Higher Education and the Future of Arkansas

- Presented to the

- Task Force on Higher Education Remediation, Retention and Graduation Rates

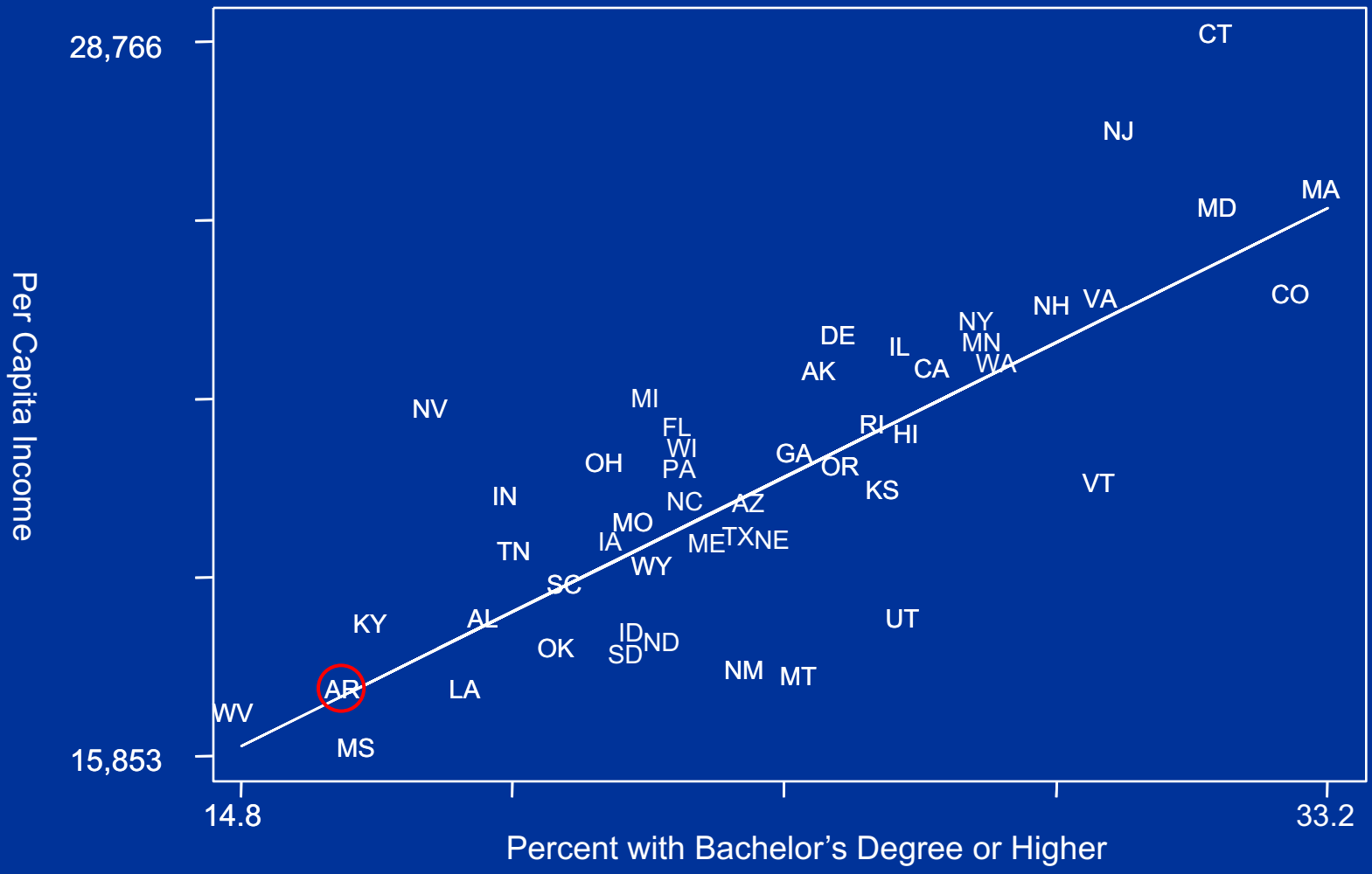
- Little Rock, Arkansas

- October 8, 2007

NCHEMS
National Center for Higher Education Management Systems
3035 Center Green Drive, Suite 150 Boulder, Colorado 80301-2251

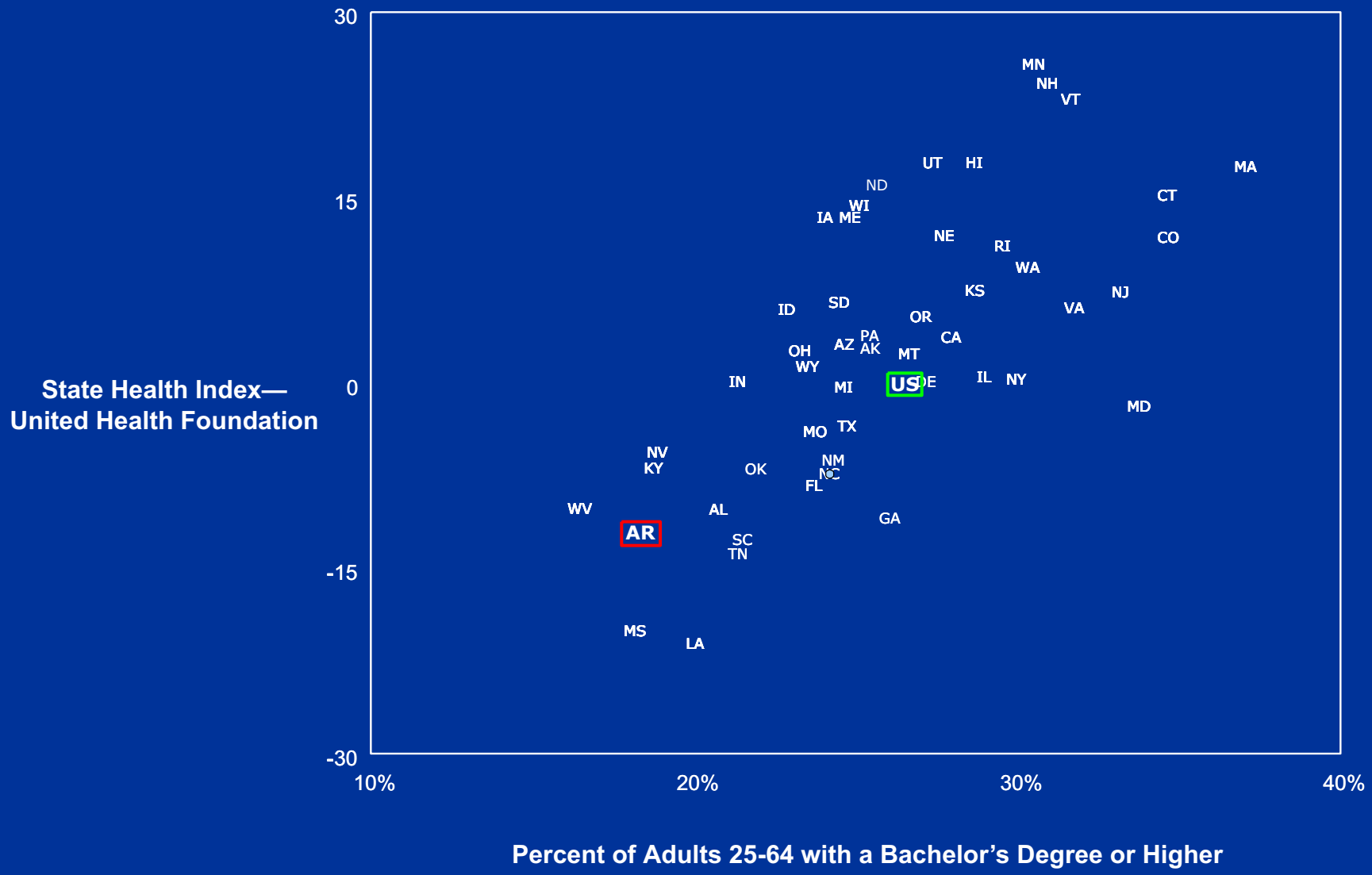
- *Why Focus on Higher Education?*

Relationship Between Educational Attainment and Personal Income by State, 2000



Source: U.S. Census Bureau, 2000 Census

Relationship Between Educational Attainment and Health, 2000



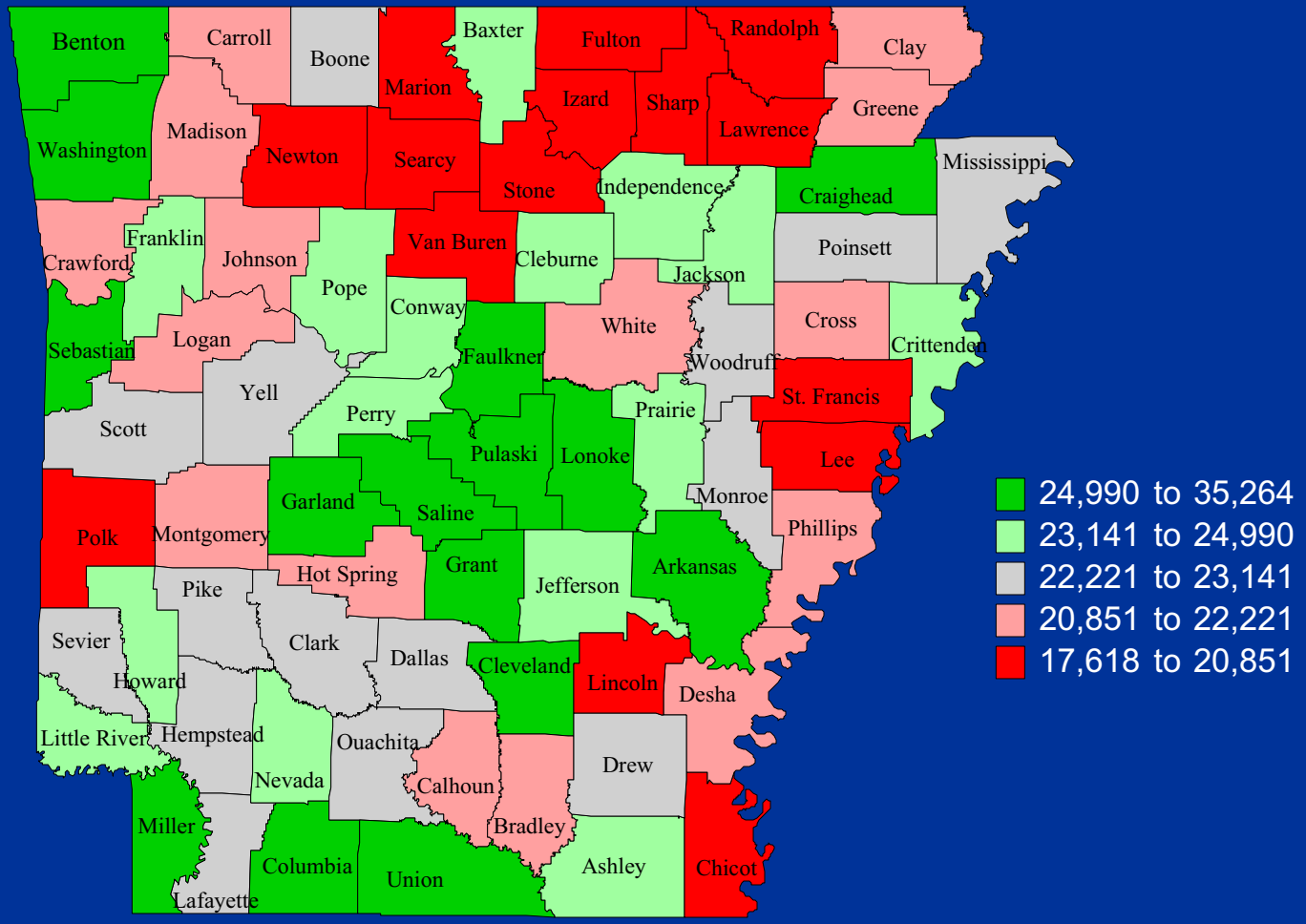
Source: U.S. Census Bureau, 2000 Census; United Health Foundation

