public two-year institutions are much lower than the expected level in Indiana, but the expenditures of public four-year institutions are higher than expected.

Figure 18. Educational Expenditures Index Scores



Source: Horn, A. S. (2014). *Effectiveness and efficiency in promoting timely degree completion: A performance rating system for the states.* Minneapolis, MN: Midwestern Higher Education Compact.

POLICY INSTRUMENTS

Investments

Substantial financial investments are required to create and sustain a PK-16 educational system that meets state needs for economic and social development. State funding of K-12 education constituted approximately 20 percent of state expenditures in 2010 and forms a major contribution to the total funding for instruction (61 percent), administration (11 percent), student and staff support (10 percent), operations and management (10 percent), transportation and food services (4 percent), among other functions.[46] States allocated 10 percent of their budgets to higher education in 2010,[47] including general institutional operating expenses (78 percent); research, agricultural extension, and medical education (12 percent); and student financial aid (10 percent).[48] Various factors influence funding for education within any particular state, including the tax base and structure, enrollment, and state expenditures for other public services. Moreover, states differ in the strategies used to ensure that postsecondary education remains affordable for the citizenry. For instance, some concentrate funds into direct institutional appropriations, while others may focus more on need-based student aid.

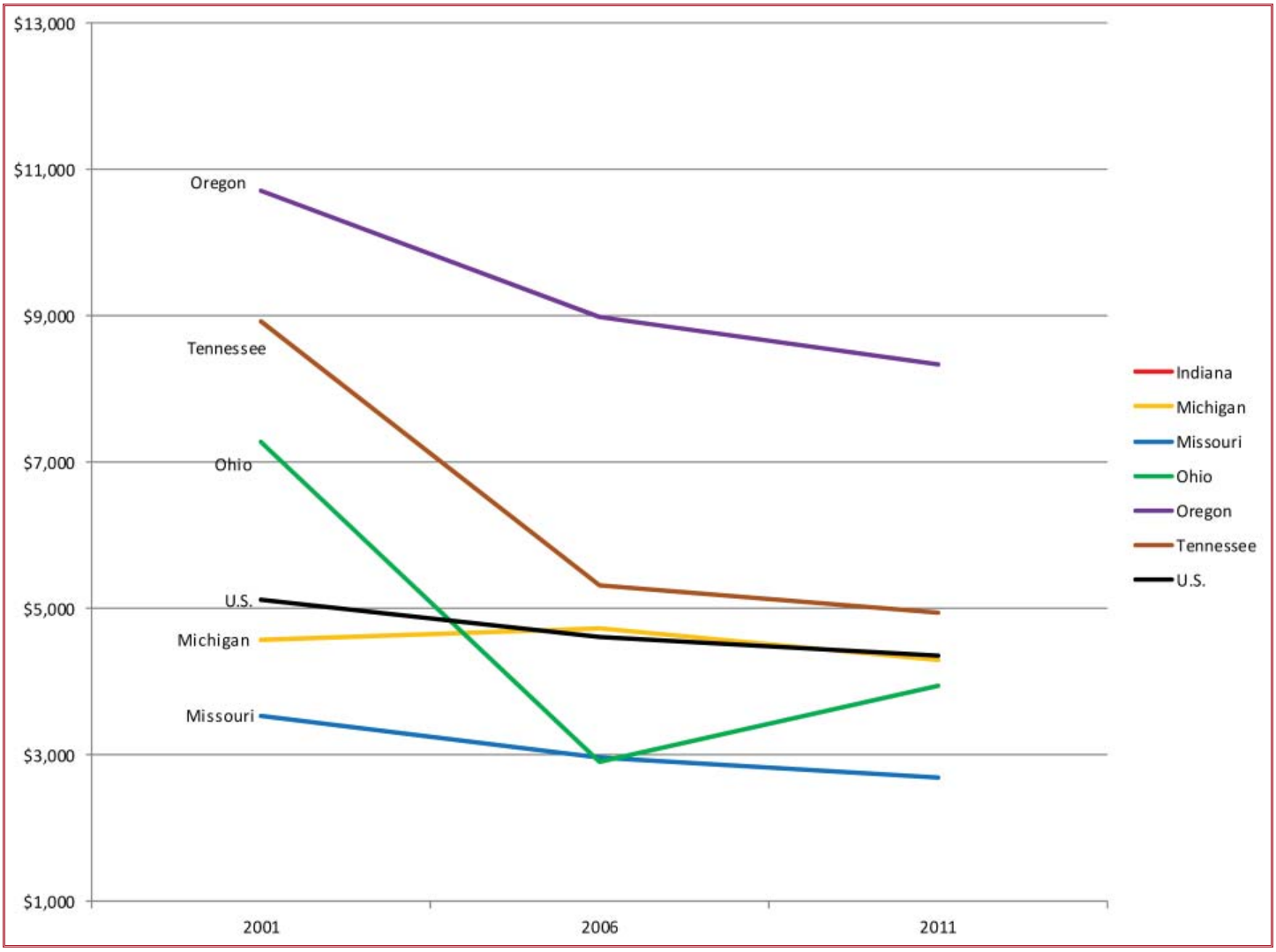
Indicators in this section include:

» Pre-K Education Expenditures per Student
» K-12 Education Expenditures per Student
» Overall Public Funding for Higher Education
» State Appropriations for Postsecondary Institutions
» Need-Based Grant Aid Allocations

Pre-K Education Expenditures per Student

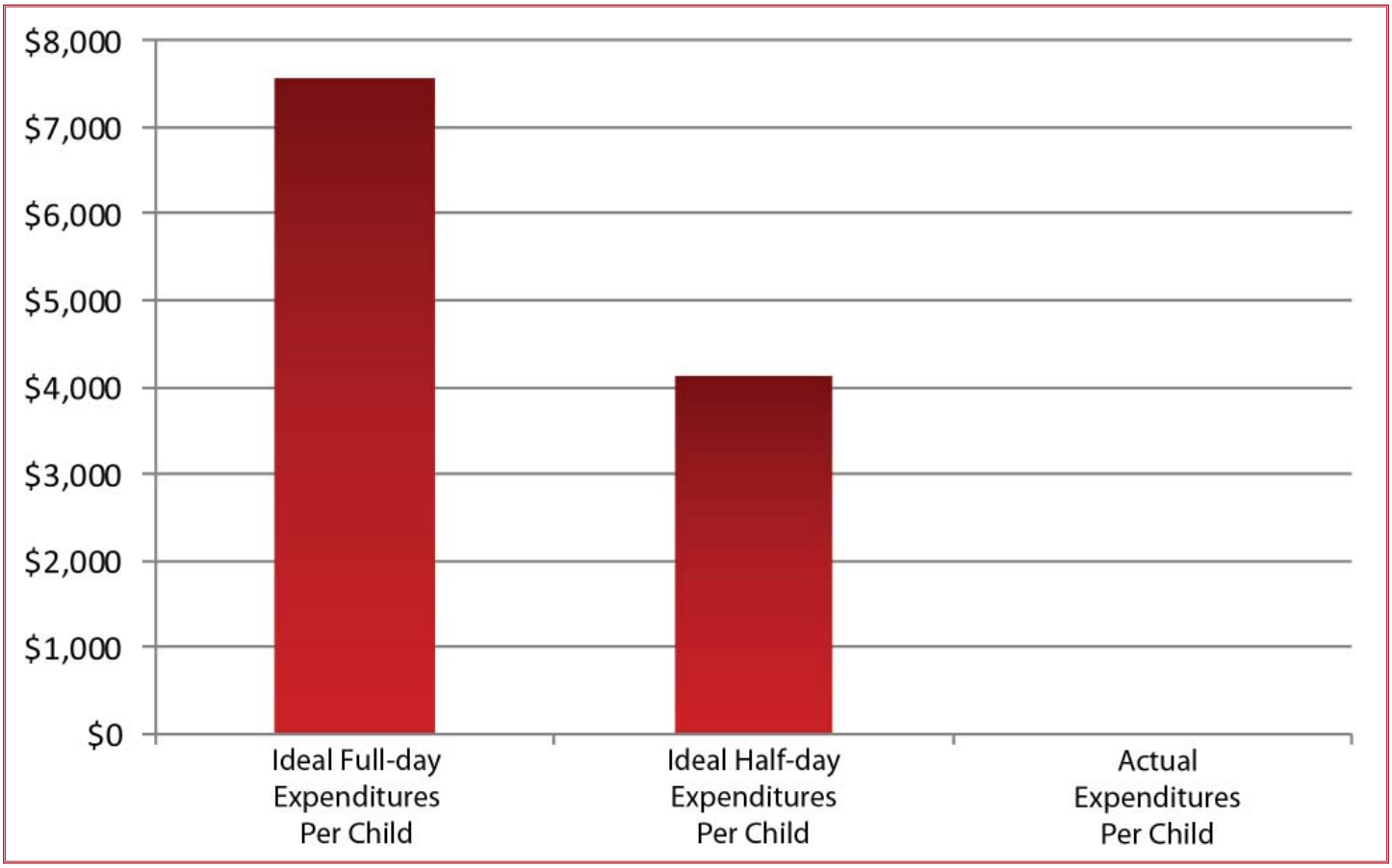
Nationally, pre-K expenditures per child declined from $5,020 in 2002 to $3,841 in 2012.[49] However, Indiana is one of 11 states in the nation that does not currently have a state pre-K program. In order to assess the adequacy of current investments in pre-K programs, actual expenditures should be compared with the ideal expenditures needed to meet quality standards for pre-K programs (see Figure 19b).[50]

Figure 19a. Pre-K Expenditures per Child Enrolled (adjusted for inflation and regional cost differences)



Source: National Institute for Early Education Research. (2012). *The state of preschool 2012.*