Relationship Between Personal Income and Tax Revenues, 2003

Per Capita Personal Income as a Percent of U.S. Average—Arkansas, 1960-2005

Source: Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce

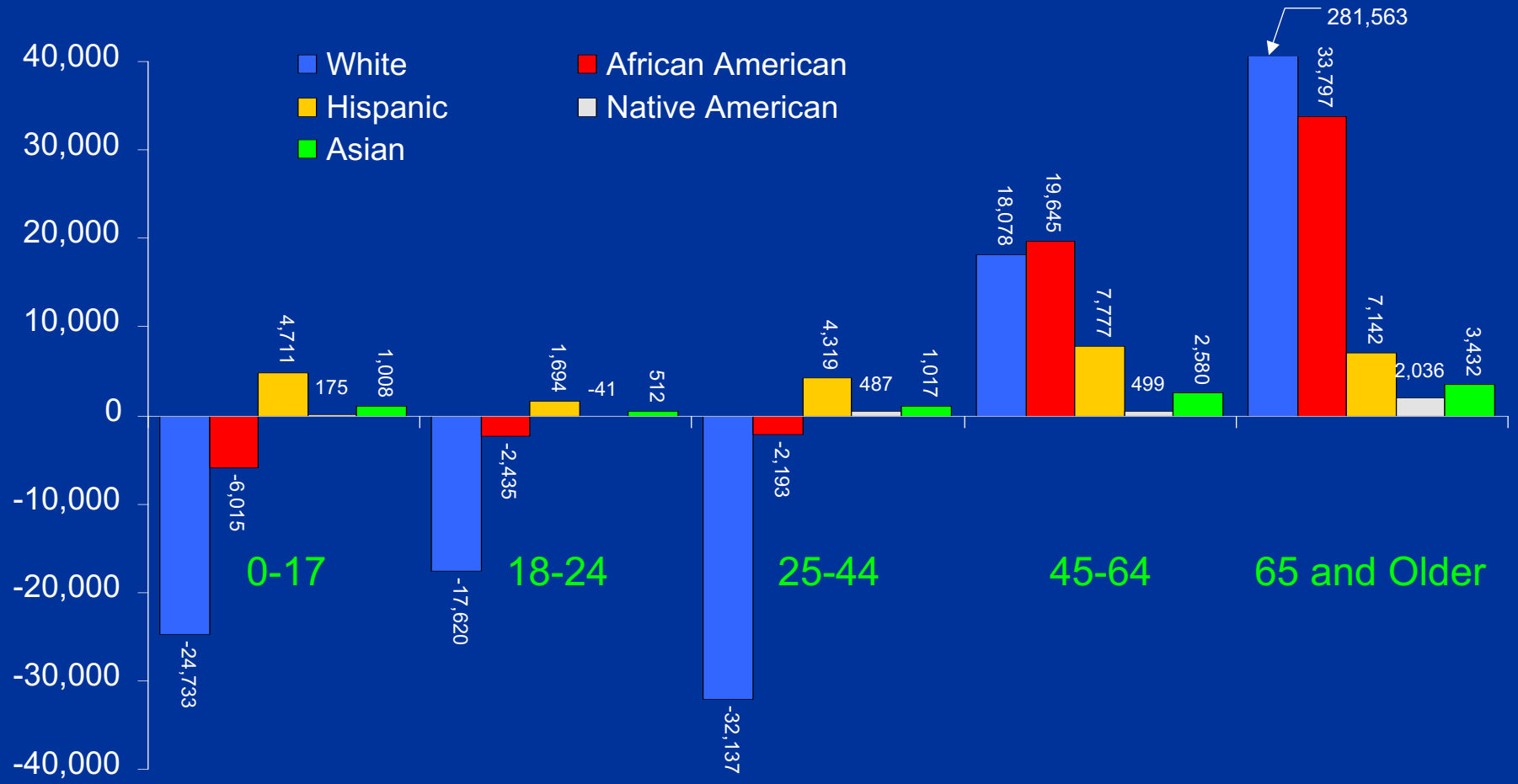
Per Capita Personal Income, 2004



Arkansas = $25,814
Source: Bureau of Economic Analysis

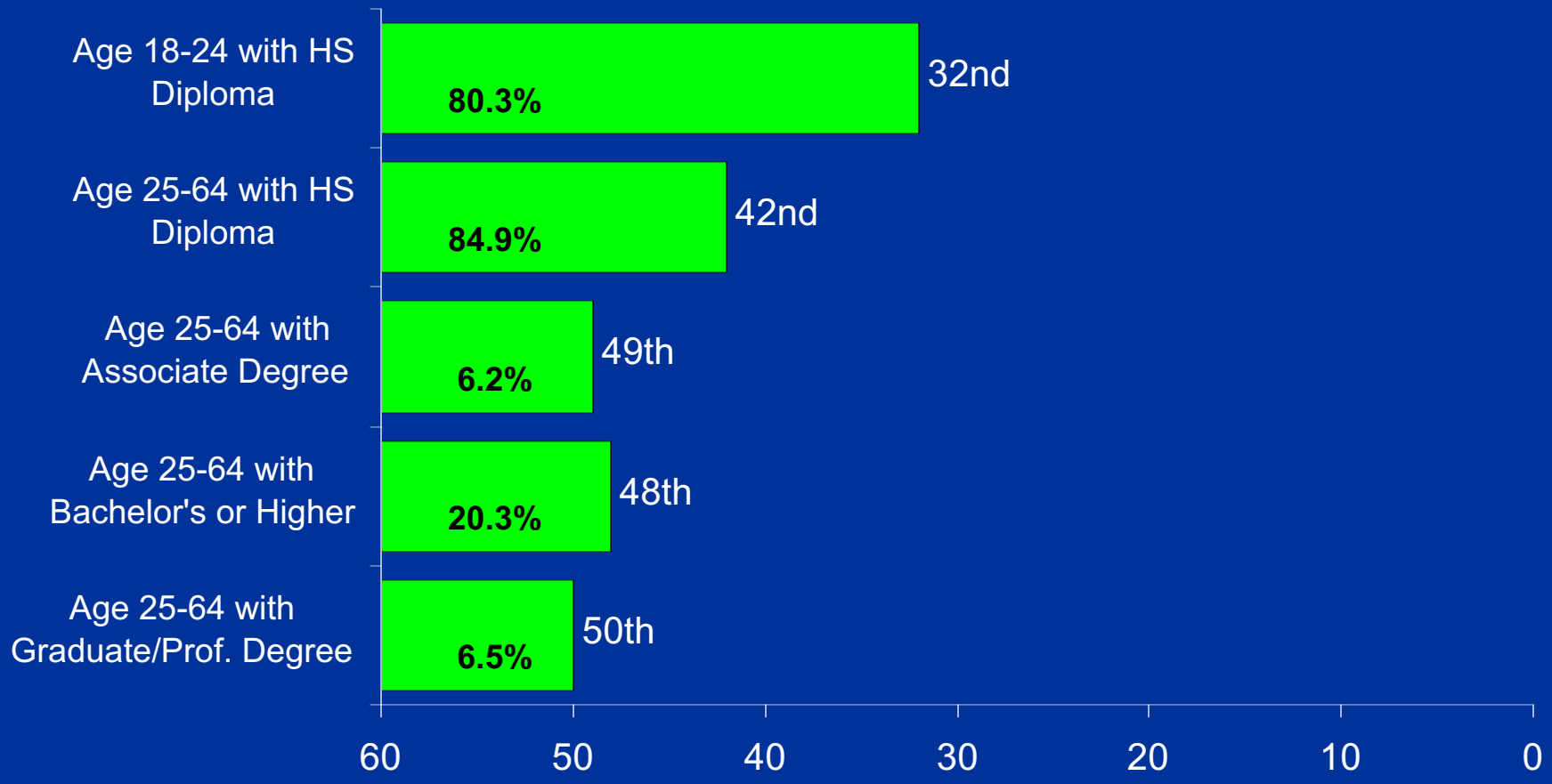
The Workforce

Projected Change in Arkansas Population By Age and Race/Ethnicity, 2006-25



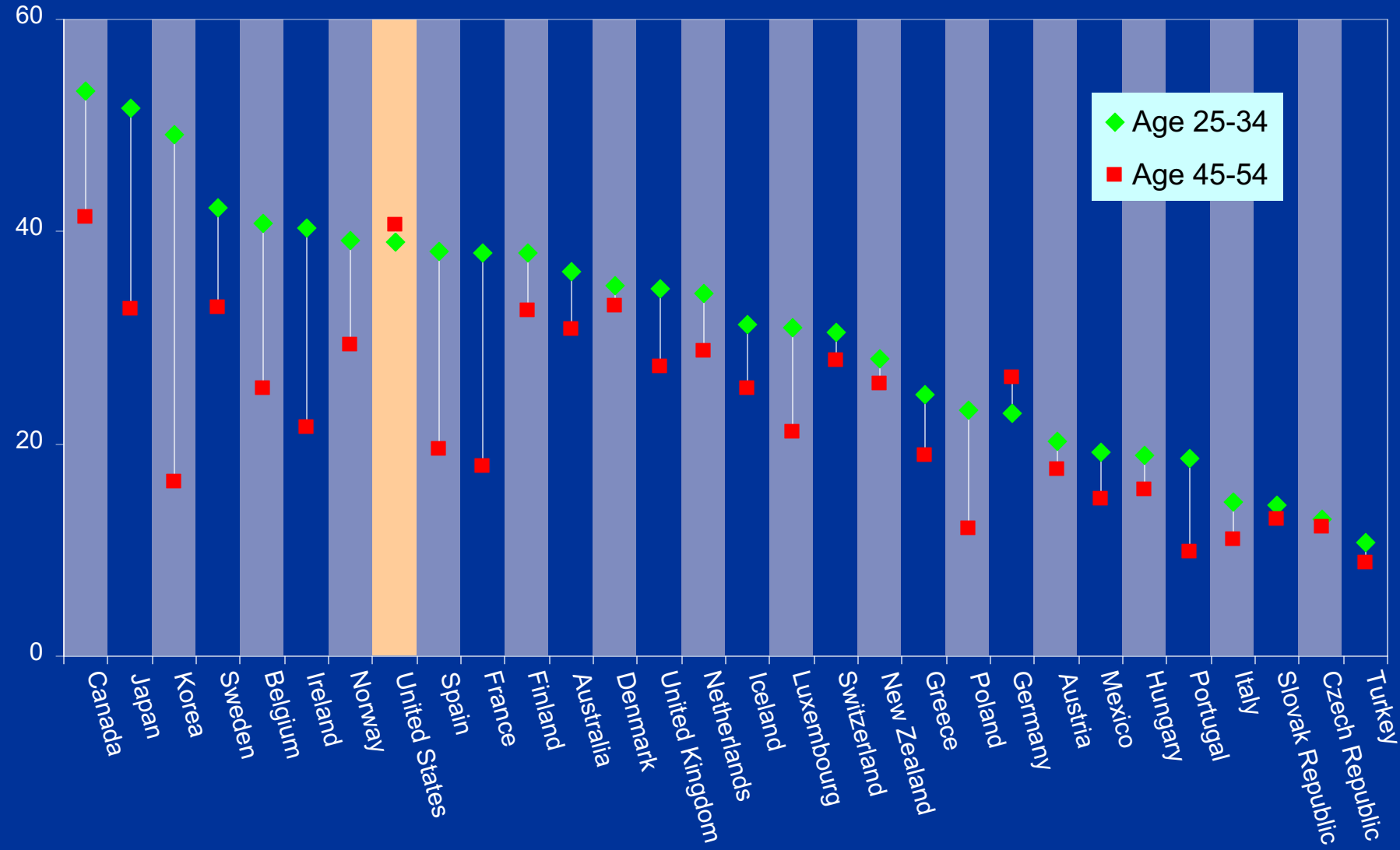
Source: Arkansas Department of Economic Security and Commerce

Educational Attainment and Rank Among States—Arkansas, 2005 (Percent)



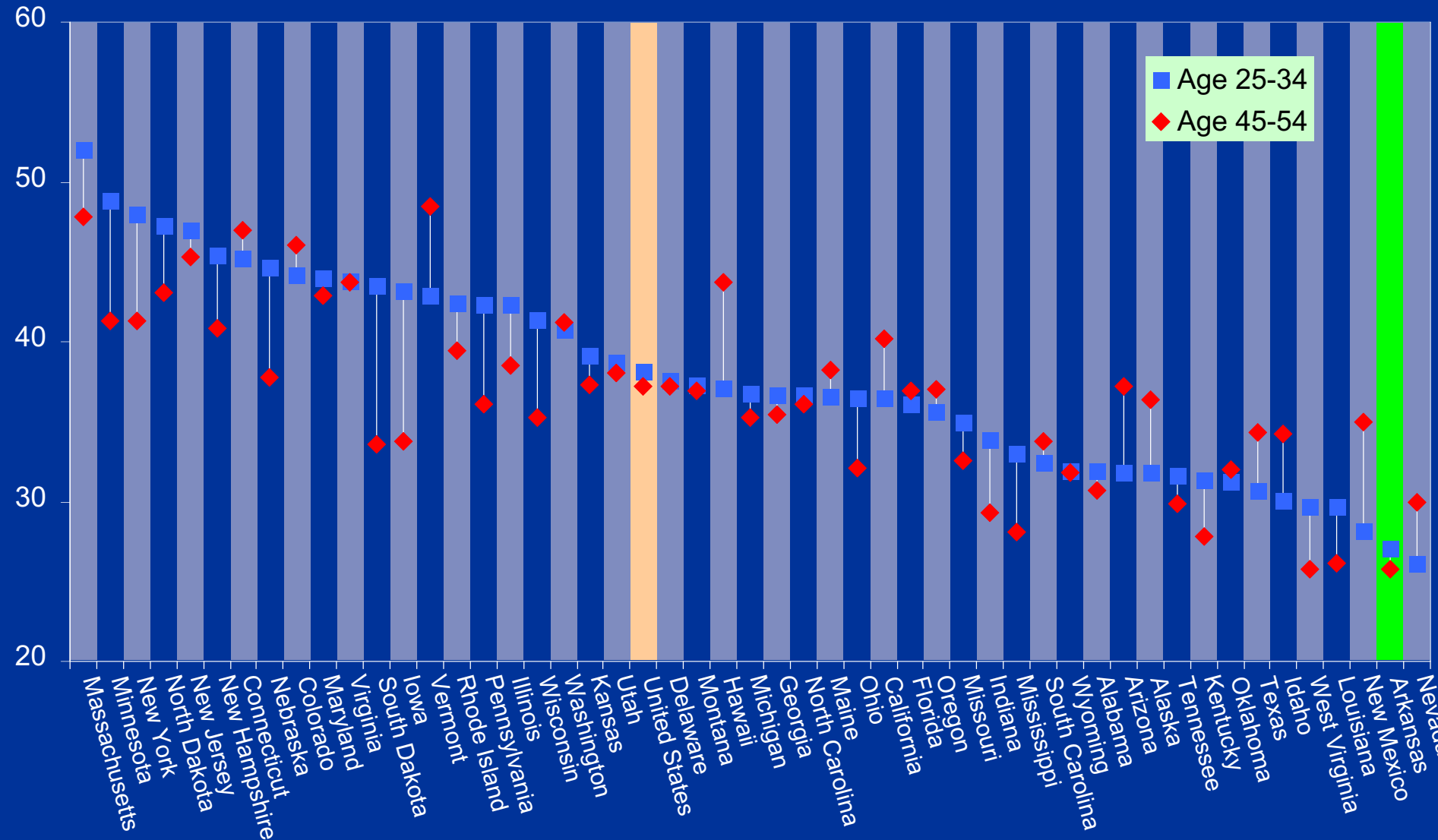
Source: U.S. Census Bureau, 2005 American Community Survey (ACS)

Differences in College Attainment (Associate and Higher) Between Younger and Older Adults—U.S. and OECD Countries, 2004



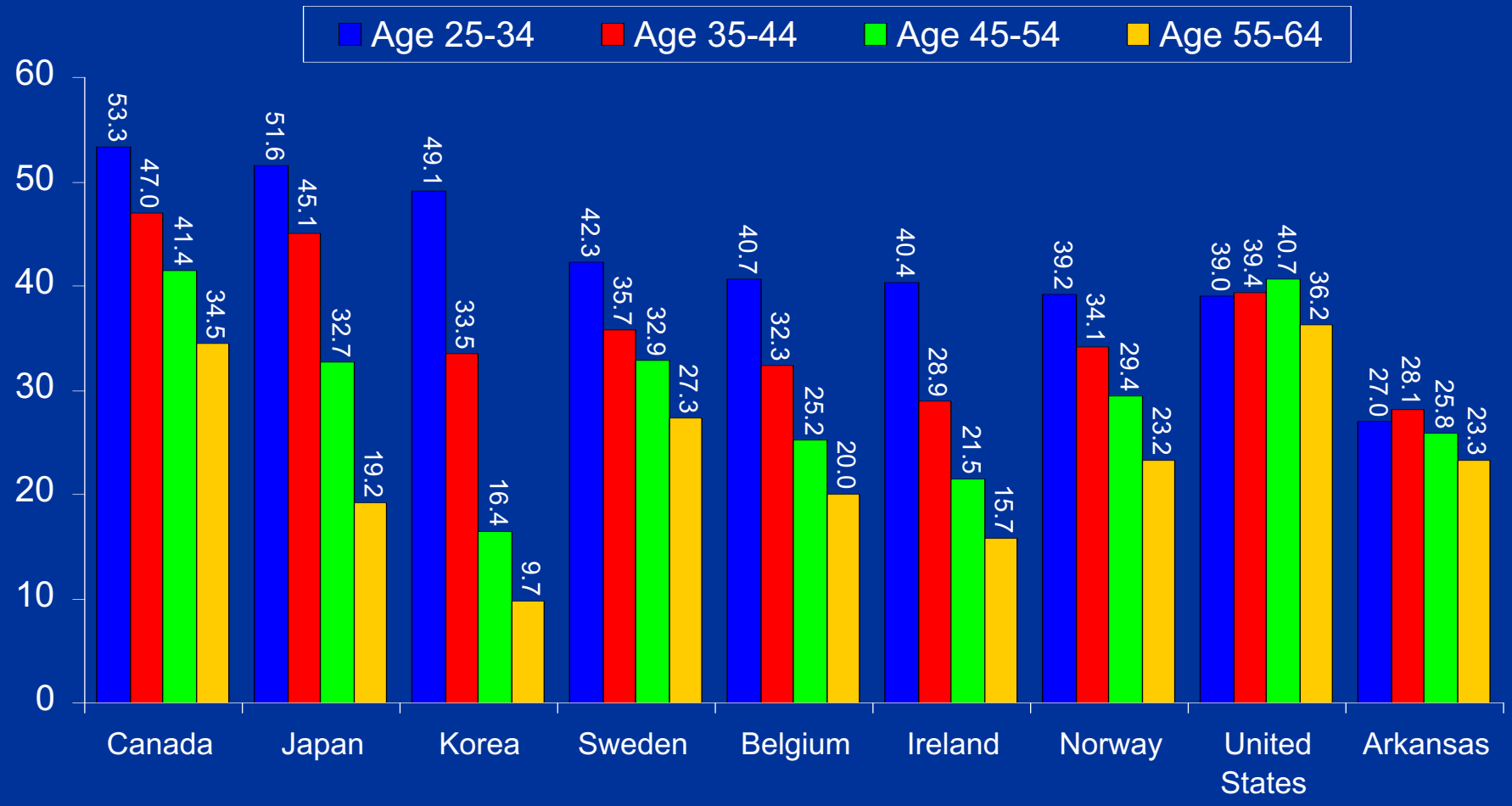
Source: *Education at a Glance 2006*, Organisation for Economic Co-operation and Development (OECD)

Differences in College Attainment (Associate and Higher) Between Younger and Older Adults—U.S., 2005



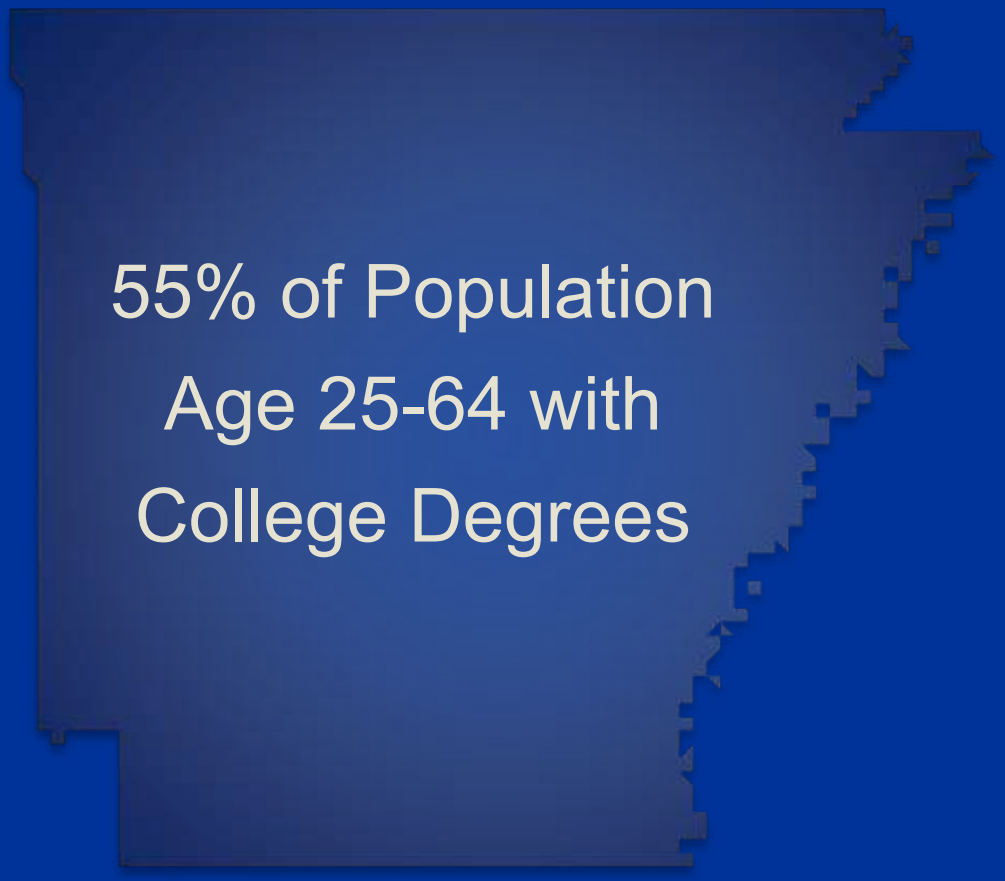
Source: U.S. Census Bureau, American Community Survey 2005

Percent of Adults with an Associate Degree or Higher by Age Group—Arkansas, the U.S. and Leading OECD Countries

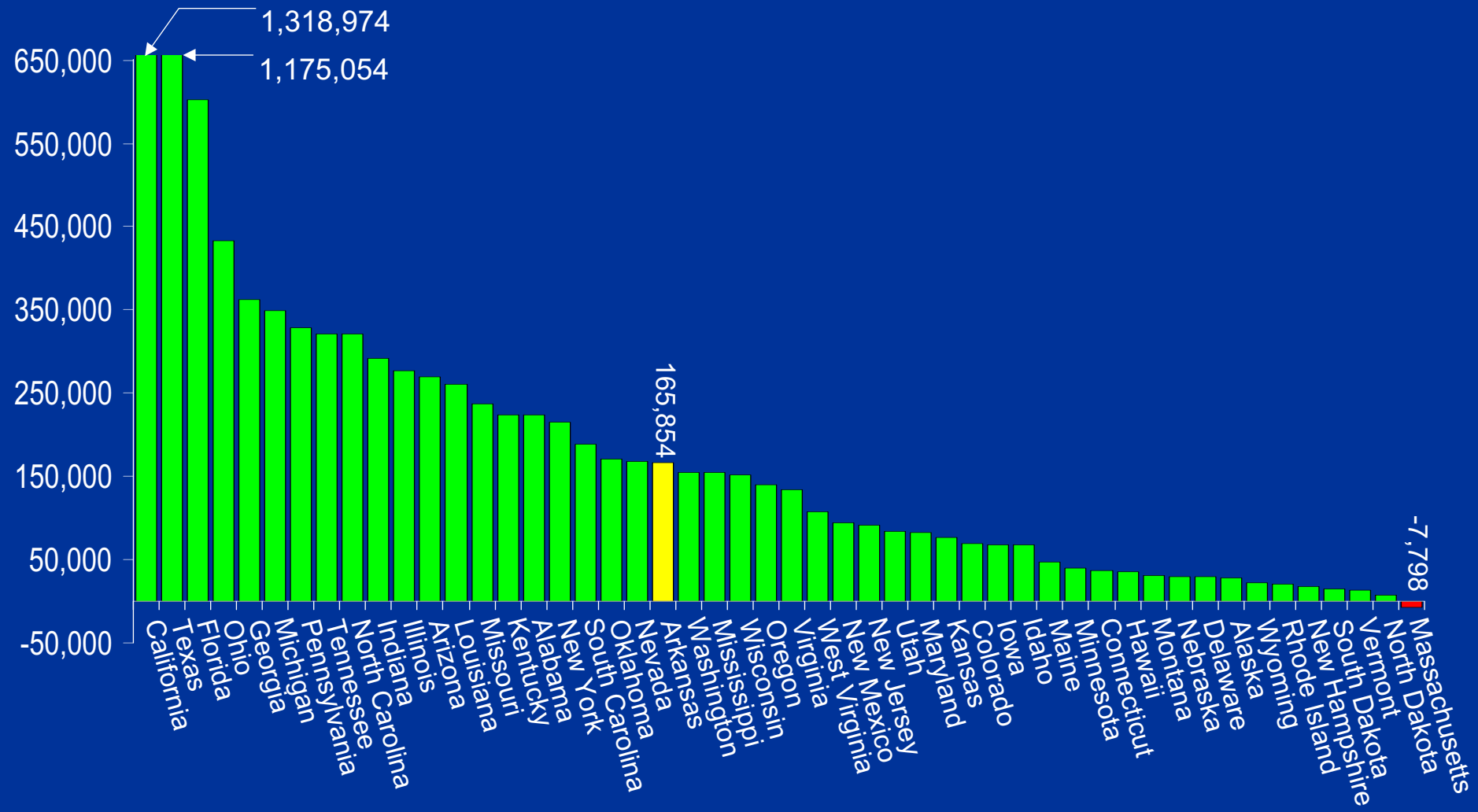


Source: OECD, *Education at a Glance 2006*; U.S. Census Bureau, ACS 2005

The Goal: Arkansas Reaching International Competitiveness by 2025



*Additional Degrees (Associate and Above) Needed in Adult Population Age 25-44 to Meet Top Country Performance**



*In Canada, 50.13% of adults age 25-44 have college degrees (Associate and above).

Source: U.S. Census Bureau, 2005 ACS; OECD

Reaching Top Performance by 2025 (55%)– Arkansas

835,336	Number of Individuals to Match Best-Performing Countries (55%)
202,622	Number of Individuals (Age 25-44) Who Already Have Degrees
632,714	Additional Production Needed (2005 to 2025)
309,266	Degrees Produced at Current Annual Rate of Production
16,592	Additional Residents with College Degrees from Net Migration
306,856	Additional Degrees Needed
15,343	Additional Degrees Needed per Year (Currently Produce 16,357 in All Sectors)
111.1%	Increase in Annual Associate and Bachelor's Degree Production Needed (in Public Sector Only)

Collective Cost to Arkansas, Assuming Tuition Stays the Same

$ 682 Million =Annual Costs of Additional Students at Current $ per Student

$ 862 Million =Current State Contribution

79.1% =Percent Increase in Annual State Support Needed

Average Cost to Students, Assuming No Additional State Investment

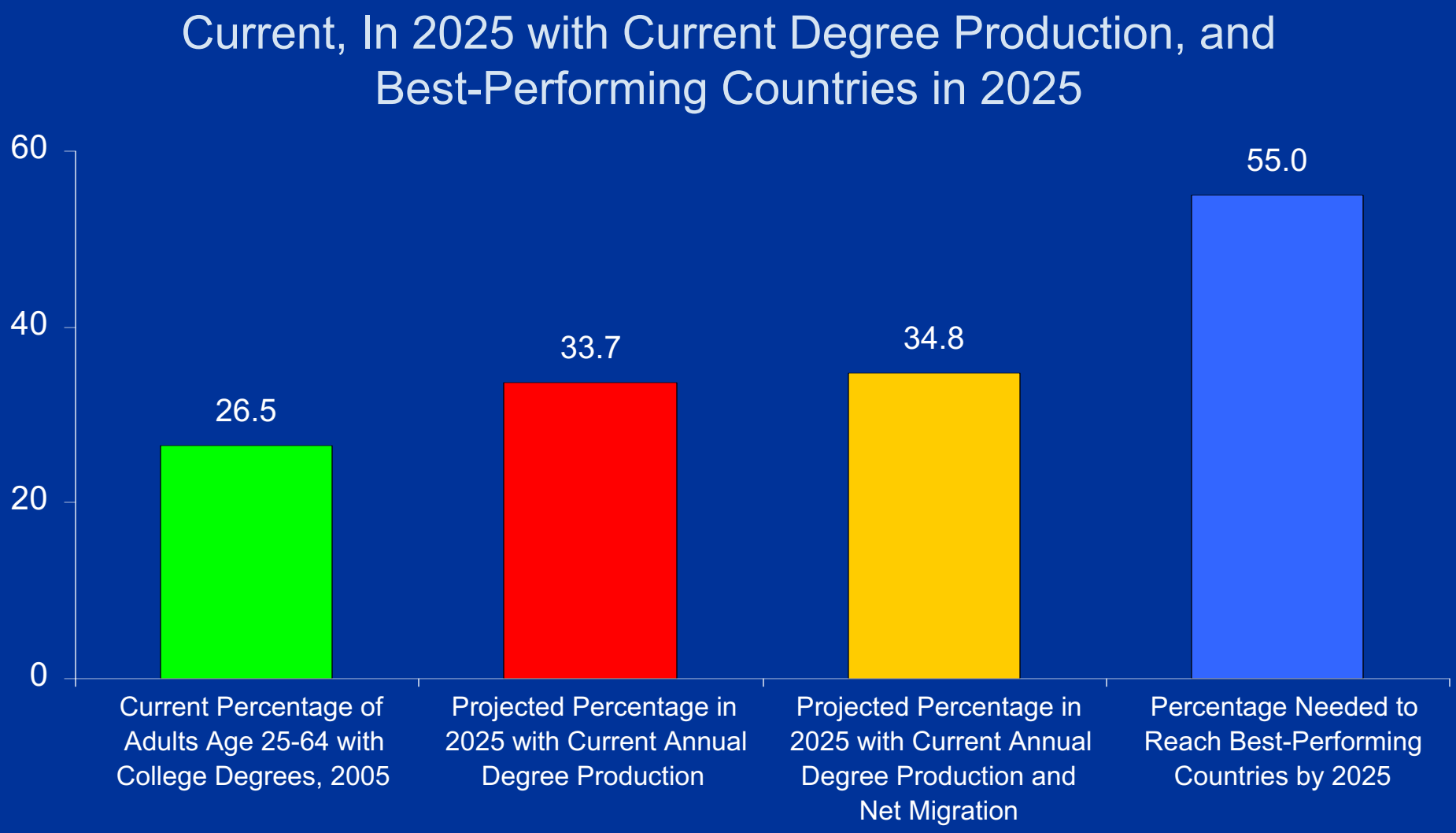
$ 3,985 =Additional Annual Costs to Students at Public Four-Year Institutions

117% Increase in Tuition and Fees
(Currently $ 3,421)

$ 2,683 =Additional Annual Costs to Students at Public Two-Year Institutions

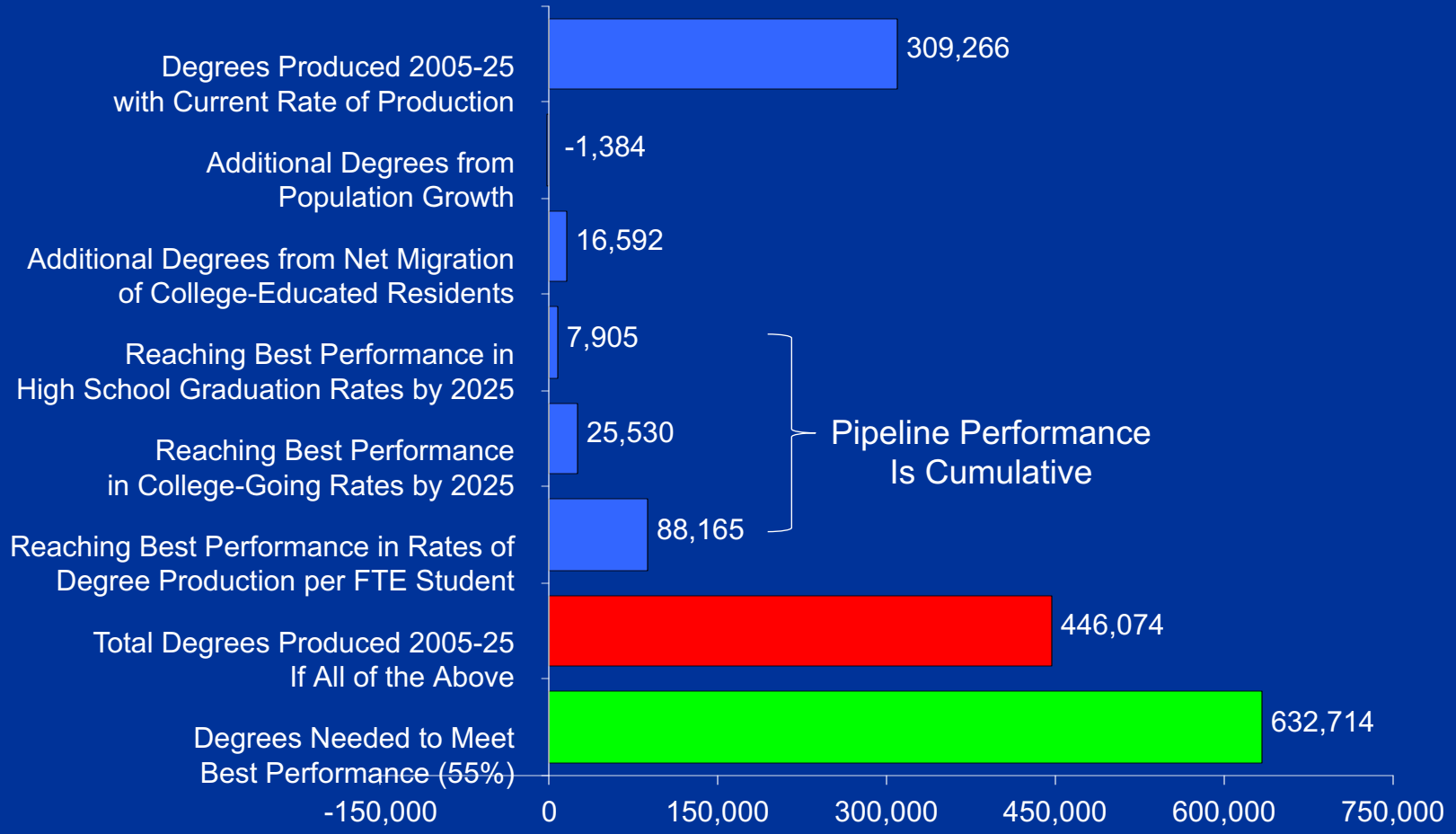
217% Increase in Tuition and Fees
(Currently $ 1,237)

Educational Attainment in Arkansas (Percent)



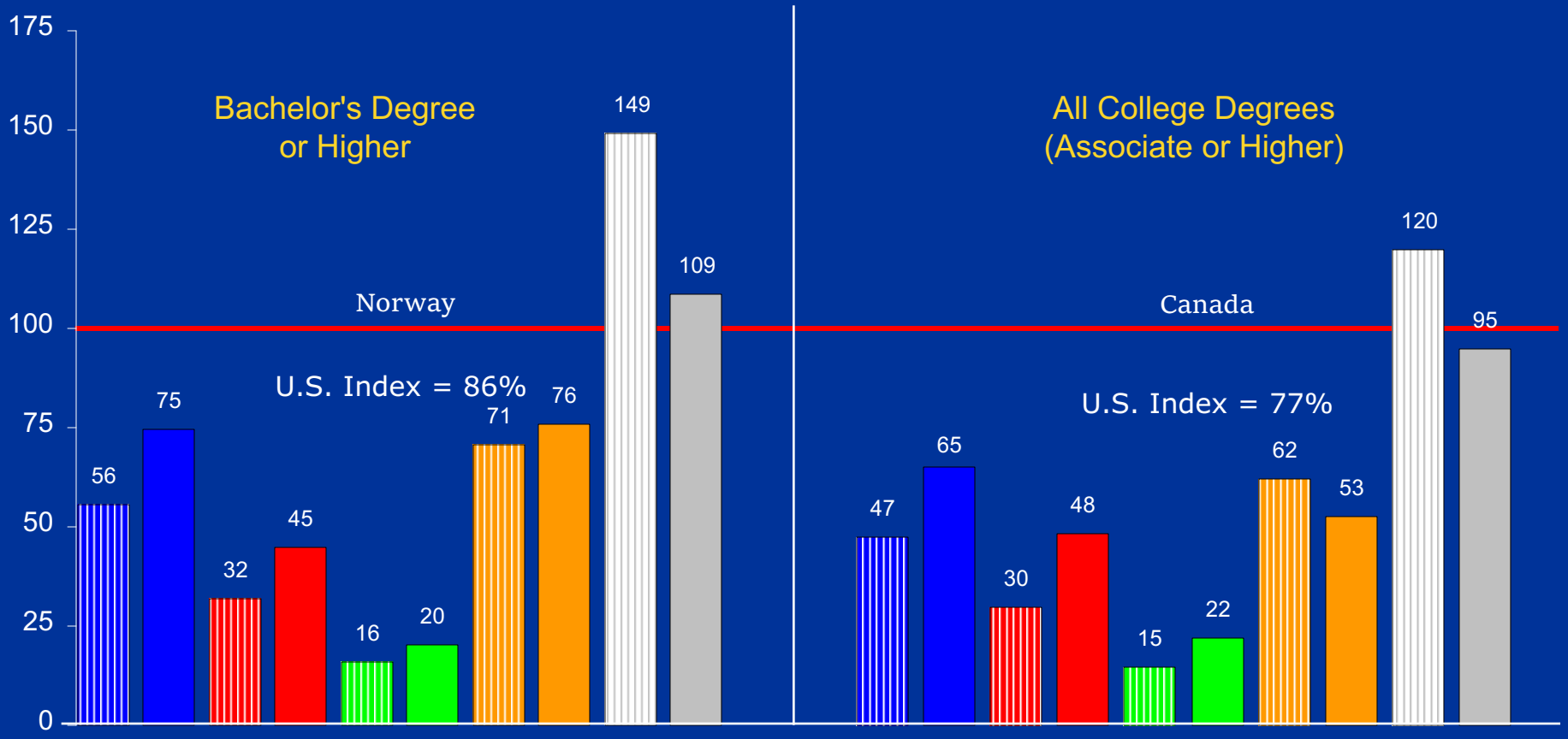
How Can Arkansas Reach International Competitiveness?

Current Degree Production Combined with Population Growth and Migration, and Best Performance* on the Student Transition and Completion Measures



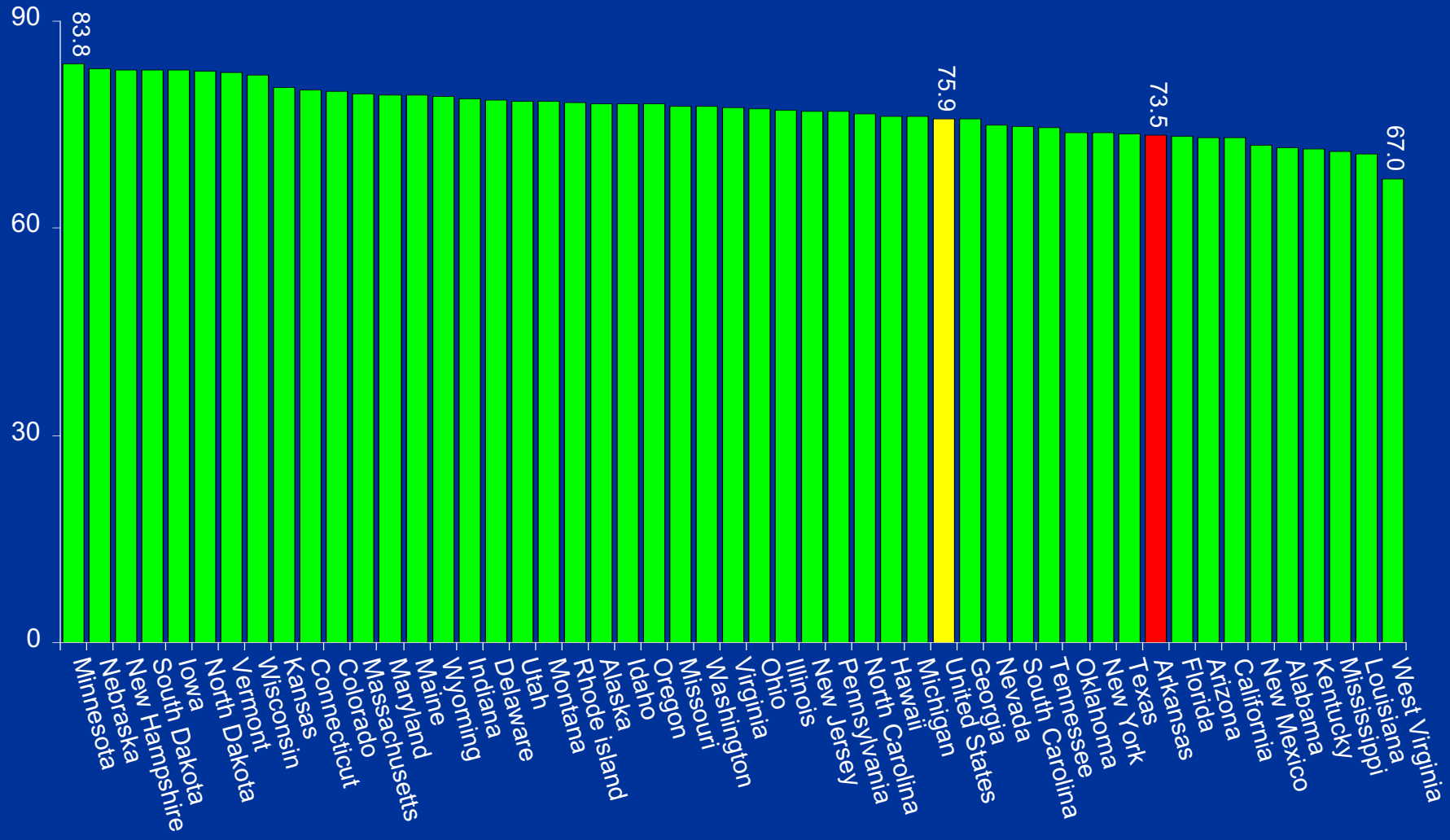
*Best performance = average of top three states

Percent Educational Attainment in Arkansas of Younger Workforce (Age 25-34)—Indexed to Most Educated Country, 2005