Figure 19b. Ideal vs. Actual Pre-K Expenditures per Child

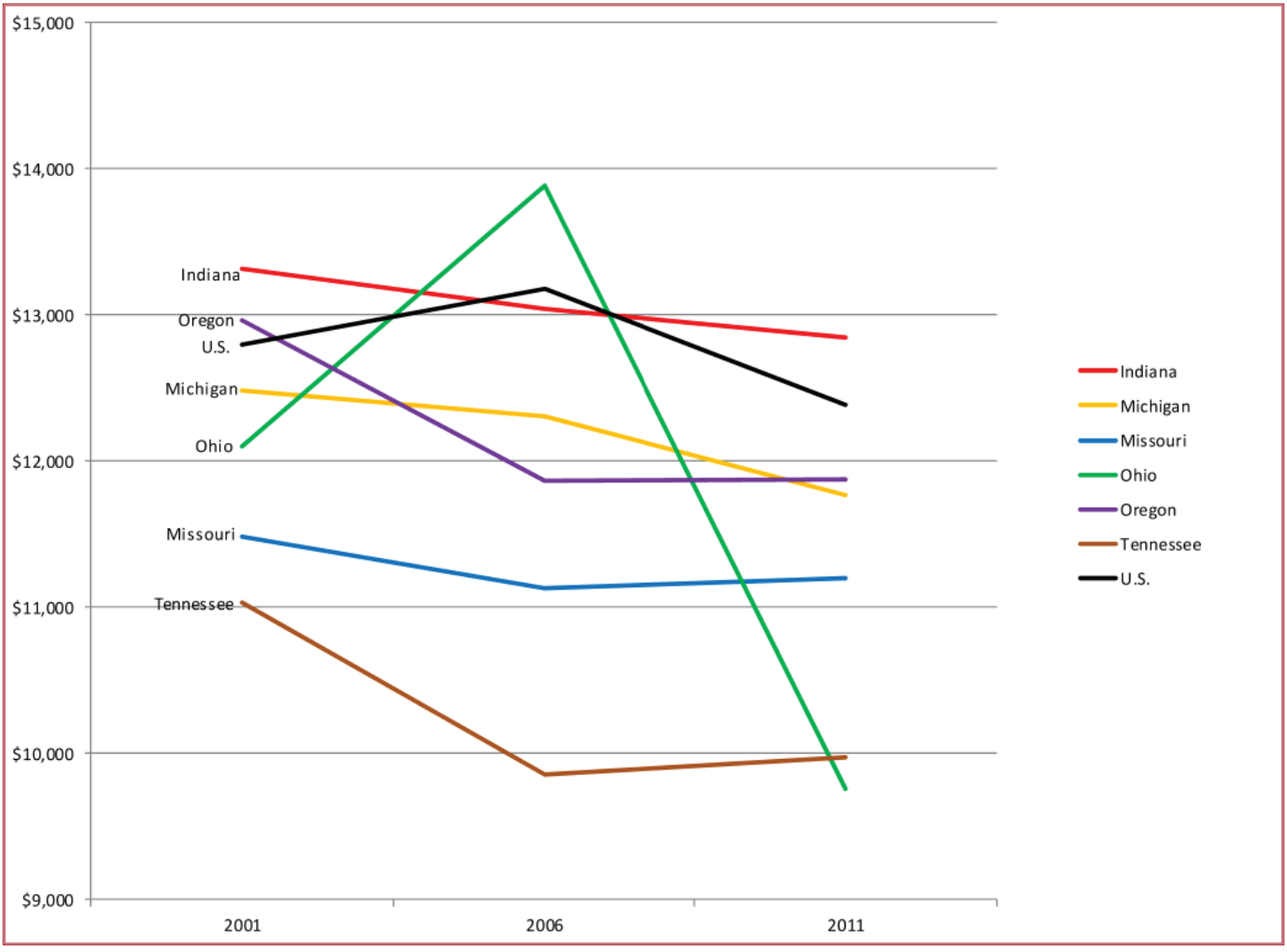


Source: National Institute for Early Education Research. (2012). *Cost estimates per child.*

K-12 Education Expenditures per Student

Nationally, total expenditures per student increased by 46 percent between 1989 and 2009, which was partly due to increased spending on school debt interest (149 percent increase), capital outlays (117 percent increase), and employee benefits (75 percent increase).[51] As depicted in Figure 20, K-12 expenditures in Indiana have fallen over the past five years. Moreover, Table 6 provides evidence of inequity in Indiana's system of K-12 finance. The McLoone Index demonstrates that current spending is equivalent to 90 percent of the total amount that would be needed to provide median-level educational expenditures for all students.[52] Similarly, the restricted range reveals a large difference in per student spending between the districts in the 5th and 95th percentiles.

Figure 20. State K-12 Expenditures per Child Enrolled (adjusted for inflation and regional cost differences)



Source: National Institute for Early Education Research. (2012). *The state of preschool 2012.*

Table 6. Equity in K-12 Finance

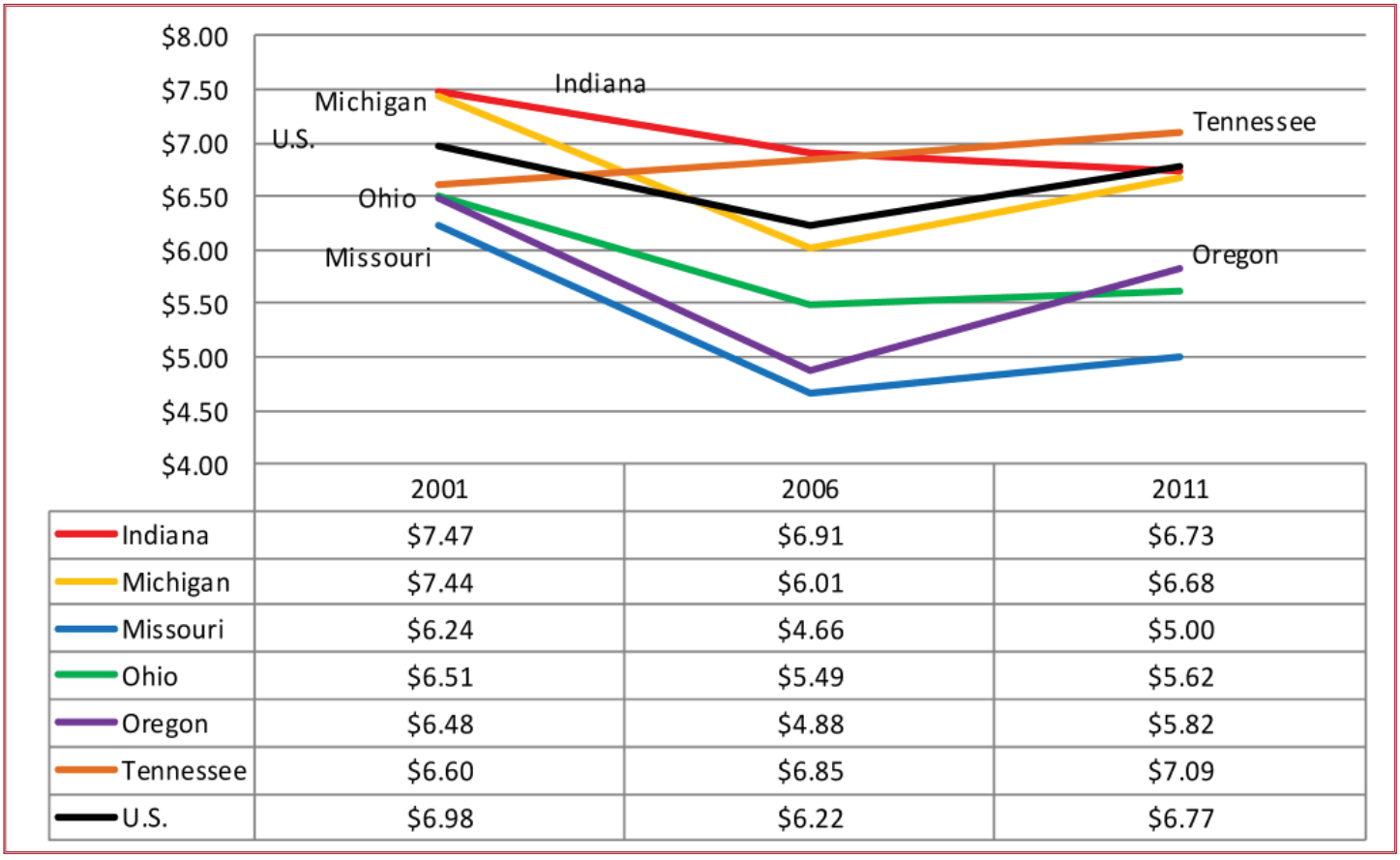
MHEC State	McLoone Index – Actual spending as percent of amount needed to bring all students to median level (2010)*	Restricted Range – Difference in per-pupil spending levels at the 95th and 5th percentiles (2010)*
Illinois	89% (39)	$6,111 (45)
Indiana	90% (34)	$3,973 (27)
Iowa	93% (8)	$3,125 (13)
Kansas	89% (38)	$3,784 (23)
Michigan	91% (22)	$3,940 (26)
Minnesota	90% (29)	$3,641 (20)
Missouri	91% (17)	$4,231 (30)
Nebraska	94% (6)	$4,737 (38)
North Dakota	92% (12)	$4,061 (28)
Ohio	90% (30)	$4,877 (40)
South Dakota	90% (13)	$4,469 (35)
Wisconsin	92% (10)	$2,883 (10)

Source: Education Counts Research Center (2013). *Indicators.* *State's national rank appears in parentheses.

Overall Public Funding for Higher Education

In the midst of competing budgetary demands, state policymakers are confronted with the challenging task of securing revenue to fund the postsecondary system. As indicated in Figure 21a, fiscal support per $1,000 of personal income in Indiana has decreased over the past decade and is now below the national average. The percentage of total revenue allocated to higher education in Indiana has also decreased since 2000 (see Figure 21b).