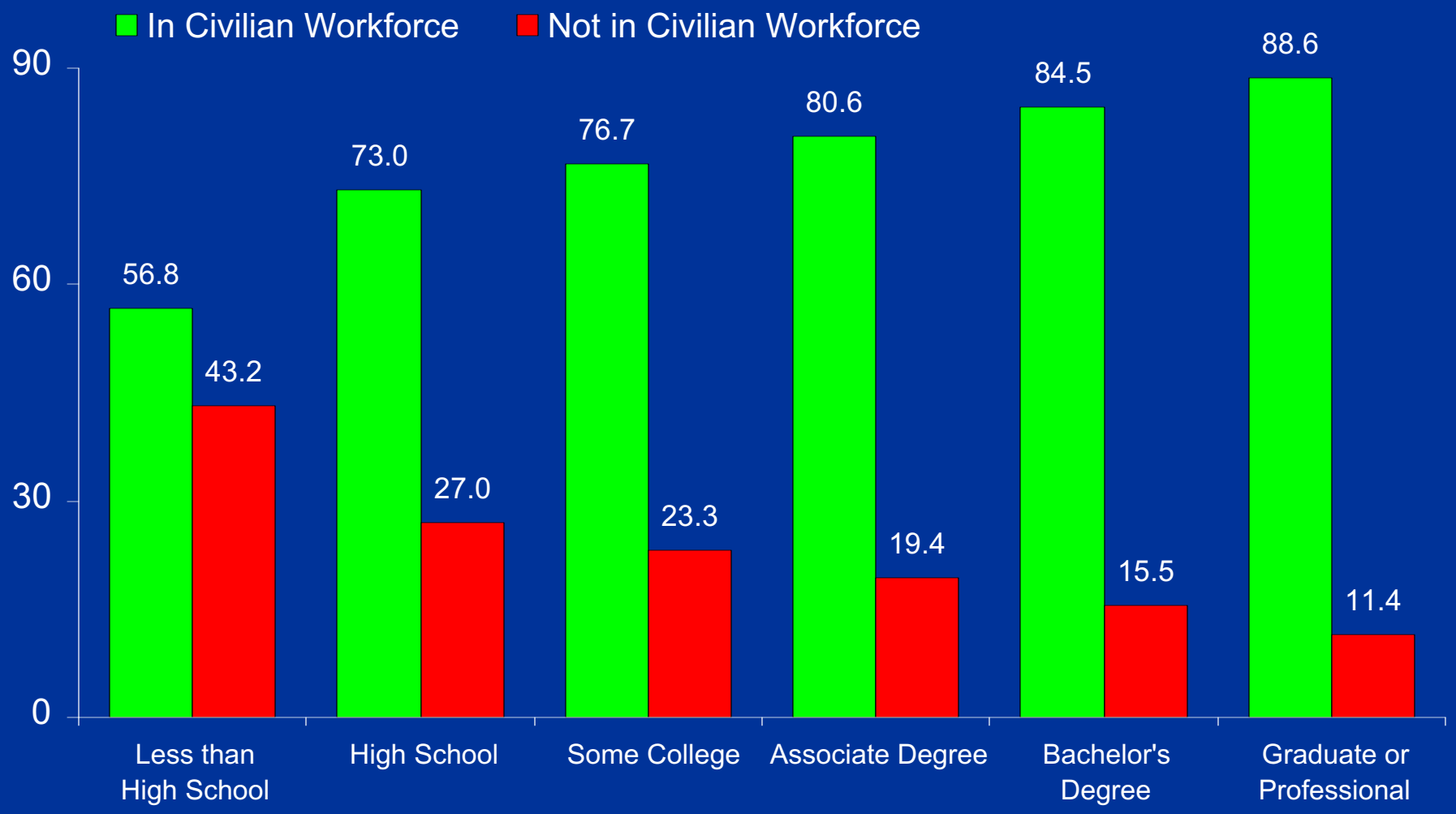
Source: U.S. Census Bureau's 2005 American Community Survey; OECD

Percent of Civilian Population Age 25-64 Participating in the Workforce, 2000



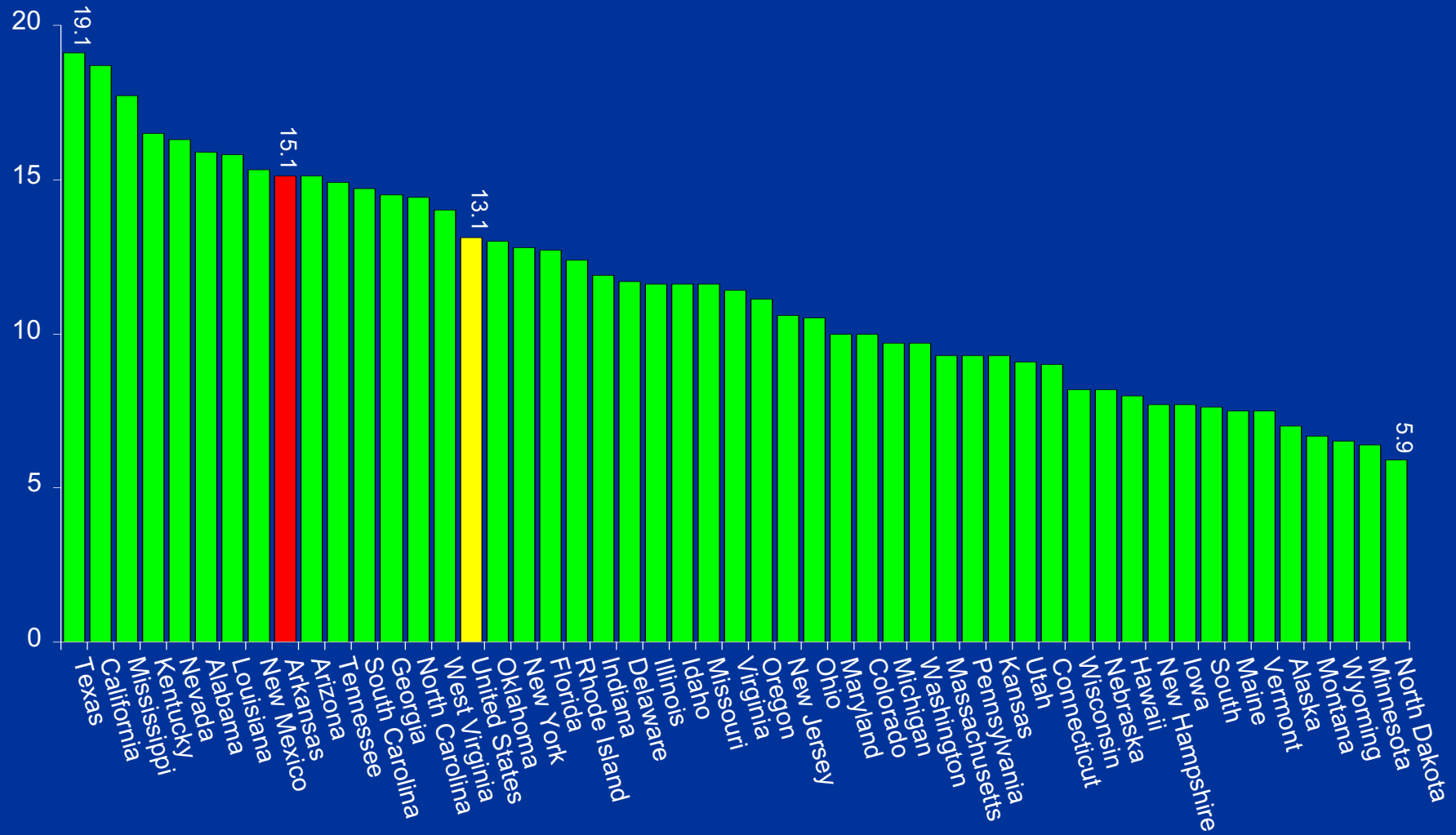
Source: U.S. Census Bureau

Percent of Civilians Age 25-64 Participating in the Workforce by Level of Education, 2000



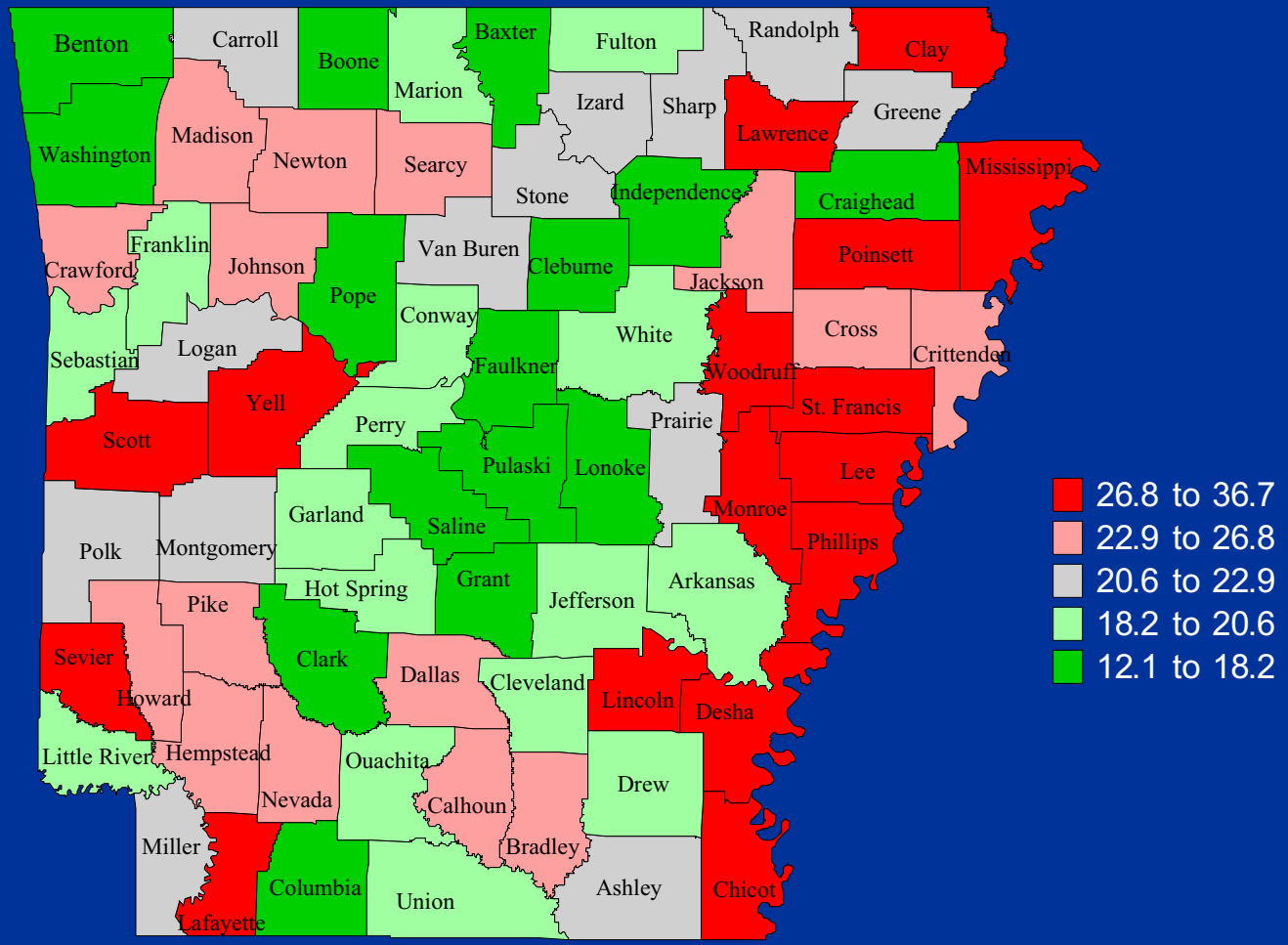
Source: IPUMS 5% Sample, Minnesota Population Center

Percent of Population Age 25-64 with Less than a High School Diploma, 2005



Source: U.S. Census Bureau, 2005 ACS

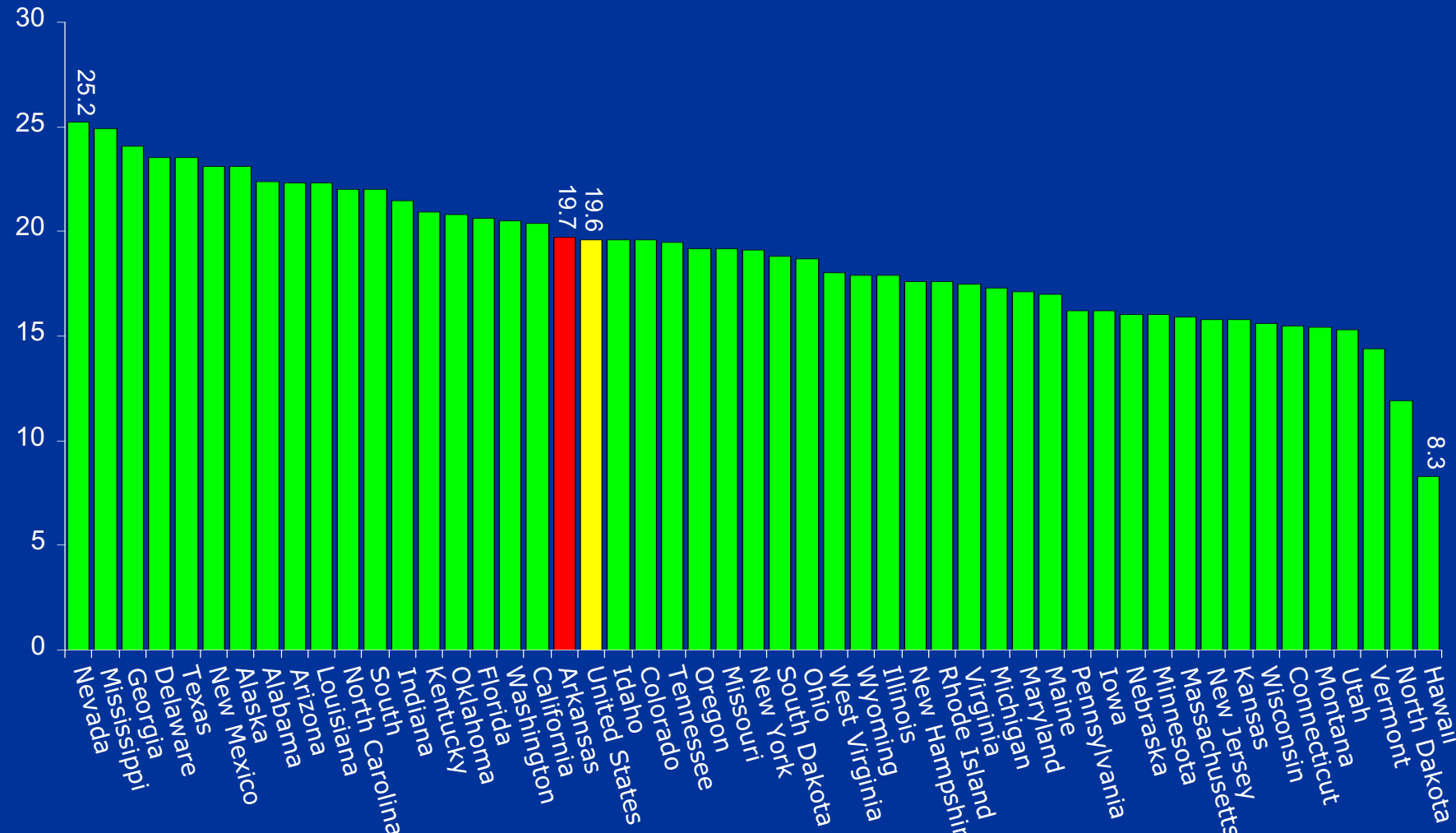
Percent of Population Age 25-64 with Less than a High School Diploma, 2000



Arkansas = 19.1%

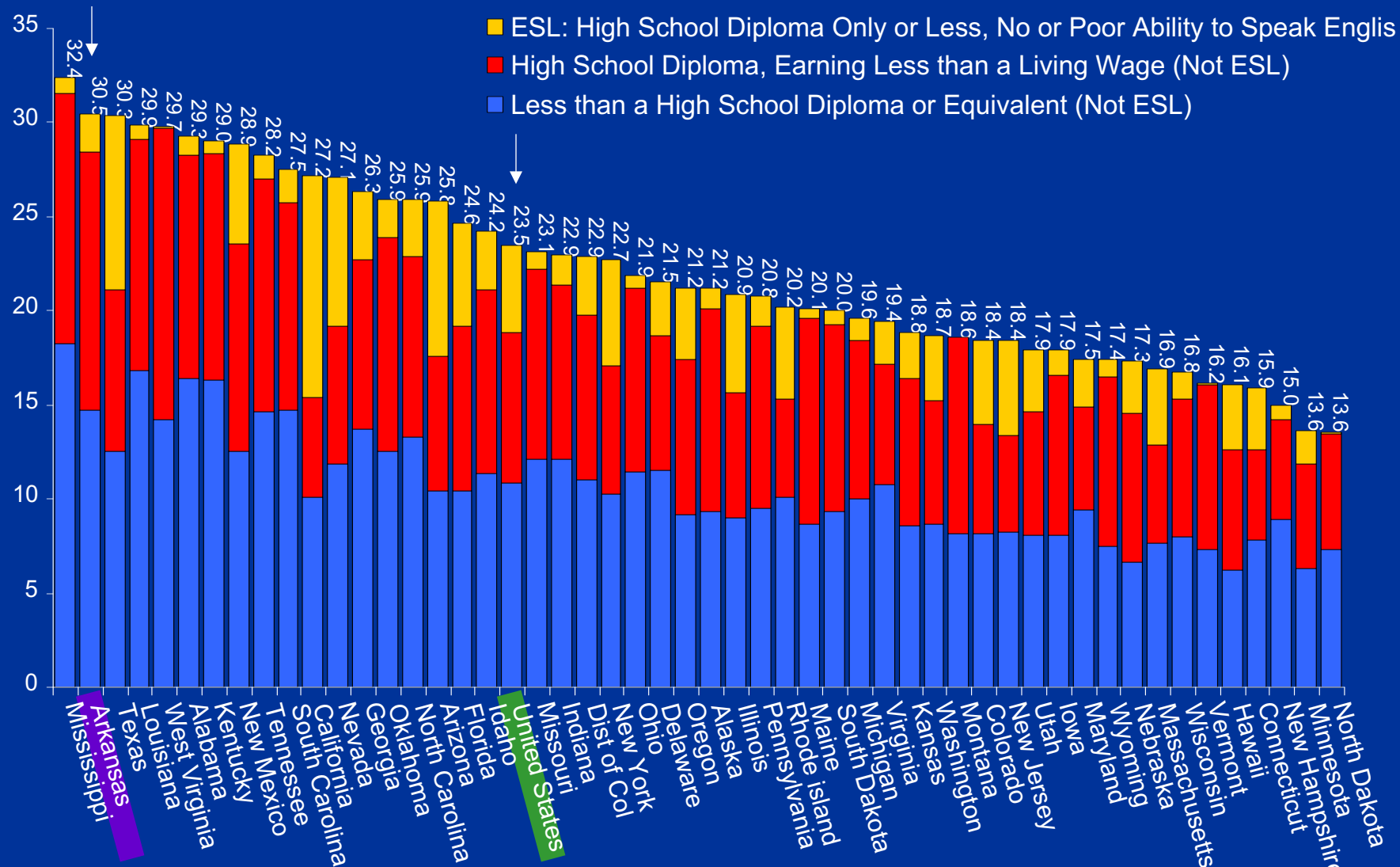
Source: U.S. Census Bureau

Percent of Population Age 18-24 with Less than a High School Diploma, 2005



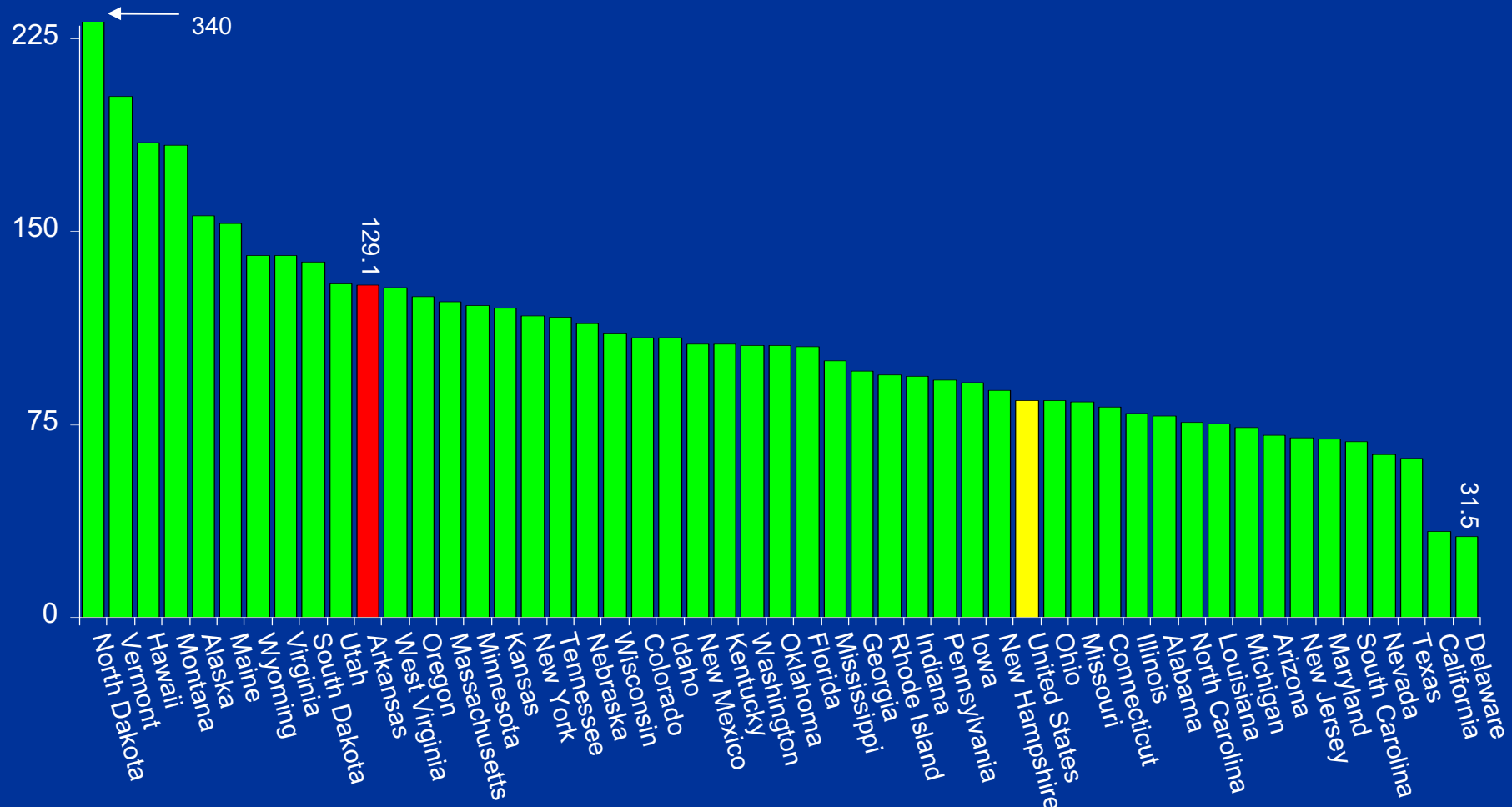
Source: U.S. Census Bureau, 2005 ACS

Adult Education and Literacy—Target Populations as a Percentage of All Adults Age 18-64 by State, 2005



Source: U.S. Census Bureau, 2005 ACS; PUMSNote: Incarcerated population not separated out.

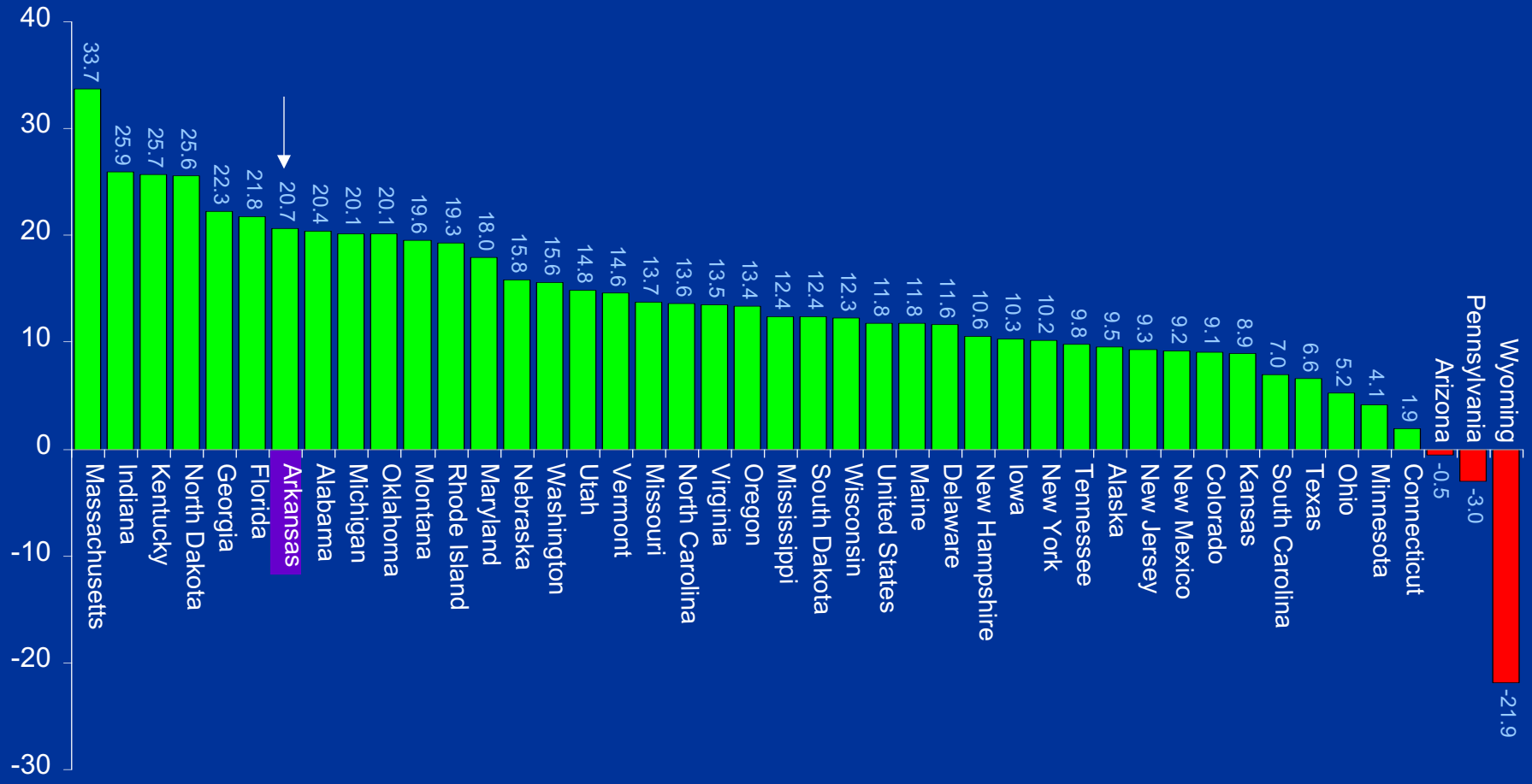
GEDs Awarded to Adults Age 16-24 per 1,000 Adults Age 16-24 with Less than a High School Diploma or Equivalent, 2005*



*Age 16-24 with no high school diploma or equivalent, not enrolled

Source: GED Testing Service, U.S. Census Bureau, 2005 ACS

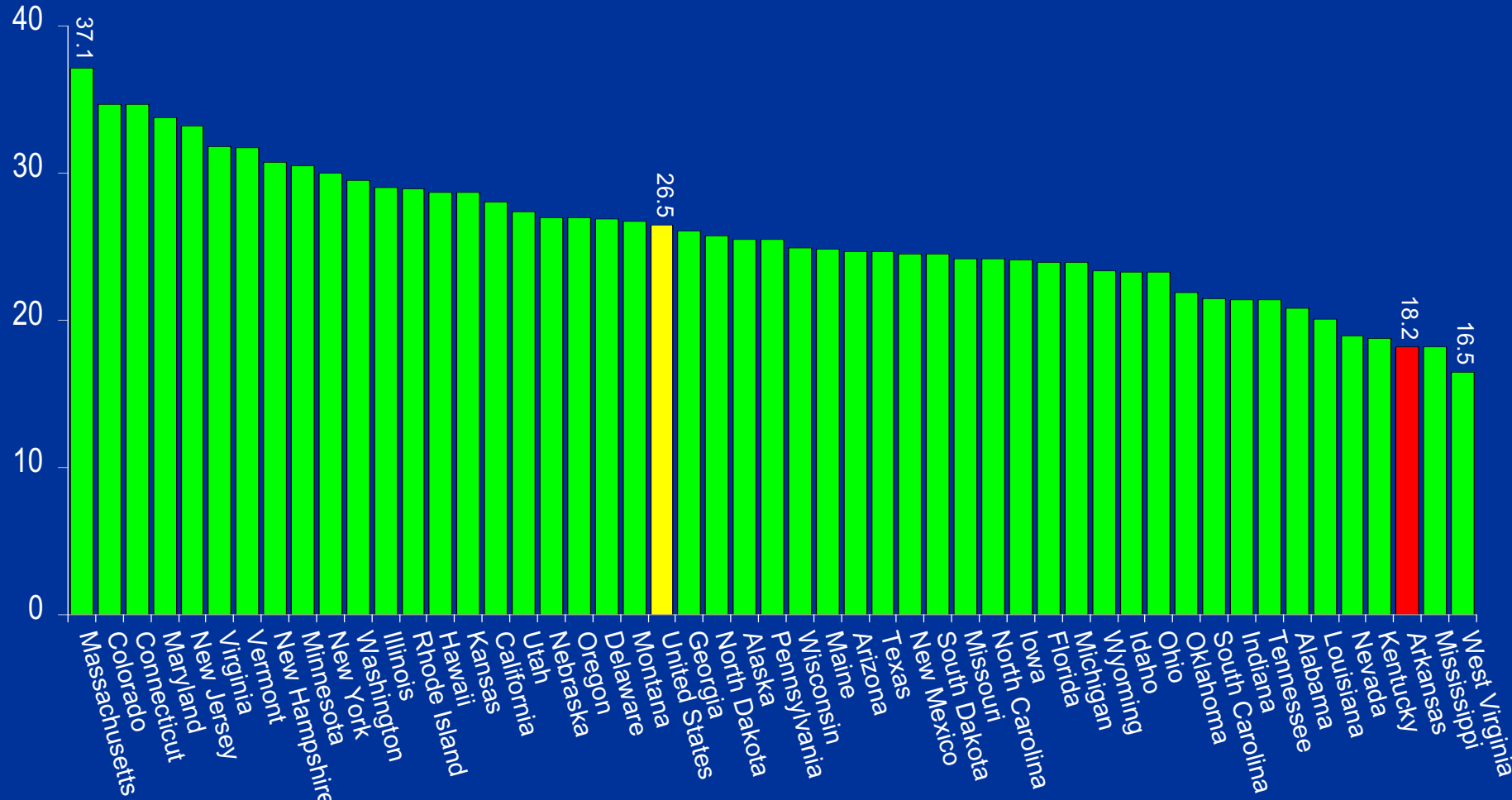
Change in Percentage of All GEDs Awarded to High School Students Age 16-18—By State, 1990 and 2005



Note: 1990 data not available for California, Hawaii, Idaho, Illinois, Louisiana, Nevada, West Virginia.

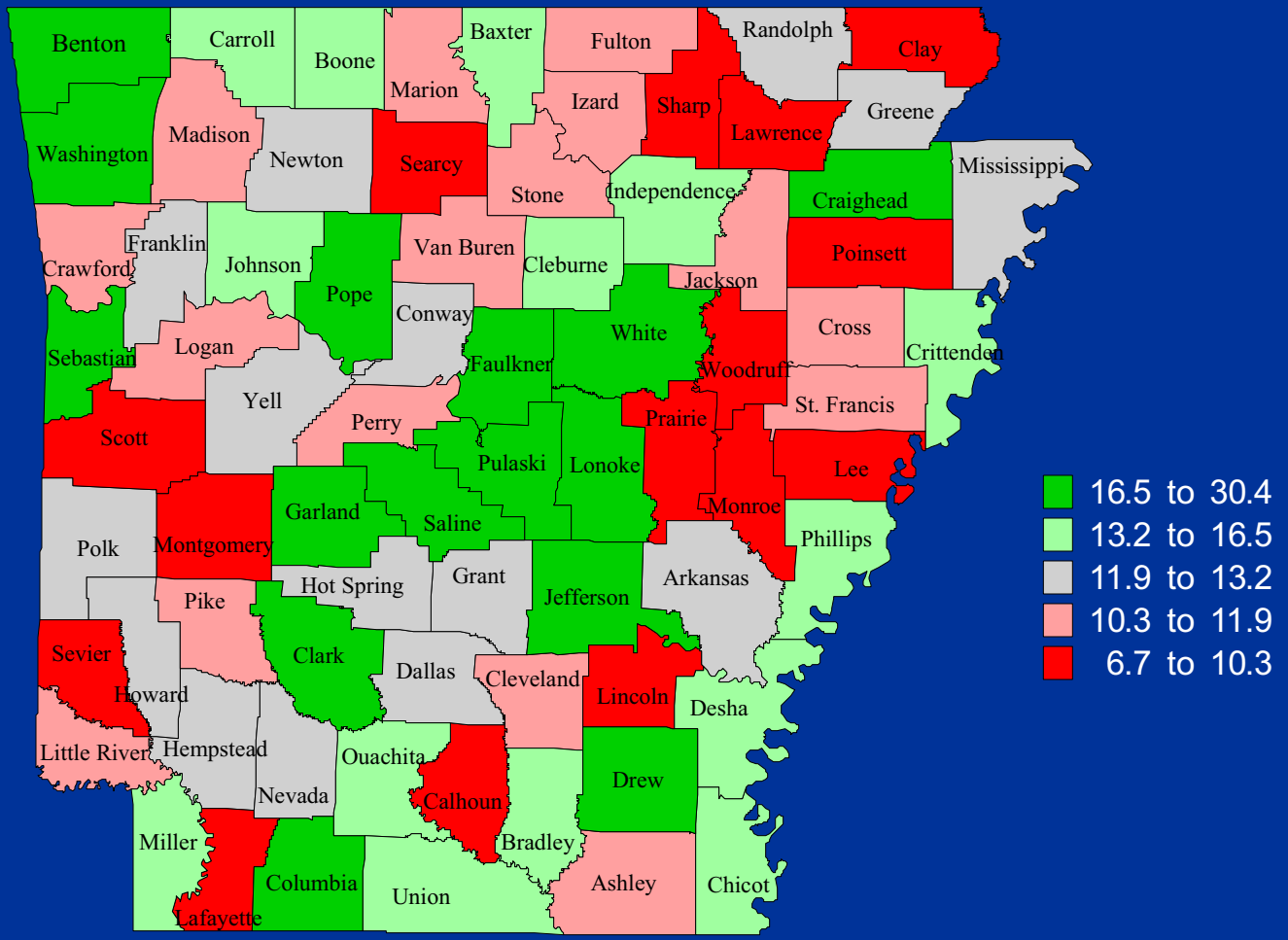
Source: GED Testing Service

Percent of Population Age 25-64 with a Bachelor's Degree or Higher, 2000



Source: U.S. Census Bureau, 2000

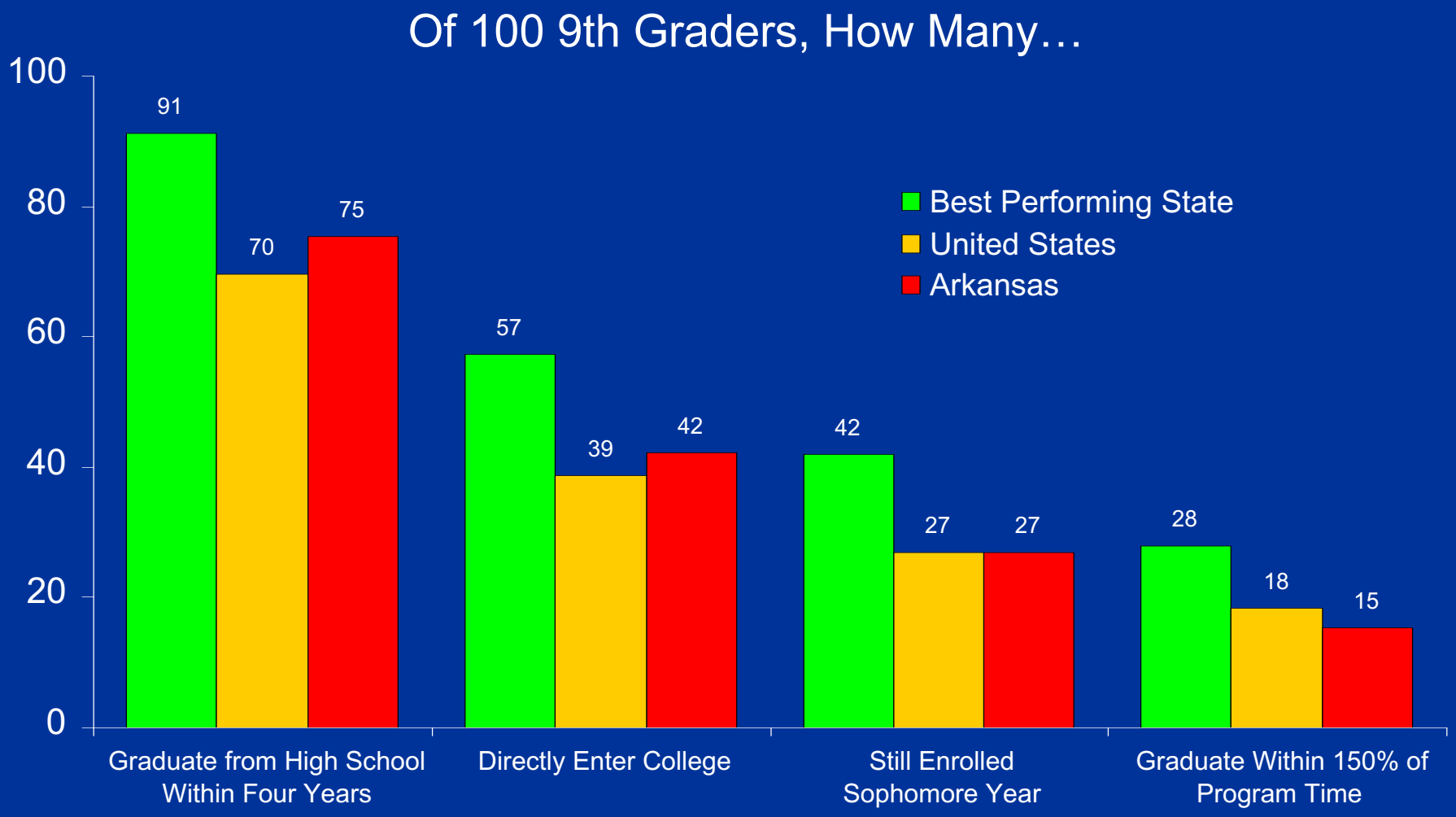
Percent of Population Age 25-64 with a Bachelor's Degree or Higher, 2000