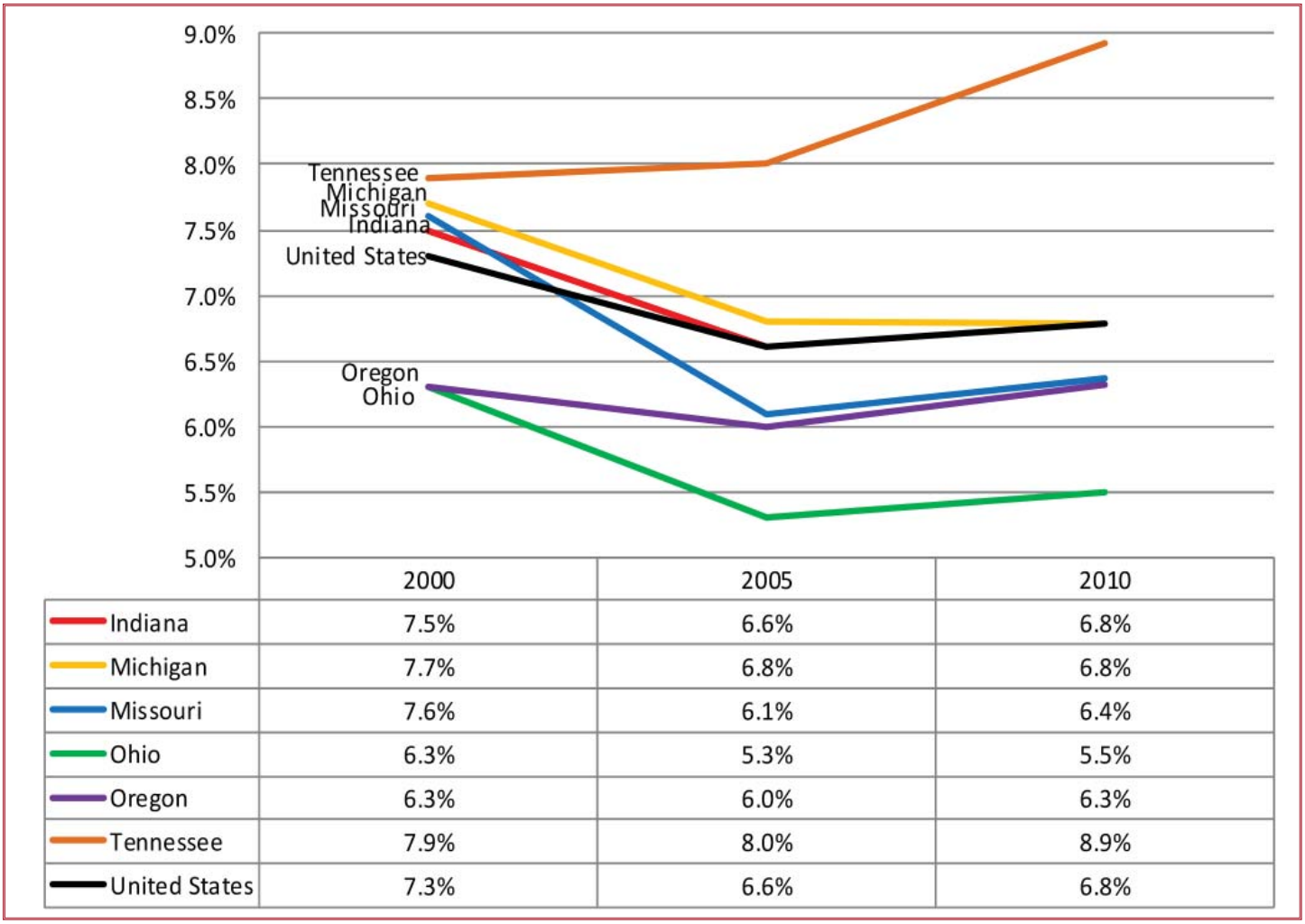
Figure 21a. State Fiscal Support for Higher Education Per $1,000 of Personal Income



	2001	2006	2011
Indiana	$7.47	$6.91	$6.73
Michigan	$7.44	$6.01	$6.68
Missouri	$6.24	$4.66	$5.00
Ohio	$6.51	$5.49	$5.62
Oregon	$6.48	$4.88	$5.82
Tennessee	$6.60	$6.85	$7.09
U.S.	$6.98	$6.22	$6.77

Source: SHEEO. (2013). *State higher education finance: 2011*. National Center for Higher Education Management Systems. (2013). *State and local support for higher education operating expenses per $1,000 of personal income: 2001, 2006.*

Figure 21b. State Fiscal Support for Higher Education as a Percentage of Total State Revenue



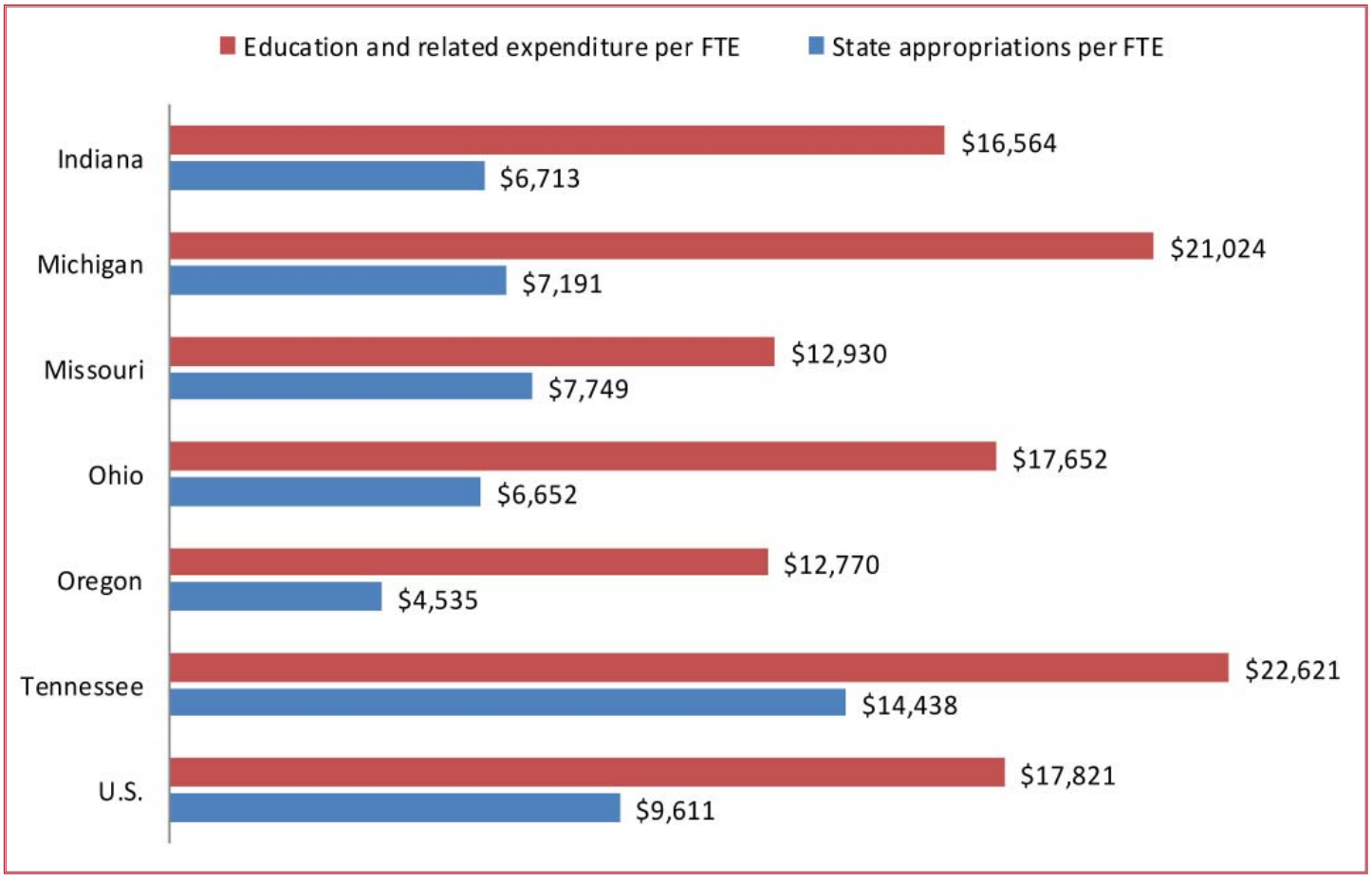
	2000	2005	2010
Indiana	7.5%	6.6%	6.8%
Michigan	7.7%	6.8%	6.8%
Missouri	7.6%	6.1%	6.4%
Ohio	6.3%	5.3%	5.5%
Oregon	6.3%	6.0%	6.3%
Tennessee	7.9%	8.0%	8.9%
United States	7.3%	6.6%	6.8%

Source: SHEEO. (2013). *State higher education finance.* National Center for Higher Education Management Systems. (2013). *State higher education priority.*