Arkansas = 18.2%
Source: U.S. Census Bureau

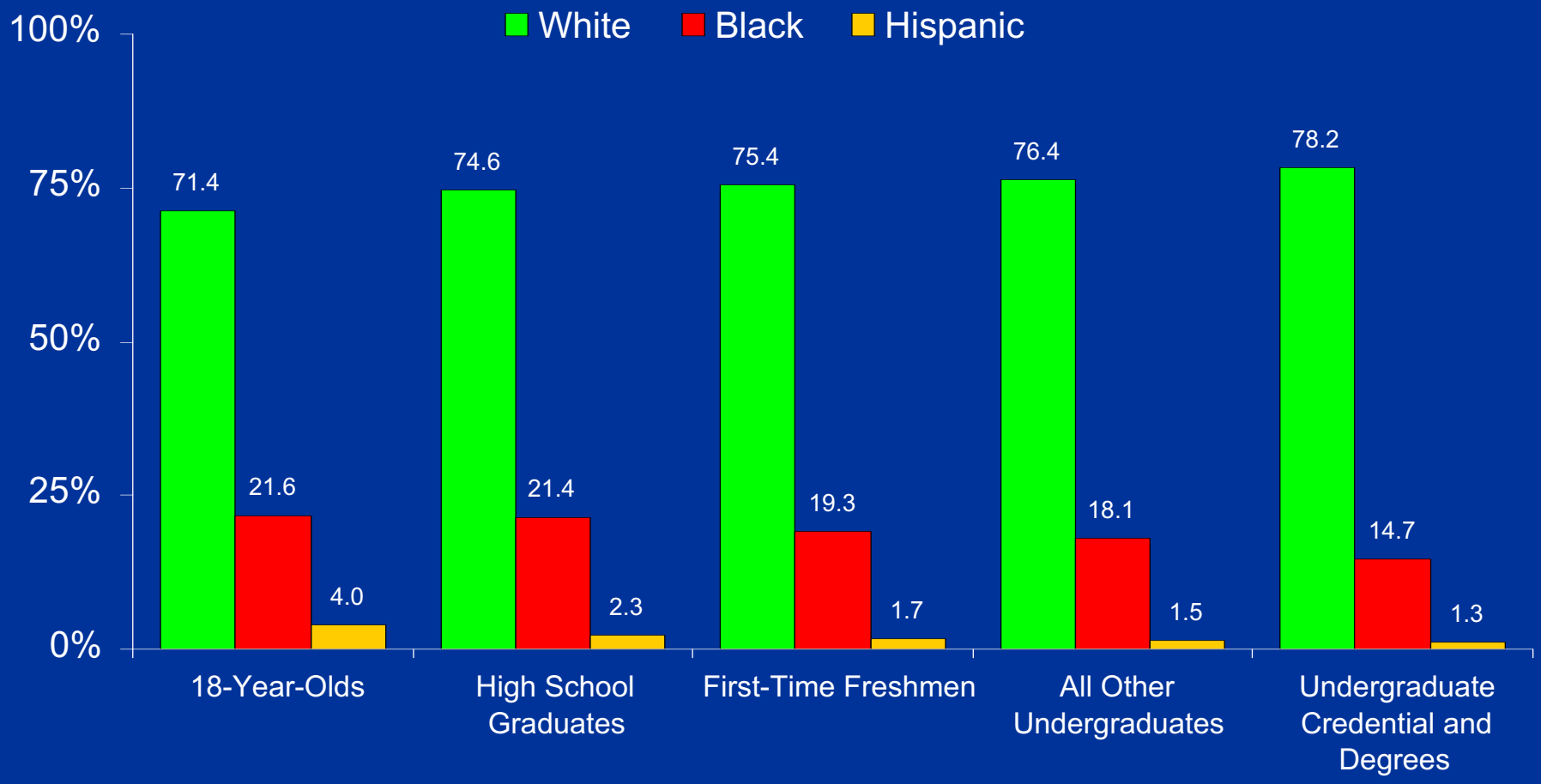
- *The Student Pipeline*

Student Pipeline, 2004



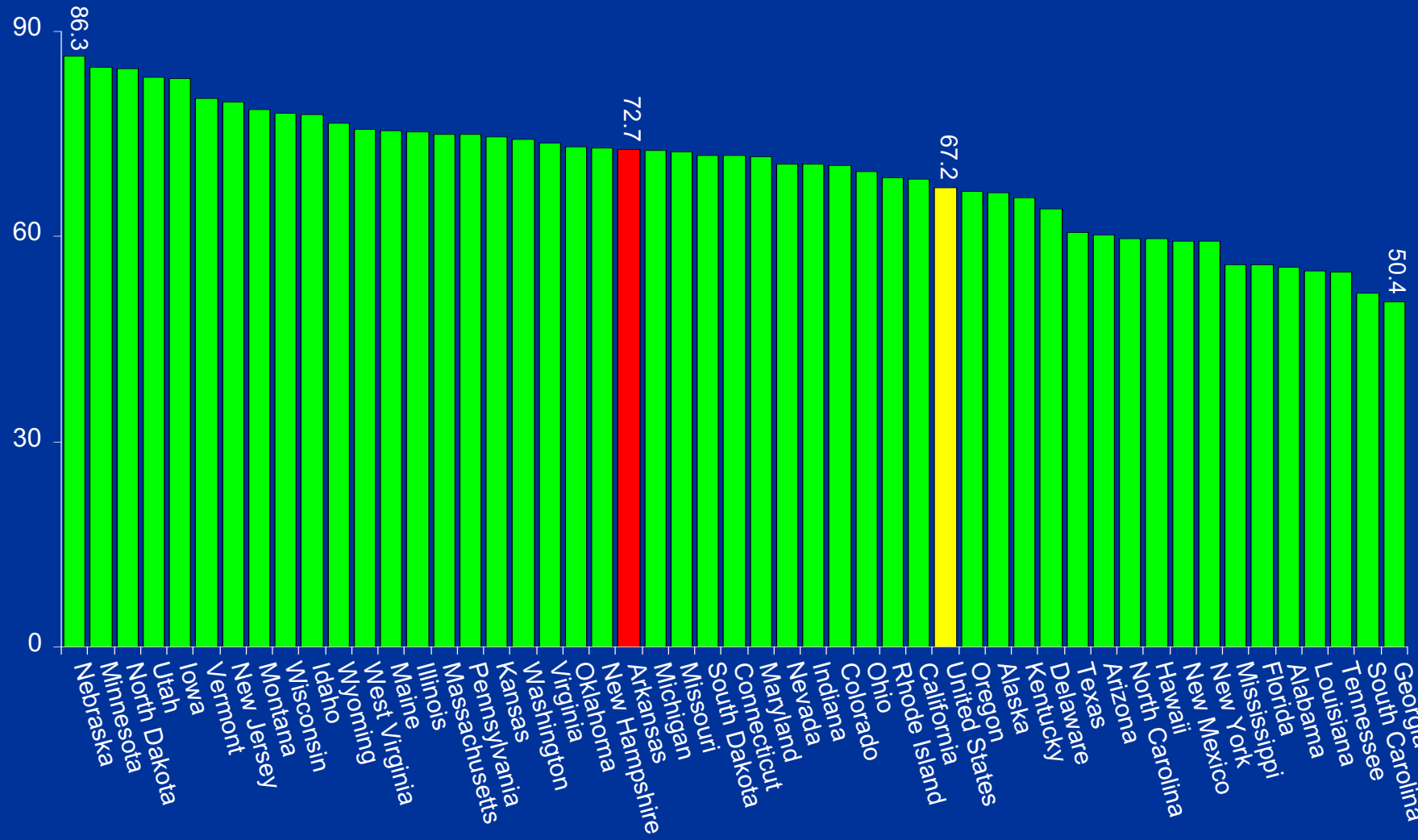
Source:NCES Common Core Data, NCES IPEDS 2002 Residency and Migration Survey, ACT Institutional Survey, NCES IPEDS Graduation Rate Survey

Race/Ethnic Representation at Each Stage of the Education Pipeline, 2002



Source:U.S. Census Bureau; NCES Common Core Data; IPEDS Enrollment and Completions Surveys

High School Graduation Rates—Public High School Graduates as a Percent of 9th Graders Four Years Earlier, 2002



Source: Tom Mortenson, Postsecondary Opportunity

MEASURING UP 2006

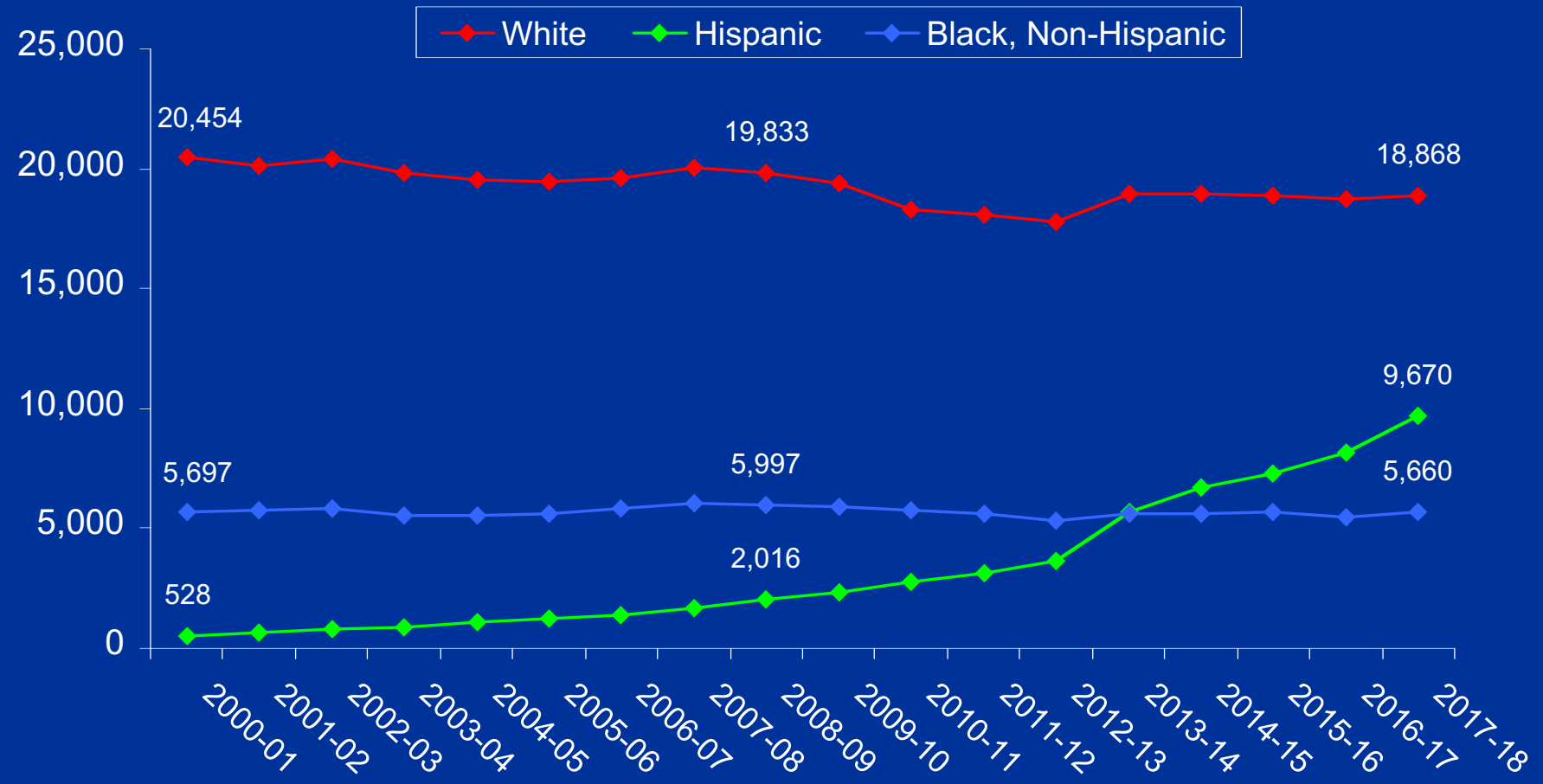
THE STATE REPORT CARD ON HIGHER EDUCATION

PREPARATION	Arkansas		Top States 2006
	1992*	2006	
High School Completion (20%)			
18- to 24-year-olds with a high school credential	88%	86%†	94%
K–12 Course Taking (35%)			
9th to 12th graders taking at least one upper-level math course	36%	50%	64%
9th to 12th graders taking at least one upper-level science course	19%	28%	40%
8th grade students taking algebra	3%	16%	35%
12th graders taking at least one upper-level math course	n/a	53%	66%
K–12 Student Achievement (35%)			
8th graders scoring at or above "proficient" on the national assessment exam:			
in math	10%	22%	38%
in reading	23%	26%	38%
in science	22%	23%	41%
in writing	13%	19%	41%
Low-income 8th graders scoring at or above "proficient" on the national assessment exam in math	5%	13%	22%
Number of scores in the top 20% nationally on SAT/ACT college entrance exam per 1,000 high school graduates	98	133	237
Number of scores that are 3 or higher on an Advanced Placement subject test per 1,000 high school juniors and seniors	18	87	217
Teacher Quality (10%)			
7th to 12th graders taught by teachers with a major in their subject	52%	68%	81%

*The indicators report data beginning in 1992 or the closest year for which reliable data are available. See the *Technical Guide for Measuring Up 2006.*

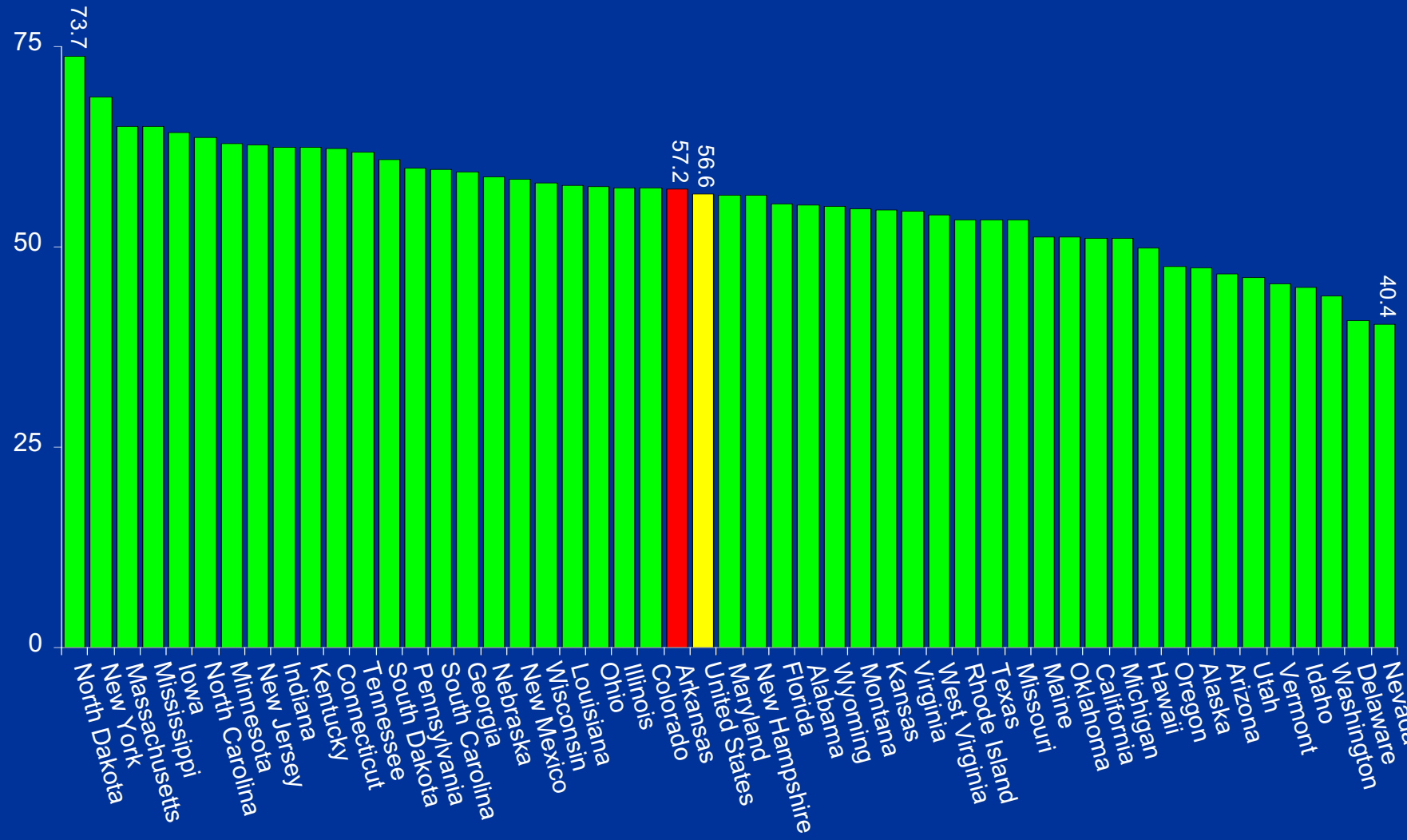
†Eighty-one percent of 18-24-year-olds have a regular high school diploma; 5% have a GED. The numbers shown for a regular high school diploma and a GED may not exactly equal the number for a high school credential due to rounding.