State Appropriations for Postsecondary Institutions

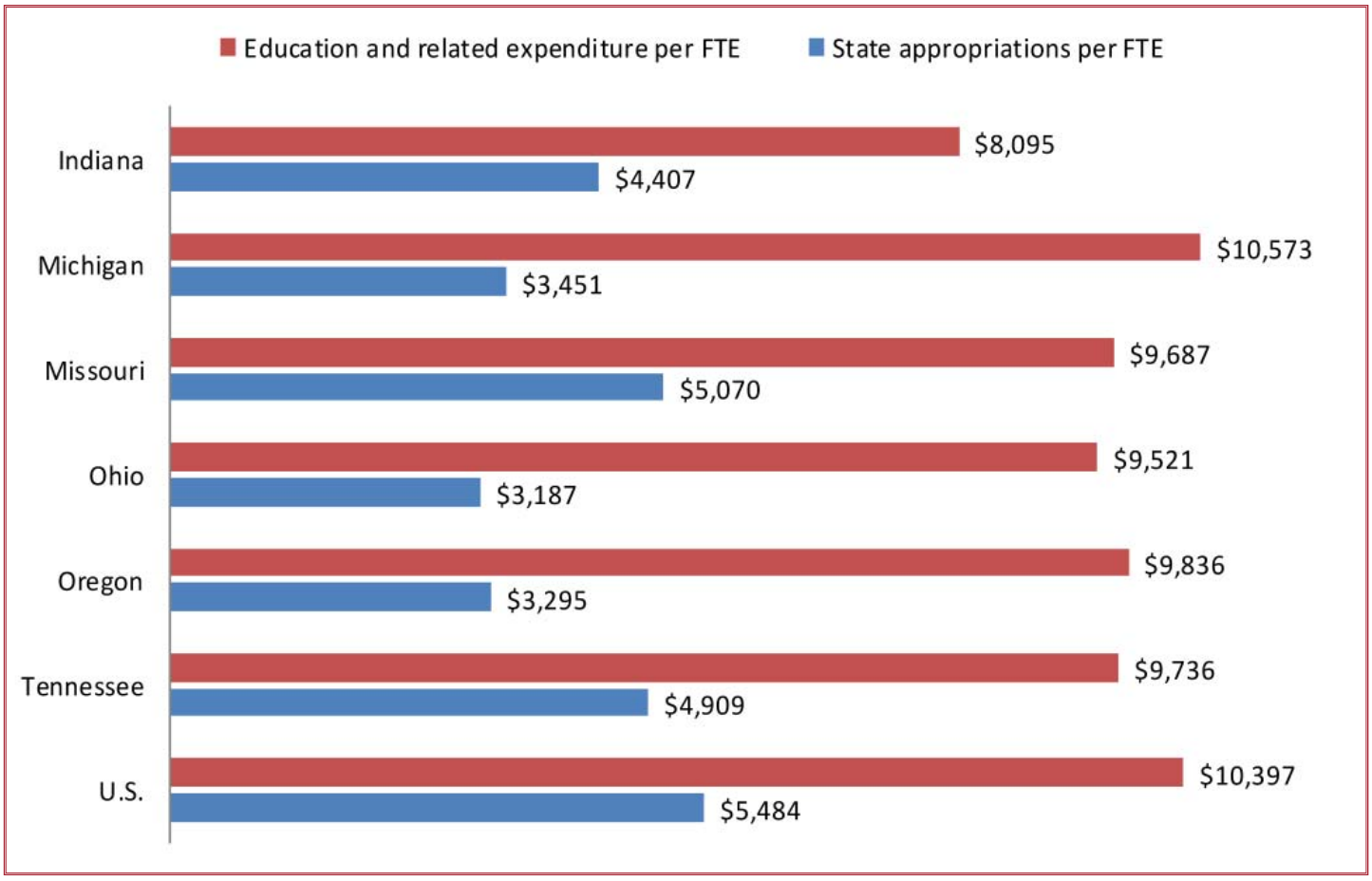
The direct allocation of state funds to postsecondary institutions partly determines the student's share of the cost of higher education. Figures 22a-c demonstrate the degree to which state appropriations approximate education and related expenditures (i.e., the total amount spent on instruction, student services, and academic support). The average amount of state appropriations constitutes less than half of the average education and related expenditures at public research universities (41 percent), master's universities (54 percent), and two-year colleges (48 percent).[53]

Figure 22a. State Appropriations as a Proportion of Educational Expenditures Per FTE Student: Public Research Universities (Very High Research Activity)



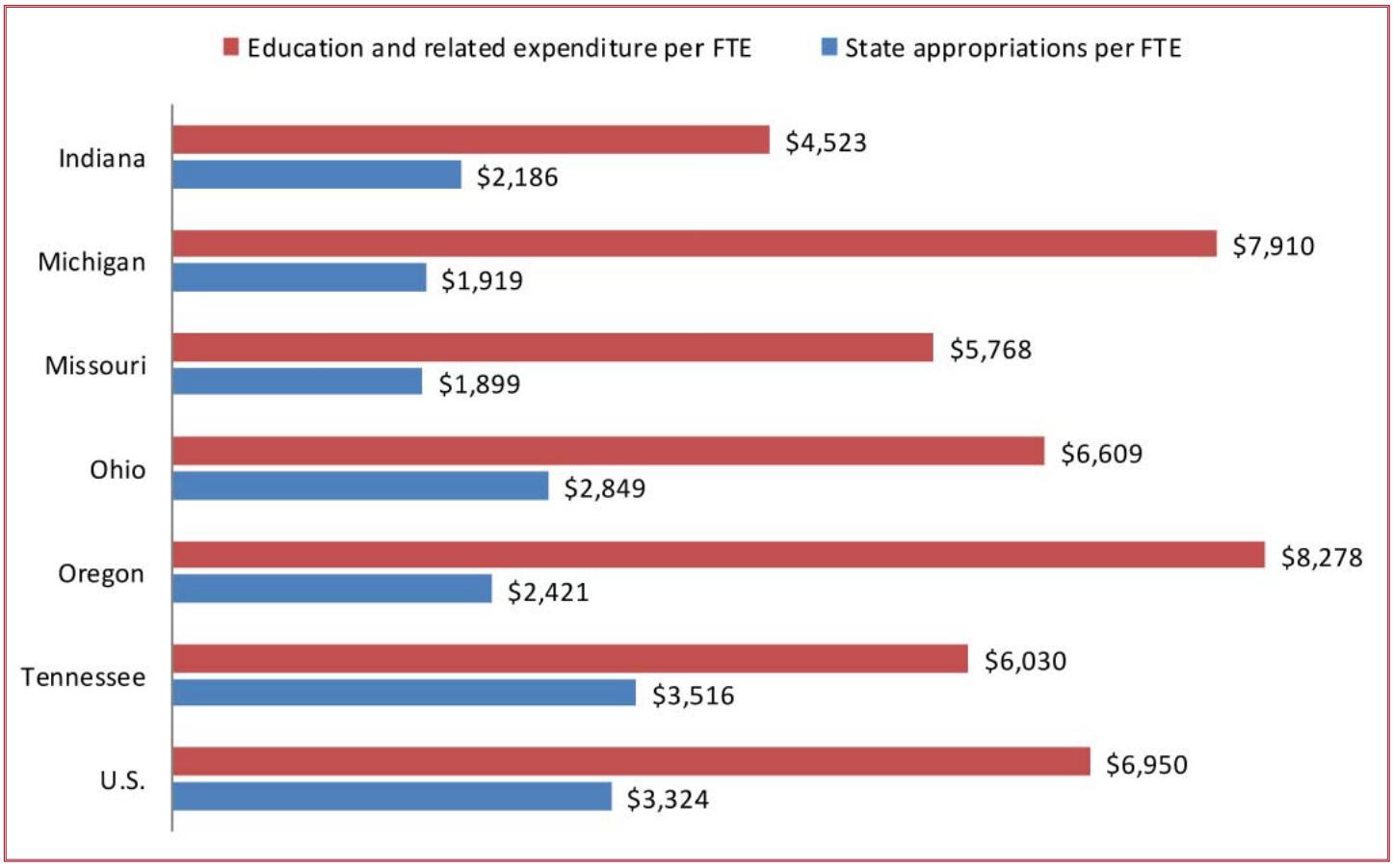
Source: NCES IPEDS. (2013). *Finance: 2011*.

Figure 22b. State Appropriations as a Proportion of Educational Expenditures Per FTE Student: Public Master's Universities (Larger Programs)



Source: NCES IPEDS. (2013). *Finance: 2011*.

Figure 22c. State Appropriations as a Proportion of Educational Expenditures Per FTE Student: Public Two-Year Colleges

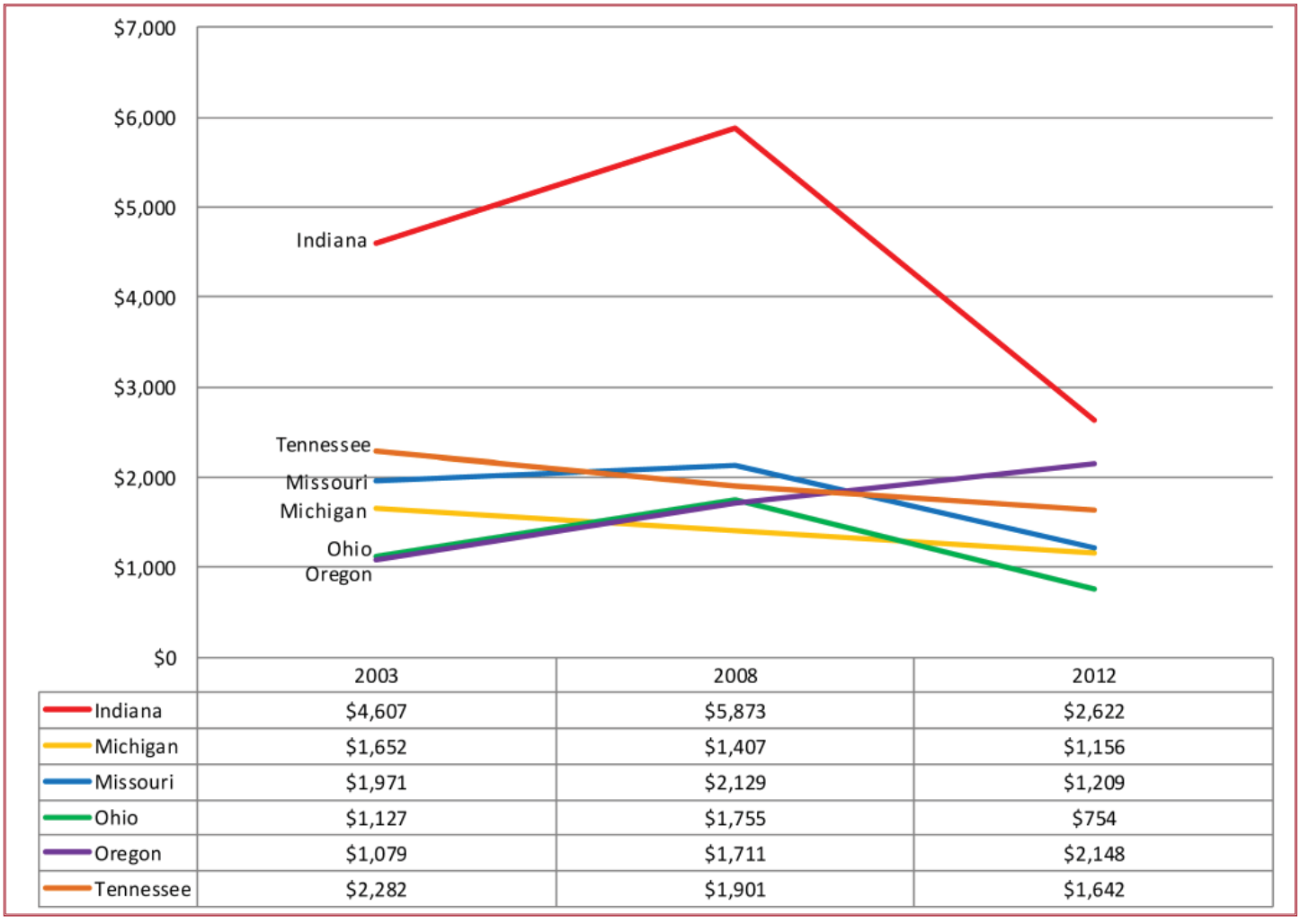


Source: NCES IPEDS. (2013). *Finance: 2011.*

Need-Based Grant Aid Allocations

State need-based student aid programs can play a significant role in reducing the net cost of college for families of modest means. Figure 23a indicates that the average state need-based grant award has decreased over time but remains higher in Indiana than in all peer states. State commitments to need-based aid programs can also be depicted as a proportion of federal need-based aid. According to Figure 23b, Indiana's commitment to need-based aid has declined from 2001 to 2011, though it remained constant from 2009 to 2011.