Arkansas Projected High School Graduates By Race/Ethnicity from 2000-01 to 2017-18



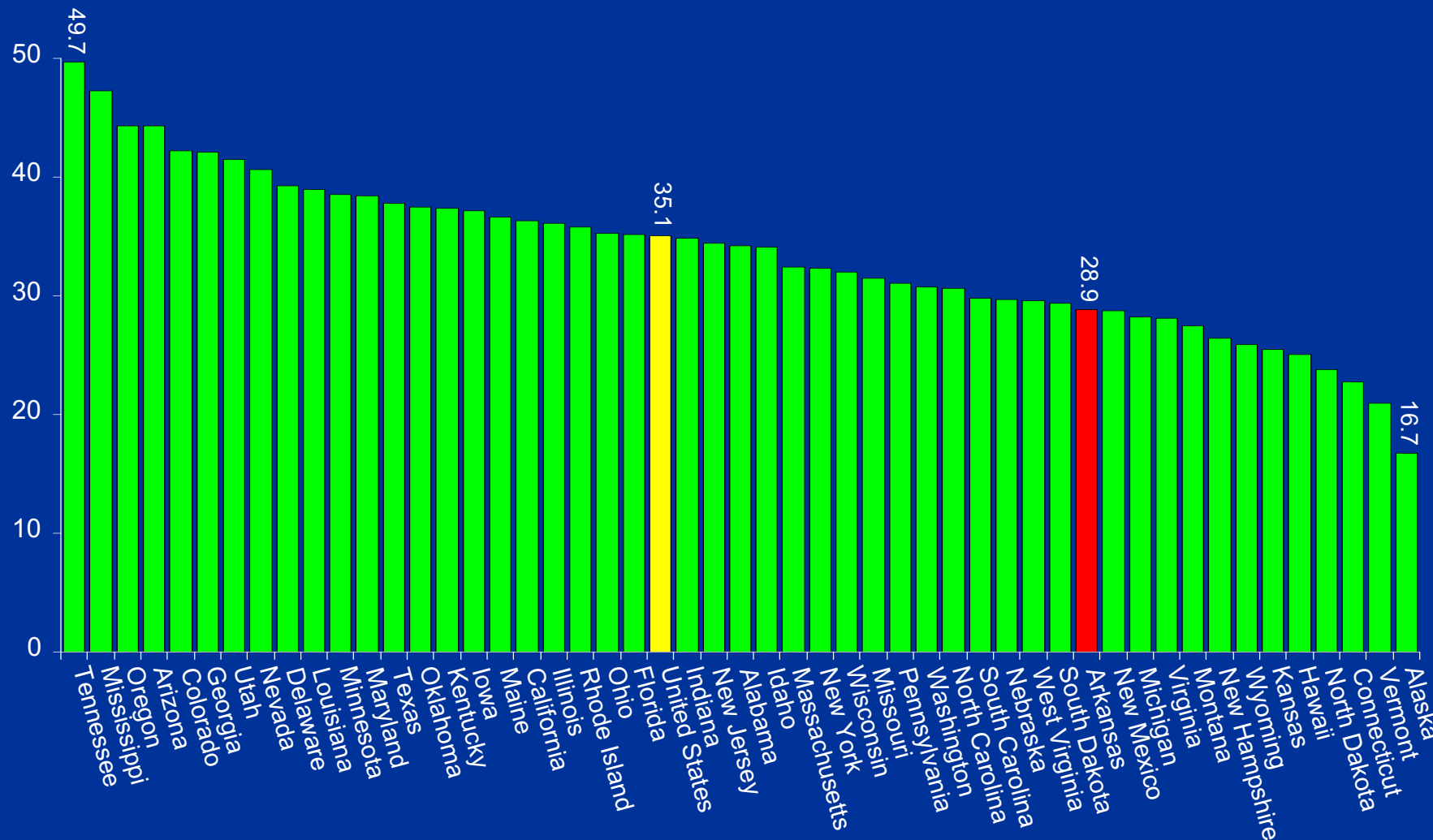
Source: Western Interstate Higher Education Commission (WICHE)

College-Going Rates—First-Time Freshmen Directly Out of High School as a Percent of Recent High School Graduates, 2002



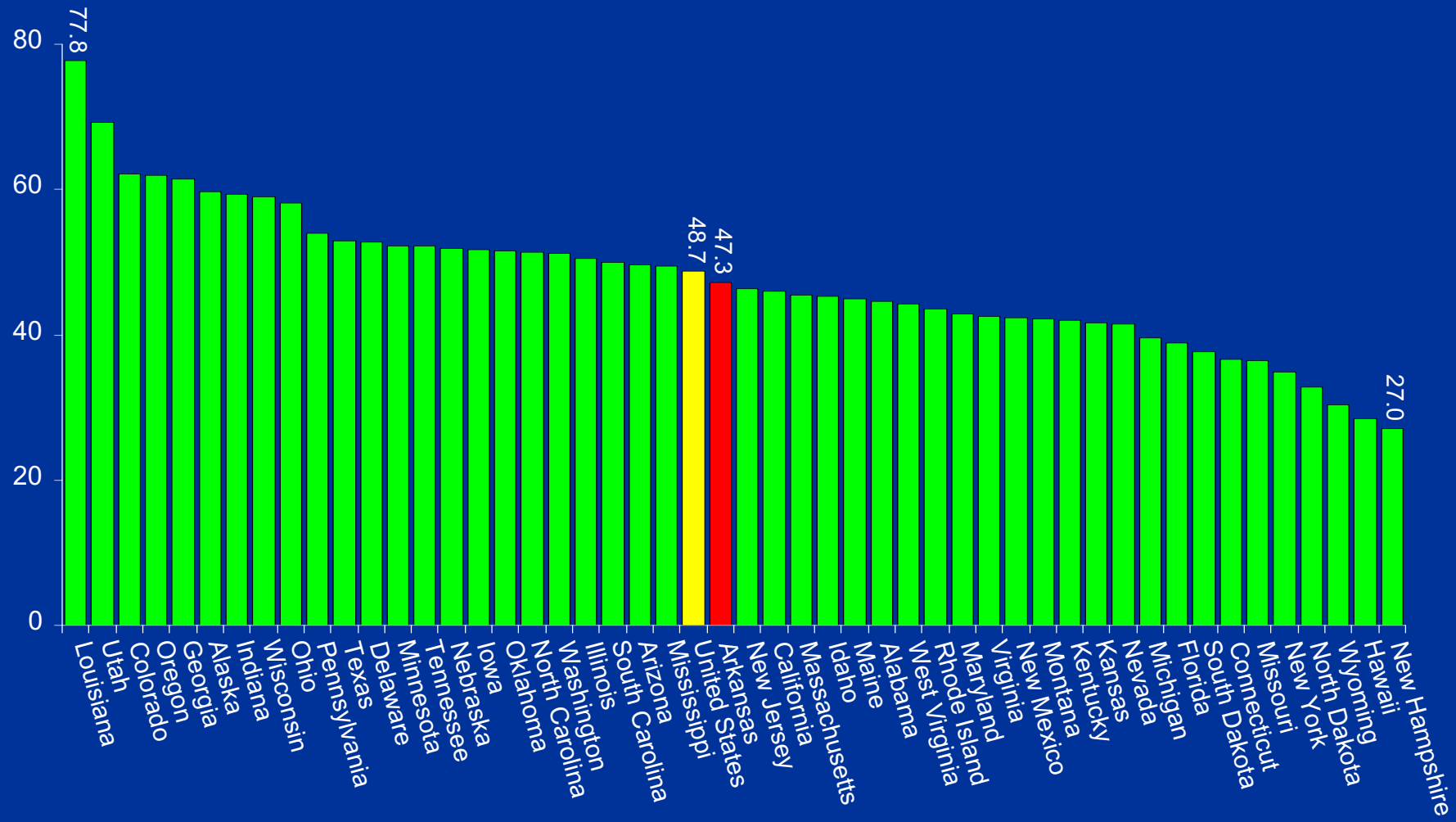
Source: Tom Mortenson, Postsecondary Opportunity

Percentage of First-Time College Students Enrolled In-State Who Are Not Directly Out of High School—All Sectors, 2004



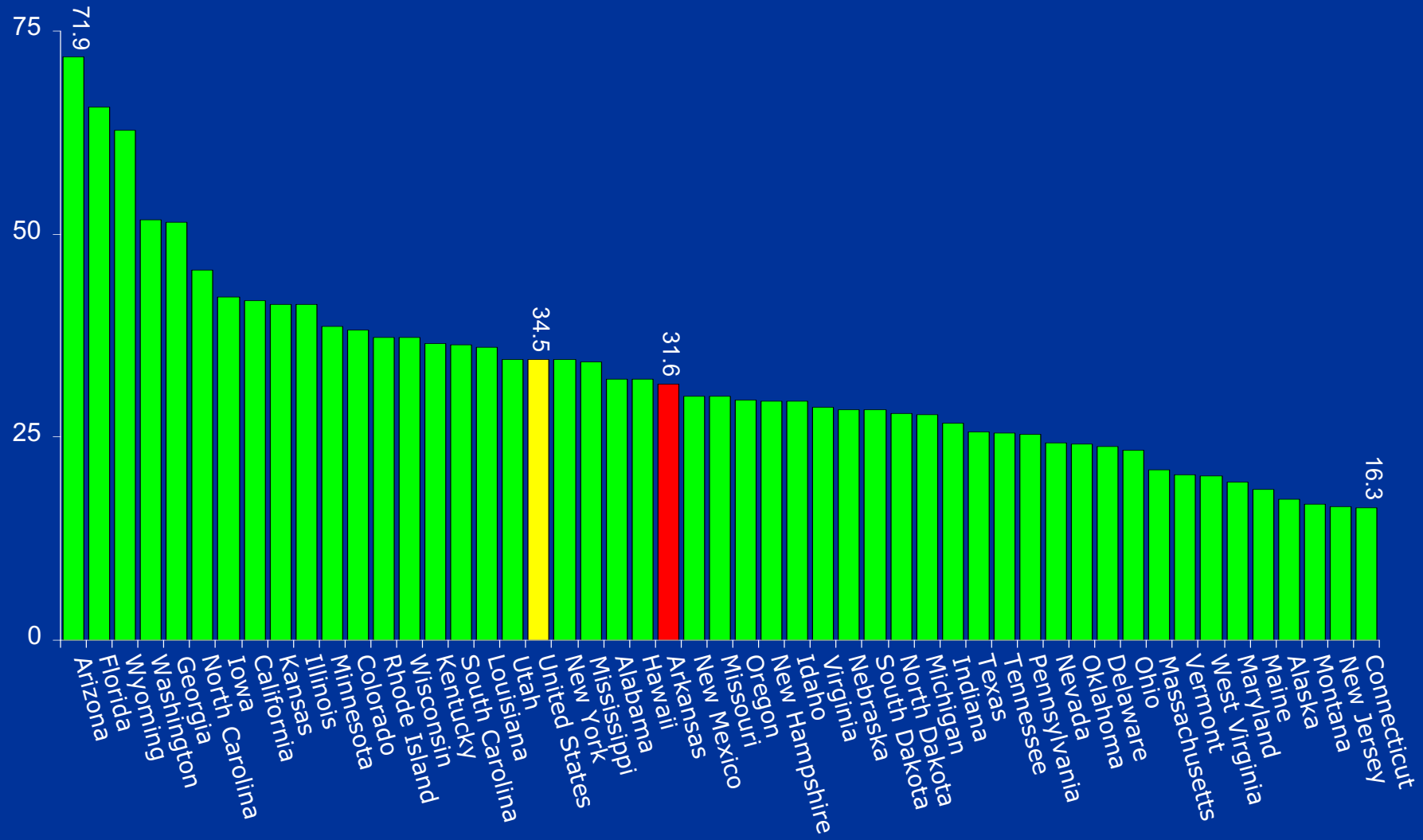
Source: NCES, IPEDS Fall Enrollment Survey 2004

Percentage of First-Time College Students Enrolled In-State Who Are Not Directly Out of High School— Public Two-Year Sectors, 2004



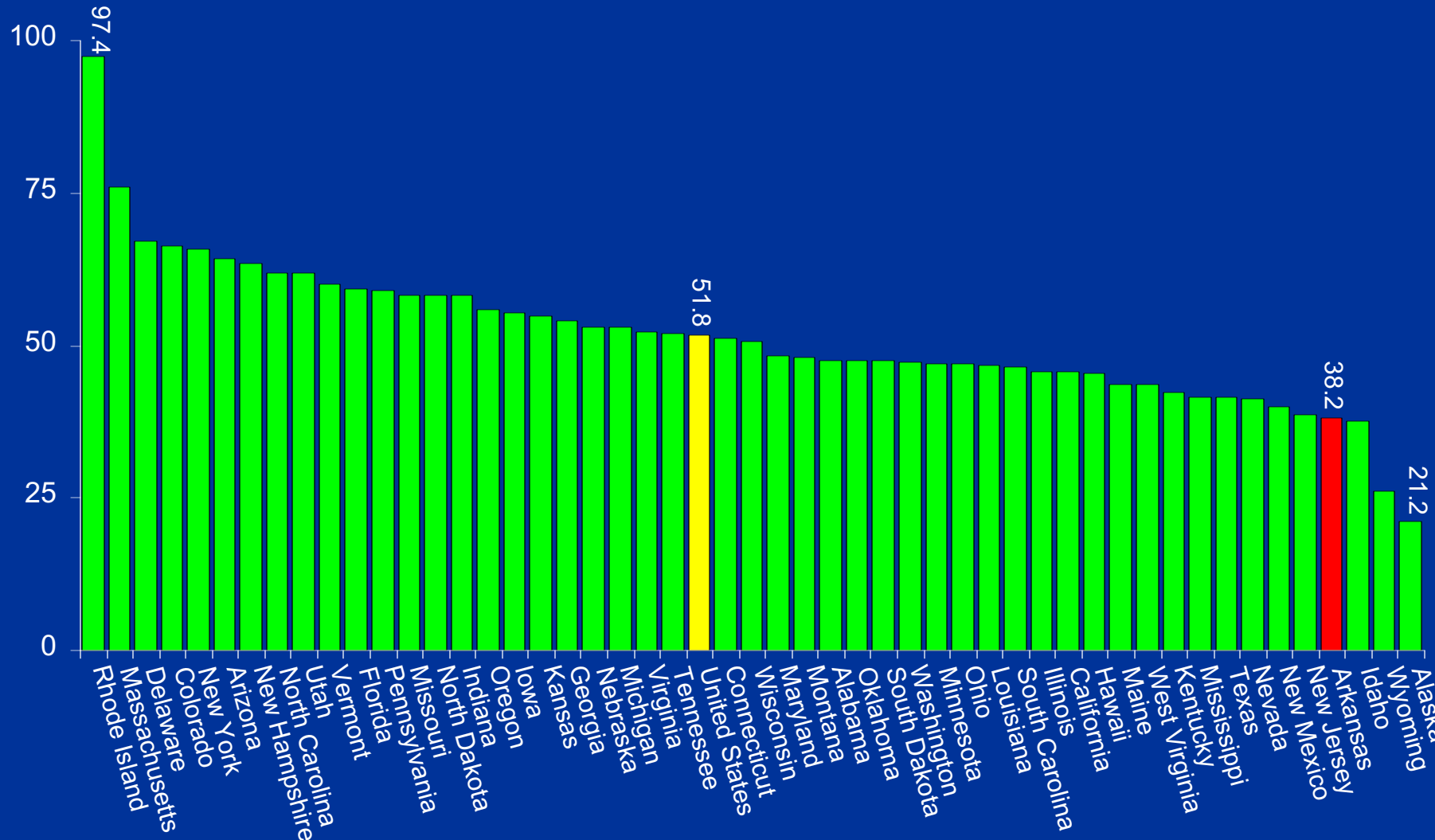
Source: NCES, IPEDS Fall Enrollment Survey 2004

Credentials Awarded (Two-Year or Less) Per 100 High School Graduates Three Years Earlier, 2003