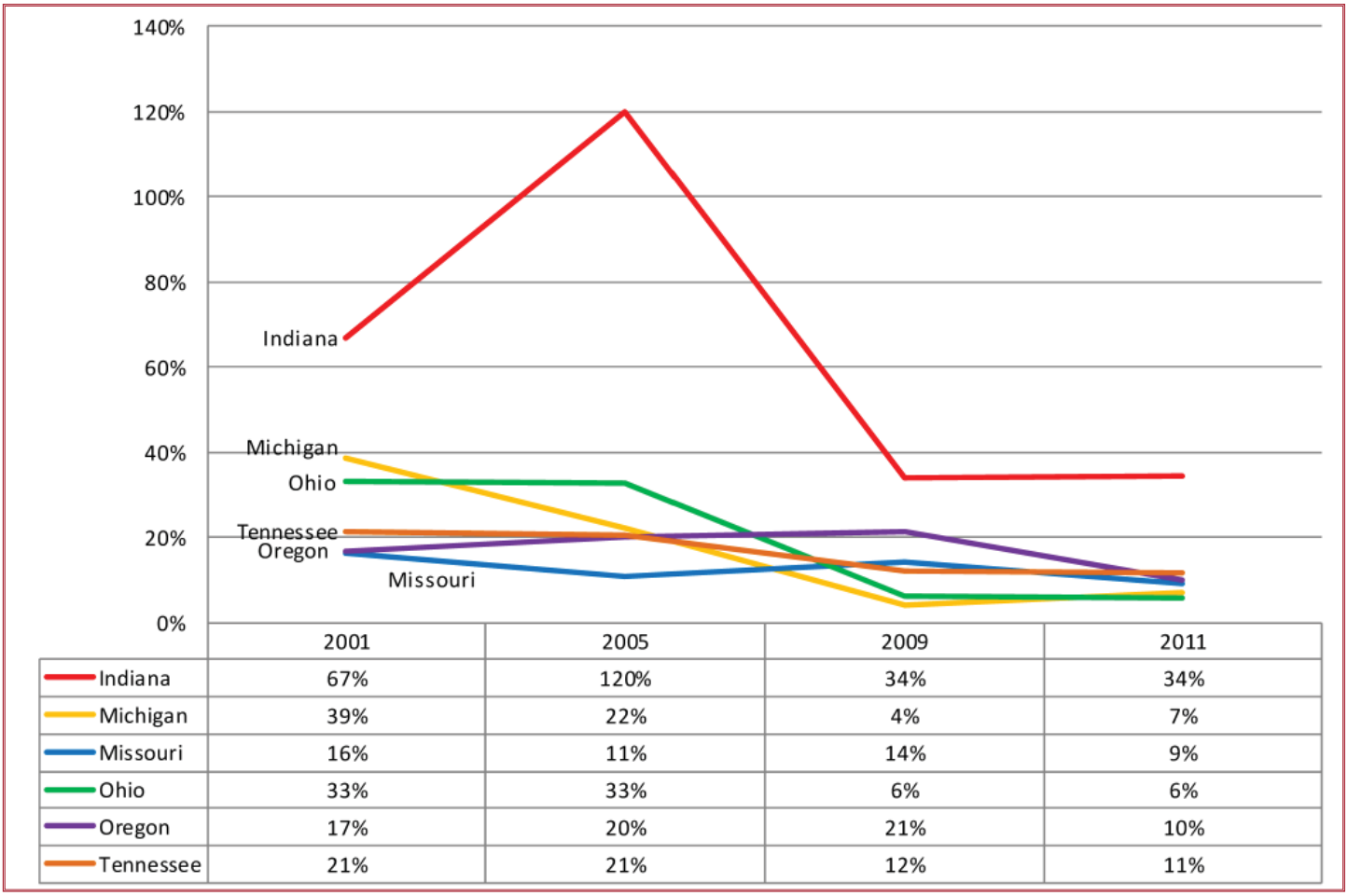
Figure 23a. Average Award of State Need-based Grant Aid (Adjusted for Inflation and Cost of Living Differences)



	2003	2008	2012
Indiana	$4,607	$5,873	$2,622
Michigan	$1,652	$1,407	$1,156
Missouri	$1,971	$2,129	$1,209
Ohio	$1,127	$1,755	$754
Oregon	$1,079	$1,711	$2,148
Tennessee	$2,282	$1,901	$1,642

Source: NASSGAP. (2013). *Annual survey data.* Note. Need-based aid was not awarded in South Dakota during the selected years.

Figure 23b. State Need-Based Grant Aid: Total State Aid as a Percentage of Federal Pell Grant Aid



	2001	2005	2009	2011
Indiana	67%	120%	34%	34%
Michigan	39%	22%	4%	7%
Missouri	16%	11%	14%	9%
Ohio	33%	33%	6%	6%
Oregon	17%	20%	21%	10%
Tennessee	21%	21%	12%	11%

Source: Postsecondary Education Opportunity. (2013). *Pell grant recipient data by state.*

Policies for Improving Educational Quality

States formulate and endorse a host of policies to improve high school readiness, high school graduation rates, and college readiness. For example, most MHEC states have adopted the Common Core State Standards, wherein grade-specific student outcomes are clearly delineated for English language arts and mathematics.[54] Such state-led efforts could strongly influence opportunities for participation and success in higher education.

Indicators in this section include:

» Pre-K Policy Rating
» K-12 Policy Rating
» Postsecondary Policy Rating
» State Data System Rating

Pre-K Policy Rating

If states are to reap a high, positive return on pre-K investments, policymakers must ensure a high level of program quality. The National Institute for Early Education Research defines "high quality" programs according to 10 policy standards.[55] In Table 7, the first standard refers to whether the state has comprehensive early learning standards in the areas of physical well-being and motor development, social/emotional development, learning approaches, language development, and cognition. Four standards are related to teacher quality, including requirements that pre-K teachers possess a bachelor's degree, a pre-K education specialization, and at least 15 hours of annual in-service training. Moreover, teacher assistants should possess at least a Child Development Associate (CDA) credential. Two standards indicate that class size should not exceed 20 students, and there should be at least 1 staff member for every 10 children. Another two standards pertain to student and parent services, including the provision of vision, hearing, and health screenings; parent support or involvement programs; and a meal program. States meet the last standard if site visits are required to evaluate program implementation. As indicated earlier, Indiana currently does not have a state pre-K program.

Table 7. Pre-K Policies Associated with High Program Quality

MHEC State	Indiana	Number of States Meeting Standards
Comprehensive early learning standards		51
Teacher has B.A.		30
Specialized training in Pre-K		44
Assistant teacher has CDA or equivalent		15
At least 15 hours/year in-service		42
Maximum class size <20		44
Staff-child ratio 1:10 or better		45
Vision, hearing, health, and one support service		37
At least one meal		24
Site visits		32
Quality Standards Checklist Sum 2012	0	(4 states meet all standards)

Source: National Institute for Early Education Research. (2012). *The state of preschool 2012.*

K-12 Policy Rating

States can improve the quality of K-12 education through policies related to K-16 alignment, student-staff ratios, teacher effectiveness, and teacher retention. Policymakers can help orient school reforms by articulating the skills and knowledge needed to be successful in college, including learning strategies, academic knowledge, self-regulation skills, and "college knowledge."[56] K-16 alignment can also be promoted through the use of assessment instruments that inform high school students whether they require additional academic preparation to be successful in college, thereby reducing the need for subsequent remedial education.[57] Student achievement can be improved through reductions in student-teacher ratios[58] and student-counselor ratios.[59] Teacher quality can be influenced through licensure requirements related to subject-specific coursework and pedagogical knowledge[60] as well as financial incentives for teachers to obtain certification through the National Board for Professional Teaching Standards.[61] Teacher retention can be improved by providing competitive salaries[62] and promoting participation in mentoring and induction programs.[63] According to Table 8, Indiana meets 36 percent of the K-12 quality standards.[64]

Table 8. K-12 Policies Related to K-16 Alignment, Student-Staff Ratios, Teacher Quality, and Teacher Retention

	Indiana	States Meeting Standard
K-16 Alignment		
College readiness – State defines college readiness	Yes	38
Assessment alignment – High school assessment aligned with postsecondary system	Yes	21
Student-Staff Ratios		
Student-to-teacher ratio median in elementary schools is 15:1 or less (2009-10)	No	28
Student-counselor ratio 250:1*	No	3
Teacher Effectiveness		
Substantial coursework in subject area(s) taught (e.g., academic major) required for teacher licensure	No	28
Test of basic skills required for teacher licensure	Yes	39
Test of subject-specific knowledge required for teacher licensure	Yes	43
Financial incentives for teachers to earn national-board certification (2011-12)	No	24
Teacher Retention		
Teacher-pay parity – Teacher salaries at least equal to comparable occupations (2010)	No	13
State-funded induction program required for all new teachers	No	14
State-funded mentoring program required for all new teachers	No	16

Source: Editorial Projects in Education Research Center. (2012). *State Highlights 2012.* *Data for this indicator were derived from the Common Core of Data.

Postsecondary Policy Rating

While various policies can be adopted to enhance the quality of postsecondary education, this report focuses on the critical need to promote the assessment of institutional practices and student outcomes. Specifically, states are evaluated according to whether all public four-year institutions are using the National Survey of Student Engagement (NSSE), whether public two-year institutions are using the Community College Survey of Student Engagement (CCSSE), and whether states require institutions to report student learning outcomes. The utilization of NSSE and CCSSE allows institutions to determine whether they are providing an effective context for learning and persistence, including the provision of a high level of academic challenge, active and collaborative learning, student-faculty interaction, a supportive campus environment, and enriching educational experiences.[65] Policymakers can further convey the expectation of strong institutional performance by mandating the collection and reporting of student outcomes data. Many institutions are currently using such measures as the Collegiate Learning Assessment, the ETS Proficiency Profile, and the ACT Collegiate Assessment of Academic Proficiency. Table 9 indicates that nearly all of Indiana's public four-year and two-year institutions utilize the NSSE or CCSSE surveys. Indiana does not report student learning outcomes for two- and four-year institutions.

Table 9. Postsecondary Student Assessment Practices and Policies in MHEC States

MHEC State	Percentage of public 4-year institutions participating in NSSE 2007-13	Percentage of public 2-year institutions participating in CCSSE 2010-13	State reports student learning outcomes: 4-year institutions	State reports student learning outcomes: 2-year institutions
Illinois	83%	69%	no	no
Indiana	93%	100%	no	no
Iowa	100%	88%	no	no
Kansas	88%	48%	no	no
Michigan	100%	65%	no	no
Minnesota	92%	100%	yes	yes
Missouri	93%	33%	yes	yes
Nebraska	86%	75%	no	no
North Dakota	67%	100%	no	no
Ohio	47%	83%	no	no
South Dakota	86%	0%	yes	yes
Wisconsin	93%	53%	no	no

Source: National Survey of Student Engagement. (2013). *Participating Institution Search*. Center for Community College Student Engagement. (2013). *Member Colleges*.

State Data System Rating

The improvement of performance in any system necessitates that individuals receive and utilize feedback on the efficacy of past, present, and future actions. Historically, though, states have lacked appropriate data systems that provide timely and relevant feedback for students, parents, teachers, administrators, and policymakers. Accordingly, the Data Quality Campaign, a national advocacy organization, has identified 10 state actions to promote the effective use of data and 10 essential elements of longitudinal data systems. While most states have already adopted all of the essential elements for a robust longitudinal data system, important state actions remain to be taken. State actions refer to strategies for linking data across educational sectors and into the workforce, providing data access for relevant stakeholders, and promoting the effective use of data for system improvement. Indiana has completed 8 of 10 recommended state actions (see Table 10).

Table 10. State Actions and System Elements Related to Data Quality

Action	IL	IN	IA	KS	MI	MN	MO	NE	ND	OH	SD	WI
1. Link data systems	no	yes	no	no	no	no	yes	no	no	no	no	no
2. Create stable, sustained support	yes	no	yes	yes	yes	no	no	yes	yes	yes	no	yes
3. Develop governance structures	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
4. Build state data repositories	yes	yes	yes	yes	yes	yes	yes	yes	no	yes	no	yes
5. Implement systems to provide timely access to information	no	yes	no	no	no	no	no	no	no	no	no	no
6. Create progress reports using individual student data to improve student performance	no	yes	yes	yes	yes	yes	yes	no	yes	yes	no	yes
7. Create reports using longitudinal statistics to guide systemwide improvement	yes	yes	no	yes	yes	yes	yes	no	no	yes	no	yes
8. Developa a P-20/ workforce research agenda	yes	yes	no	yes	yes	yes	yes	no	no	yes	no	yes
9. Promote educator professional development and credentialing	no	no	no	no	no	no	no	no	no	yes	no	no
10. Promote strategies to raise awareness of available data	no	yes	no	yes	yes	no	no	no	no	yes	no	yes

Source: Data Quality Campaign. (2012). *Data for action 2012: Focus on people to change data culture.*

APPENDICES

Enrollment in International Perspective

As the forces of globalization diminish barriers between countries, states will increasingly compete for knowledge-based industries and jobs on an international stage. Access to postsecondary education is essential for developing a stock of human capital that enables states to retain a strong competitive advantage. Figure A-1 shows that the United States continues to be a global leader in postsecondary enrollment, which is due in part to the size, diversity, and accessibility of its system. Indiana's rate of enrollment among 18-24 year olds (43 percent) exceeds the rates of all OECD countries except Korea (58 percent).[66]

Figure A-1. Percentage of Young Adults Aged 18 to 24 Enrolled in Postsecondary Education

United States		OECD Country
	58%	Korea
Rhode Island	55%	
Massachusetts	54%	
Vermont	53%	
Iowa, **Nebraska**, New Jersey, New York	48%	
Connecticut, **Michigan**, **North Dakota**, Pennsylvania	47%	
Delaware, Maryland, New Hampshire, **South Dakota**	46%	
California, **Kansas**, **Minnesota**, **Wisconsin**	45%	
Illinois, **Ohio**, Virginia	44%	
Florida, **Indiana**, Mississippi, Utah	43%	**United States**
Missouri, North Carolina	42%	Greece
Alabama, Idaho, Kentucky, Maine	41%	Belgium, Poland
Colorado, Montana, West Virginia	40%	Ireland
Georgia, Louisiana, New Mexico, Tennessee	39%	
Arizona, Arkansas, South Carolina, Texas	38%	
Washington, Wyoming	37%	
Hawaii, Oklahoma, Oregon	36%	New Zealand
Nevada	35%	Australia, Hungary, Netherlands
	34%	Spain
	32%	Czech Republic, France
	30%	Austria, Canada, Portugal, Turkey
	29%	Finland, Germany
Alaska	28%	
	27%	Italy, Norway, Slovak Republic
	25%	Denmark, United Kingdom
	24%	Sweden
	22%	Iceland
	21%	Switzerland
	17%	Mexico

Source: OECD. (2013). *StatExtracts: 2011.* U.S. Census Bureau. (2013). *American Community Survey: 2011.*

Educational Attainment in International Perspective

While the United States has comparatively high enrollment rates, several countries outperform the United States in degree attainment. Figure A-2 indicates that the United States ranks 11th in the percentage of adults aged 25-34 who have an associate's degree or higher. Indiana's postsecondary attainment rate (37 percent) ranks below such top performing countries as Korea, Japan, and Canada. While each of these countries has its own cultural characteristics, political climate, and economic conditions, specific policy mechanisms may partially explain differences in degree attainment. For example, Canada has invested heavily in "sub-bachelor's" attainment, which has widened the pipeline and increased both participation and graduation.[67]

Figure A-2. Percentage of Adults Aged 25 to 34 Holding an Associate's Degree or Higher

United States		OECD Country
	64%	Korea
	59%	Japan
	57%	Canada
Massachusetts	55%	
Minnesota	51%	
New York, **North Dakota**	50%	
Iowa	48%	
New Jersey, Vermont, Virginia	47%	Ireland, Norway, United Kingdom
Connecticut, Colorado, **Illinois**, Maryland, **South Dakota**	46%	Luxembourg, New Zealand
New Hampshire	45%	Australia, Israel
Nebraska, Pennsylvania	44%	
Kansas, Rhode Island, **Wisconsin**	43%	France, Sweden, **United States**
Washington	42%	Belgium
	41%	Chile
Hawaii, Maine, **Missouri**, Montana, Utah	40%	Netherlands, Switzerland, Denmark, Estonia, Finland, Iceland
Ohio, North Carolina	39%	OECD Average, Spain
California, **Michigan**, Oregon	38%	
Delaware, Florida, **Indiana**	37%	
Georgia, Wyoming	36%	
Arizona, Idaho, South Carolina	35%	
Kentucky, Texas	34%	Slovenia
Alabama, Oklahoma, Tennessee	33%	Greece
Alaska, Mississippi	32%	
Louisiana, West Virginia	31%	
Arkansas, New Mexico	30%	
Nevada	28%	Germany
	27%	Hungary, Portugal
	26%	Slovak Republic
	25%	Czech Republic
	23%	Mexico
	21%	Austria, Italy
	19%	Turkey

Source: National Center for Higher Education Management Systems. (2013). *ACS educational attainment by degree level: 2011.* OECD. (2013). *Education at a glance: Population who has attained tertiary education: 2011.*

Weights Used for Performance Scores

Indicators	Type of Aspirational Score	Raw Performance Score	Weight	Rationale for Differential Weights[68]
Postsecondary Enrollment: General				
College enrollment directly after high school	Median Score of Top 10 States	Current Score/ Aspirational Score	0.80	The augmentation of direct rather than postponed enrollment is assumed to be a more efficient and effective method of raising educational attainment.
Postsecondary enrollment among older adults	Median Score of Top 10 States	Current Score/ Aspirational Score	0.20	
Postsecondary Enrollment: Achievement Gap				
Undergraduate enrollment rate of disadvantaged minority students at public four-year institutions	Corresponding state population estimate	Current Score/ Aspirational Score	0.50	
Postsecondary enrollment among low-income students	Median Score of Top 10 States	Current Score/ Aspirational Score	0.50	
Degree Completion: General				
Graduation rates at public two-year colleges	Median Score of Top 10 States	Current Score/ Aspirational Score	0.50	
Graduation rates at public four-year colleges	Median Score of Top 10 States	Current Score/ Aspirational Score	0.50	
Degree Completion: Achievement Gap				
Graduation rate by ethnicity at public four-year institutions: average gap between disadvantaged minority students and White students	Ideal of educational equity (e.g., achievement is not linked with race/ ethnicity or SES)	0-.5=100; .6-2= 90; 2.1-5=75; 5.1 plus=60	1.00	
System Efficiency				
Credentials awarded per expenditure: Public two-year colleges	80th percentile score	Current Score/ Aspirational Score	0.33	
Credentials awarded per expenditure: Public masters universities	80th percentile score	Current Score/ Aspirational Score	0.33	
Credentials awarded per expenditure: Public research universities	80th percentile score	Current Score/ Aspirational Score	0.33	
Academic Preparation: General				

Weights Used for Performance Scores

Indicators	Type of Aspirational Score	Raw Performance Score	Weight	Rationale for Differential Weights[68]
Children ages 3 to 4 enrolled in preschool	National average school enrollment of children ages 5-6	Current Score/ Aspirational Score	0.20	The weights of academic preparation idicators progressively decrease to reflect the importance of PK-8 education in fostering college readiness.
Academic proficiency of 8th grade students: All students math	Median Percentage of Students Scoring at Levels 4-6 Proficiency on the PISA Exam Among Top Five Countries	Current Score/ Aspirational Score	0.17	
Academic proficiency of 8th grade students: All students reading	Median Percentage of Students Scoring at Levels 4-6 Proficiency on the PISA Exam Among Top Five Countries	Current Score/ Aspirational Score	0.17	
Academic proficiency of 8th grade students: All students science	Median Percentage of Students Scoring at Levels 4-6 Proficiency on the PISA Exam Among Top Five Countries	Current Score/ Aspirational Score	0.17	
Rate of high school graduation	Top state	Current Score/ Aspirational Score	0.09	
Proportion of college-bound students who demonstrate college-ready academic achievement: English	Top state among states with comparable percent of high school graduates taking ACT (within 10 percentage points)	Current Score/ Aspirational Score	0.05	
Proportion of college-bound students who demonstrate college-ready academic achievement: Reading	Top state among states with comparable percent of high school graduates taking ACT (within 10 percentage points)	Current Score/ Aspirational Score	0.05	
Proportion of college-bound students who demonstrate college-ready academic achievement: Math	Top state among states with comparable percent of high school graduates taking ACT (within 10 percentage points)	Current Score/ Aspirational Score	0.05	

Weights Used for Performance Scores

Indicators	Type of Aspirational Score	Raw Performance Score	Weight	Rationale for Differential Weights[68]
Proportion of college-bound students who demonstrate college-ready academic achievement: Science	Top state among states with comparable percent of high school graduates taking ACT (within 10 percentage points)	Current Score/ Aspirational Score	0.05	
Academic Preparation: Achievement Gap				
Academic proficiency of 8th grade students: Lower vs. Higher income students, Math	Ideal of educational equity (e.g., achievement is not linked with race/ ethnicity or SES)	0-.5=100; .6-2=90; 2.1-5=75; 5.1 plus=60	0.33	
Academic proficiency of 8th grade students: Lower vs. Higher income students, Reading	Ideal of educational equity (e.g., achievement is not linked with race/ ethnicity or SES)	0-.5=100; .6-2=90; 2.1-5=75; 5.1 plus=60	0.33	
Academic proficiency of 8th grade students: Lower vs. Higher income students, Science	Ideal of educational equity (e.g., achievement is not linked with race/ ethnicity or SES)	0-.5=100; .6-2=90; 2.1-5=75; 5.1 plus=60	0.33	
Affordability: Middle Class				
Percentage of Family Income Needed to Pay for College	Median score of top 10 states	Aspirational Score/ Current Score	0.30	Asset indicators receive greater weight since student debt can adversely affect persistence.
Monthly savings over 18 years needed to pay for four year of college	National average college savings rate	Aspirational Score/ Current Score	0.60	
Average Student Loan Debt	Median score of top 10 states	Aspirational Score/ Current Score	0.10	
Affordability Gap				
Percentage of Family Income Needed to Pay for College: Lower vs. Median income families, two-year colleges	Ideal of equal financial access	0-.5=100; .6-2=90; 2.1-5=75; 5.1 plus=60	0.40	The affordability gap for enrollment at four-year colleges is assigned a greater weight due to the greater under-representation of disadvantaged students at four-year colleges and the potentially larger impact of four-year college degree completion on socioeconomic mobility.

Weights Used for Performance Scores

Indicators	Type of Aspirational Score	Raw Performance Score	Weight	Rationale for Differential Weights[68]
Percentage of Family Income Needed to Pay for College: Lower vs. Median income families, four-year colleges	Ideal of equal financial access	0-.5=100; .6-2=90; 2.1-5=75; 5.1 plus=60	0.60	
Effectiveness of Postsecondary Institutions: Four-year colleges				
Public four-year effectiveness in promoting degree completion	Cut-off for "High Effectiveness"	"moderate" effectiveness -.99 thru +.99: Yellow	1.00	
Policies for Improving Educational Quality: PK-12				
Pre-K policy rating	Top state	Current Score/ Aspirational Score	0.50	
K-12 policy rating	Ideal	Current Score/ Aspirational Score	0.50	
Policies for Improving Educational Quality: Postsecondary				
Postsecondary policy: Student learning outcomes state reporting	Top state	Current Score/ Aspirational Score	1.00	

Note: Final category scores represent the sum of corresponding indicator scores. Unless otherwise indicated, final scores were converted into the color scheme accordingly: red: less than 70; yellow: 70-89; and green: 90-100. The median 2012 PISA proficiency scores among 15 year-old students are identified after retaining only the highest scoring Chinese administrative region.

Endnotes

[1] The Georgetown University Center on Education and the Workforce. (2013). *Recovery: Job growth and education requirements through 2020.*

[2] Job categories were defined by the Georgetown University Center on Education and the Workforce: Managerial and Professional (e.g., management, business operations, finance, and legal); STEM (e.g., computer and mathematical science, architects and technicians, engineers and technicians, life and physical scientists); Social Sciences (psychologists, market research analysts, urban planners, survey researchers, economists, anthropologists, archeologists, sociologists, political scientists, historians, geographers); Community Service and Arts (e.g., social services, arts, design, sports, entertainment, media); Education; Healthcare (professionals and support); Food and Personal Services (e.g., protective services, food preparation and serving, personal care); Sales and Office Support; and Blue Collar (e.g., farming, fishing and forestry, construction and extraction, installation, maintenance and equipment repair, production, transportation and material moving).

[3] Lumina Foundation. (2012). *A stronger nation through higher education.* Retrieved from http://www.luminafoundation.org/publications/A_Stronger_Nation-2012.pdf

[4] College Board. (2010). *Education pays 2010.* Retrieved from http://trends.collegeboard.org/downloads/Education_Pays_2010.pdf

[5] State-by-state data currently exist only for a few indicators related to the economic benefits of higher education.

[6] Horn, A. S. (2012). *The selection of peer states for performance benchmarking in higher education.* Retrieved from http://www.mhec.org/sites/mhec.org/files/20130429peer_state_selection_working_paper.pdf

[7] U.S. Census Bureau. (2010). *Voting and registration in the election of November 2008.* Retrieved October 19, 2011, from http://www.census.gov/prod/2010pubs/p20-562.pdf

[8] Bureau of Labor Statistics. (2011). *Volunteering in the United States: 2010.* Retrieved October 19, 2011, from http://www.bls.gov/news.release/pdf/volun.pdf

[9] U.S. Department of Health and Human Services. (2011). *Health, United States, 2010.* Retrieved October 19, 2011, from http://www.cdc.gov/nchs/data/hus/hus10.pdf#010

[10] Ibid.

[11] Ibid.

[12] U.S. Census Bureau. (2010). *American Community Survey 1 Year Estimates.* Retrieved October 19, 2011, from http://factfinder2.census.gov

[13] U.S. Census Bureau. (2010). *American Community Survey 1 Year Estimates.* Retrieved October 19, 2011, from http://factfinder2.census.gov

[14] Bureau of Labor Statistics. (2011). *Education pays.* Retrieved October 19, 2011, from http://www.bls.gov/emp/ep_chart_001.htm

[15] Median incomes are defined as median earnings in the past 12 months in 2010 inflation-adjusted dollars by educational attainment for the population 25 years and over with earnings. U.S. Census Bureau. (2010). 2010 American Community Survey 1-year estimates. The Tax Foundation. *State individual income tax rates, 2000-2011.* Retrieved October 19, 2011, from http://www.taxfoundation.org/files/state_individualincome_rates-2000-2011-20110503.xls

Endnotes

[16] General investment levels are not currently rated due to the difficulty in establishing ideal funding levels.

[17] National Center for Education Statistics. (2010). *Number and percentage of actual and projected undergraduate enrollment in degree-granting postsecondary institutions, by sex, attendance status, and control of institution: Selected years, fall 1970-2020.* Retrieved October 19, 2011, from http://nces.ed.gov/programs/coe/tables/table-hep-1.asp

[18] Bozick, R., & DeLuca, S. (2005). Better late than never? Delayed enrollment in the high school to college transition. *Social Forces, 84*(1), 527-550.

[19] Enrollment estimates do not include international students and students of unknown race/ethnicity. Enrollment estimates include students of all ages.

[20] Postsecondary Education Opportunity. (2012). *College participation rates for students from low income families by state.* Retrieved from http://www.postsecondary.org. The low-income student enrollment rate is defined as the number of dependent Pell grant recipients divided by the number of children enrolled in 4*th* to 9th grades who qualify for free/reduced price lunch. Enrollment rates among college-ready, low-income students were unavailable.

[21] National Center for Higher Education Management Systems. (2009). *Graduation rates.* Retrieved from http://www.higheredinfo.org

[22] Bureau of Labor Statistics. *Education pays.* Retrieved from http://www.bls.gov/emp/ep_chart_001.htm

[23] Jaeger, D. A., & Page, M. E. (1996). Degrees matter: New evidence on sheepskin effects in the returns to education. *The Review of Economics and Statistics, 78*(4), 733-740.

[24] Note that the indicators in this section reflect the extent to which the PK-16 system and relevant state conditions enable students to obtain a postsecondary degree. For indicators that focus specifically on the performance of colleges and universities, see the section on Institutional Effectiveness and Efficiency.

[25] Education and related expenditures include spending on direct costs of educational activities: instruction, student services, and educational spending related to academic support, institutional support, and operations.

[26] It is worth noting that some credentials cost significantly more than others, and states that appear to be maximizing their revenues might be generating lower quality degrees or credentials that have lower market returns.

[27] Adelman, C. (2006). *The toolbox revisited: Paths to degree completion from high school through college.* Retrieved October 19, 2011, from http://www2.ed.gov/rschstat/research/pubs/toolboxrevisit/toolbox.pdf

[28] Pianta, R. C., Barnett, W. S., Burchinal, M., & Thornburg, K. R. (2009). The effects of preschool education: What we know, how public policy is or is not aligned with the evidence base, and what we need to know. *Psychological Science in the Public Interest, 10*(2), 49-88.

[29] NCES. (2013). *Percentage of the population 3 to 34 years old enrolled in school, by age group: Selected years, 1940 through 2012.* Retrieved from http://nces.ed.gov/programs/digest/d13/tables/dt13_103.20.asp

[30] American College Testing. (2008). *The forgotten middle.* Retrieved October 19, 2011, from http://www.act.org/research/policymakers/pdf/ForgottenMiddle.pdf

[31] Higher income is defined as any level of income that did not qualify the student for free or reduced price lunch.

Endnotes

[32] This rate does not include GED attainment. Graduation rates are only calculated for public schools: the number of 9th graders/number of high school graduates four years later. These rates have not been adjusted for student migration.

[33] American College Testing. (2010). *What are ACT's college readiness benchmarks?* Retrieved October 19, 2011, from http://www.act.org/research/policymakers/pdf/benchmarks.pdf

[34] Desrochers, D. M., & Wellman, J. V. *Trends in college spending 1999-2009.* Retrieved October 19, 2011, from http://www.deltacostproject.org/resources/pdf/Trends2011_Final_090711.pdf

[35] Estimates have been adjusted for inflation and regional cost differences.

[36] Adjustments have been made for regional cost differences. This calculation assumes the following: average net cost at a public four-year institution for the state's median family income; 5 percent college cost inflation; no current savings; 5 percent rate of return. See https://www.tiaa-cref.org/public/products-services/education-savings/529

[37] SallieMae. (2013). *How America saves for college 2013.* Retrieved from https://www.salliemae.com/assets/Core/how-America-saves/HowAmericaSaves_Report2013.pdf

[38] The Project on Student Debt. (2012). *Student debt and the class of 2011.* Retrieved from http://projectonstudentdebt.org/files/pub/classof2011.pdf. The debt estimates reflect the average per-undergraduate borrower cumulative principal from institutional, state, federal, and private loans. The debt estimates do not take into account credit card debt and family loans, thereby underestimating the overall debt burden incurred through postsecondary education.

[39] NACE. (2012). *Salary survey: Starting salaries for new college graduates.* Retrieved from http://www.naceweb.org/uploadedFiles/NACEWeb/Research/Salary_Survey/Reports/SS_January_exsummary_4web.pdf

[40] This calculation assumes a 10-year repayment plan with a fixed interest rate of 6.8 percent.

[41] King, T., & Bannon, E. (2002). *The burden of borrowing: A report on the rising rates of student loan debt.* Retrieved October 19, 2011, from http://www.pirg.org/highered/BurdenofBorrowing.pdf.

[42] Kuh, G. D. (2008). *High-impact educational practices: What they are, who has access to them, and why they matter.* Retrieved from http://www.neasc.org/downloads/aacu_high_impact_2008_final.pdf

[43] See Commission on the Abraham Lincoln Study Abroad Fellowship Program. (2005). *Global competence and national needs.* Retrieved from http://www.nafsa.org/uploadedFiles/NAFSA_Home/Resource_Library_Assets/CCB/lincoln_commission_report%281%29.pdf?n=6097

[44] Horn, A. S. (2014). *Effectiveness and efficiency in promoting timely degree completion: A performance rating system for the states.*

[45] Education and related expenditures are defined here as (instructional expenditures + student services + (educational share * (academic support + institutional support + operational maintenance).

[46] National Center for Education Statistics. (2012). *Public school expenditures.* Retrieved from http://nces.ed.gov/programs/coe/indicator_tot.asp#info

[47] NASBO. (2011). *2010 state expenditure report.* Retrieved from http://www.nasbo.org/sites/default/files/2010%20State%20Expenditure%20Report.pdf

Endnotes

[48] State Higher Education Executive Officers. (2012). *State higher education finance.* Retrieved from http://www.sheeo.org/finance/shef/SHEF_FY11.pdf. Expenditure figures do not include capital or debt service. Twelve states also allocate funds to private institutions (0.2 percent of total appropriations).

[49] National Institute for Early Education Research. (2012). *The state of preschool 2012.* Retrieved from http://nieer.org/publications/state-preschool-2012. NIEER defines state preschool programs according to whether the initiative is (a) controlled and funded by the state; (b) primarily focused on early childhood education for 3- and/or 4-year old children at least two days per week; (c) differentiated from child care subsidies; and (d) intended to serve all students, not just those with disabilities. NIEER qualifies state supplements to Head Start if the program is under state administration and student enrollment is significantly expanded. The figures reported here have been adjusted for inflation and regional cost differences. PreK expenditures reflect state and TANF expenditures.

[50] Gault, B., Mitchell, A. W., Williams, E., Dey, J., & Sorokina, O. (2008). *Meaningful investments in pre-k: Estimating the per-child costs of quality programs.* Retrieved from http://www.pewstates.org/uploadedFiles/PCS_Assets/2008/PEW_PkN_meaningfulinvestmentsbrief_may2008.pdf

[51] National Center for Education Statistics. (2012). *Public school expenditures.* Retrieved from http://nces.ed.gov/programs/coe/indicator_tot.asp#info

[52] The index represents the following ratio: (Total expenditures on students who are funded below the statewide median level)/(Median expenditures x number of students funded below median level). Accordingly, the index represents actual funding as a percent of ideal funding, wherein the ideal of equity is defined as all students being funded at the median level. In the case of Minnesota, the index of 90 percent means that current funding for the bottom half of students is equivalent to 90 percent of ideal funding (again, wherein all such students receive median-level funding). Minnesota would need to increase spending by 10 percent of the ideal total to achieve the goal of median-level spending for all students in the bottom half.

[53] Education and related expenditures include instruction, student services, and academic support. Educational expenditures exclude research, service, institutional support, and other expenses. State appropriations data do not reflect how appropriations are actually being used. Other sources of revenue were excluded: local appropriations, government grants and contracts, and other revenue. Revenue and expenditures are calculated on a FTE student basis.

[54] Minnesota and Nebraska have not adopted the Common Core Standards.

[55] National Institute for Early Education Research. (2012). *The state of preschool 2012.* Retrieved from http://nieer.org/sites/nieer/files/2011yearbook.pdf

[56] Conley, D. T. (2007). *Redefining college readiness.* Retrieved from http://inside.redwoods.edu/basicskills/documents/1.RedefiningCR_Vol3_Copy.pdf

[57] See Rutschow, E. Z., & Schneider, E. (2011). *Unlocking the gate: What we know about improving developmental education.* Retrieved from http://www.mdrc.org/sites/default/files/full_595.pdf

[58] Steve Aos, Marna Miller, & Jim Mayfield. (2007). *Benefits and Costs of K–12 Educational Policies: Evidence-Based Effects of Class Size Reductions and Full-Day Kindergarten.* Olympia: Washington State Institute for Public Policy, Document No. 07-03-2201.

[59] Carrell, S. E., & Hoekstra, M. (2011). *Are school counselors a cost-effective education input?* Retrieved from http://econweb.tamu.edu/mhoekstra/counselors.pdf

Endnotes

[60] Goe, L., & Stickler, L. M. (2008). *Teacher quality and student achievement.* Retrieved from http://www.gtlcenter.org/sites/default/files/docs/March2008Brief.pdf

[61] Helding, K. A., & Fraser, B. J. (2013). Effectiveness of National Board Certified teachers in terms of classroom environment, attitudes and achievement among secondary science students. *Learning Environment Research, 16*, 1-21.

[62] Borman, G. D., & Dowling, N. M. (2008). Teacher attrition and retention. A meta-analytic and narrative review of the research. *Review of Educational Research, 78*(3). 367-409.

[63] Ingersoll, R. M., & Strgon, M. (2012). What the research tells us about the impact of induction and mentoring programs for beginning teachers. *NSSE Yearbook, 111*(2), 466-490.

[64] Standards are assigned 0/1 reflecting "no"/"yes." Scores are then summed.

[65] National Survey of Student Engagement. (2012). *Fostering student engagement campuswide.* Retrieved from http://nsse.iub.edu/NSSE_2011_Results/pdf/NSSE_2011_AnnualResults.pdf. For CCSSE, see http://www.ccsse.org/aboutsurvey/aboutsurvey.cfm

[66] International comparisons should be utilized with caution due to several factors. First, interstate migration is seamless in the United States and these data reflect patterns related to tuition pricing and labor market demands as well as academic or institutional quality. Second, there are national and cultural differences impacting both participation and completion rates. Israel, for example, requires military service for most citizens between the ages of 18-21, reducing the percentage of eligible students between those ages. Finally, OECD data is useful for establishing benchmarks with the world's wealthiest, most developed economies, but provides less reliable data regarding emerging economic nations such as Brazil, China, South Africa, Russia, and India.

[67] Hauptman, A. M., & Kim, Y. (2009). *Cost, containment, and attainment in higher education: An international comparison.* Retrieved October 19, 2011, from http://www.policyarchive.org/handle/10207/bitstreams/18138.pdf.

[68] See indicator descriptions for supporting references.

Midwestern Higher Education Compact
105 Fifth Avenue South, Suite 450
Minneapolis, MN 55401
Phone: 612-677-2777 Fax: 612-767-3353
E-mail: mhec@mhec.org

Visit MHEC's website at: www.mhec.org.

For cost savings purchases of computing hardware, software, and other technology products and services, go directly to www.mhectech.org.

For an interactive, searchable database of all institutions participating in the Midwest Student Exchange Program, please visit the MSEP Access Navigator at http://msep.mhec.org.