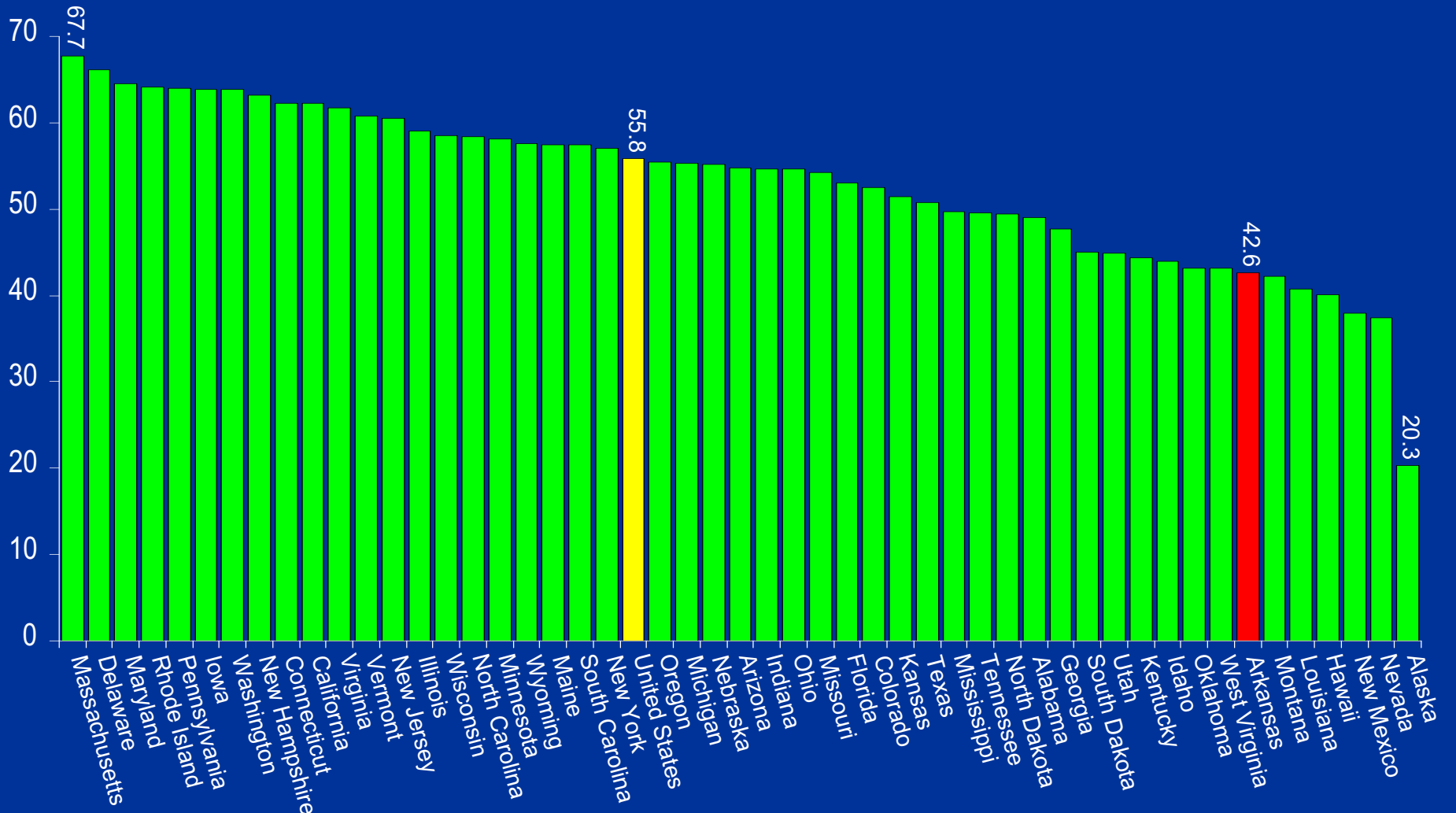
Source: NCES Common Core Data, IPEDS Completion Survey

Bachelor's Degrees Awarded per 100 High School Graduates Six Years Earlier, 2004



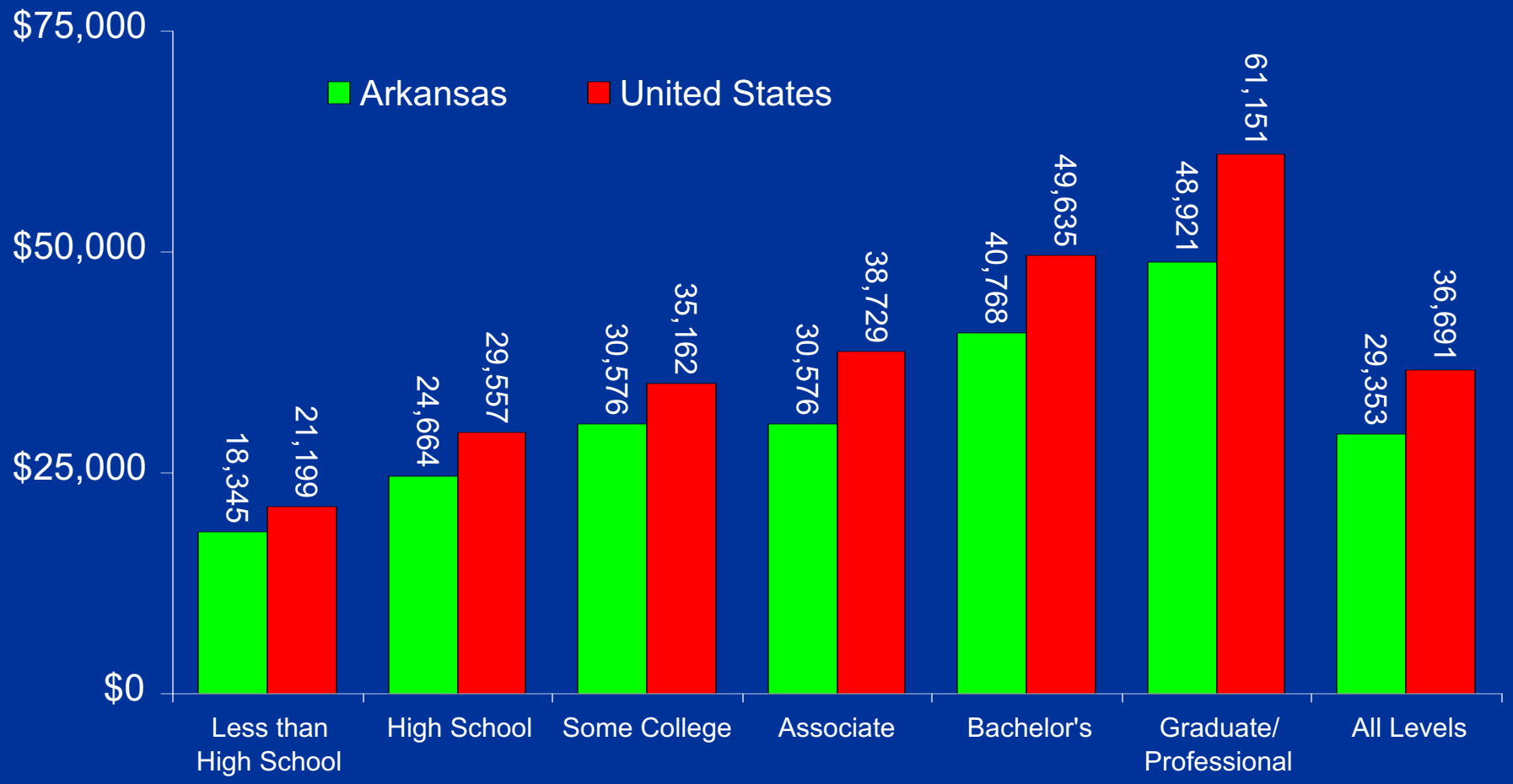
Source: NCES Common Core Data, IPEDS Completion Survey

Six-Year Graduation Rates at Four-Year Colleges, 2005 (Percent)



Source: NCES, IPEDS Graduation Rate Survey

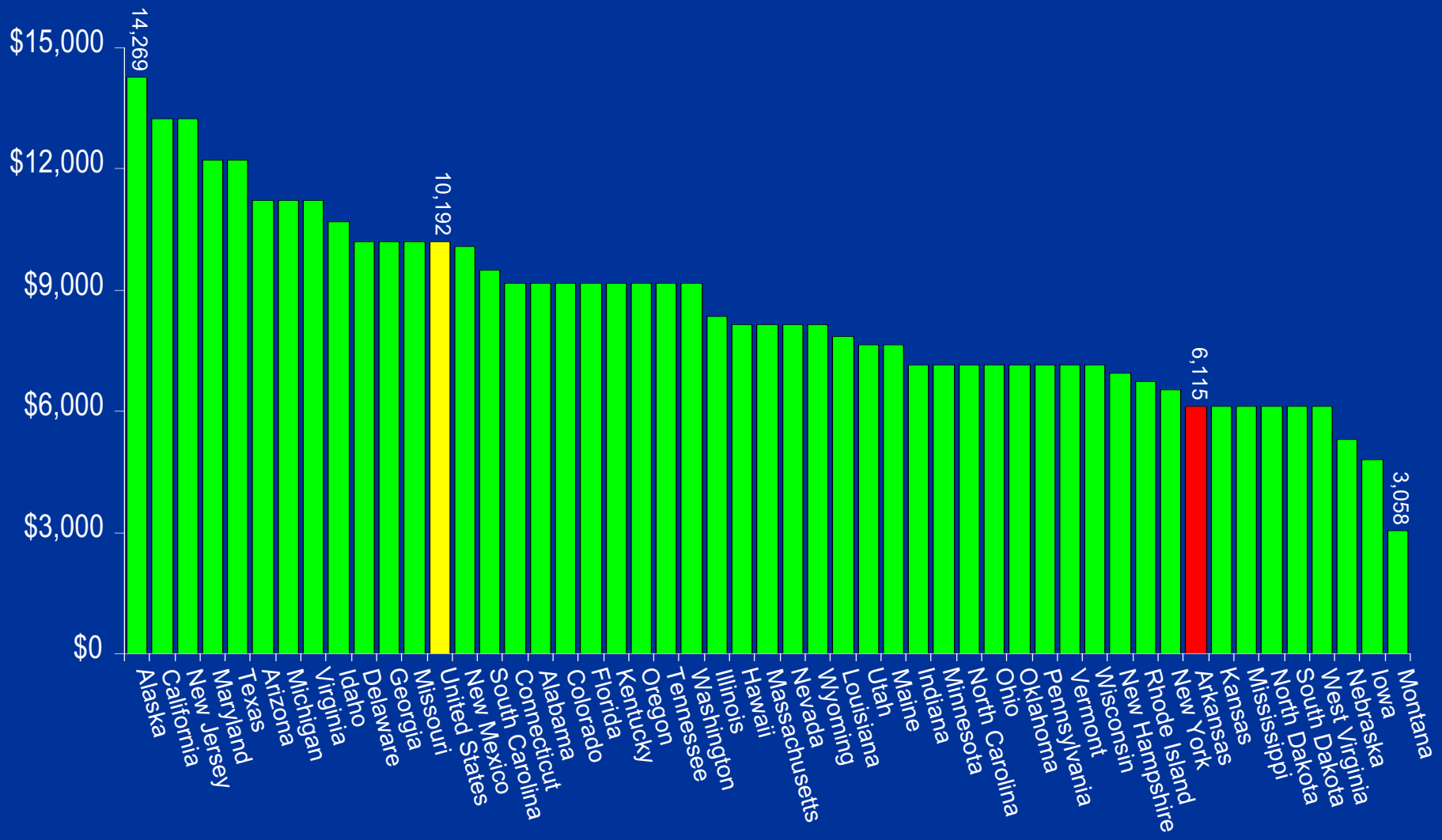
Median Earnings by Degree Level, 2005



Note:Data represent persons age 25-64 with positive earnings working 35+ hours per week.

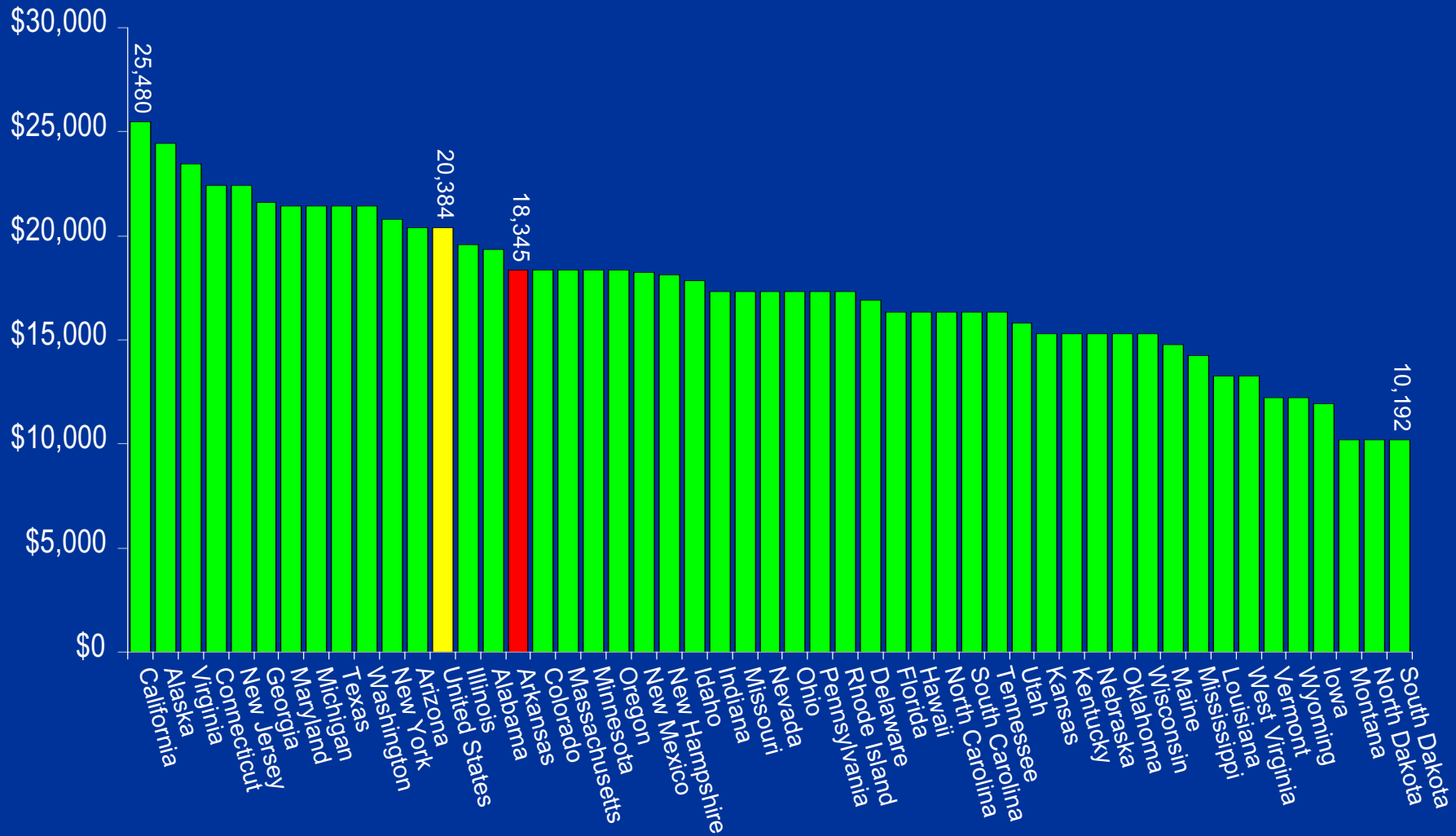
Source:U.S. Census Bureau, 2005 PUMS

Difference in Median Earnings Between a High School Diploma and an Associate Degree, 2005



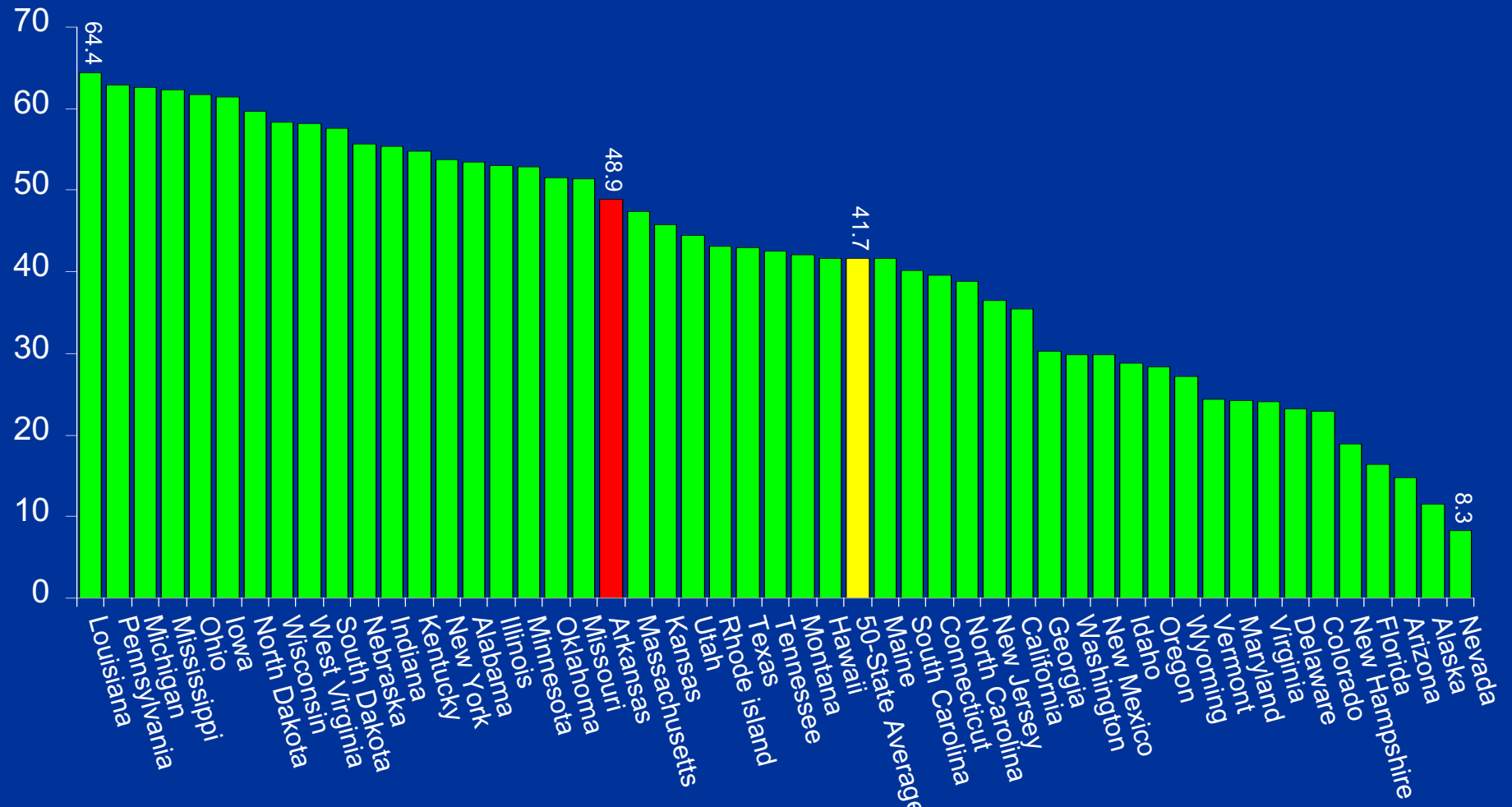
Source: U.S. Census Bureau, 2005 ACS PUMS File

Difference in Median Earnings Between a High School Diploma and a Bachelor's Degree, 2005



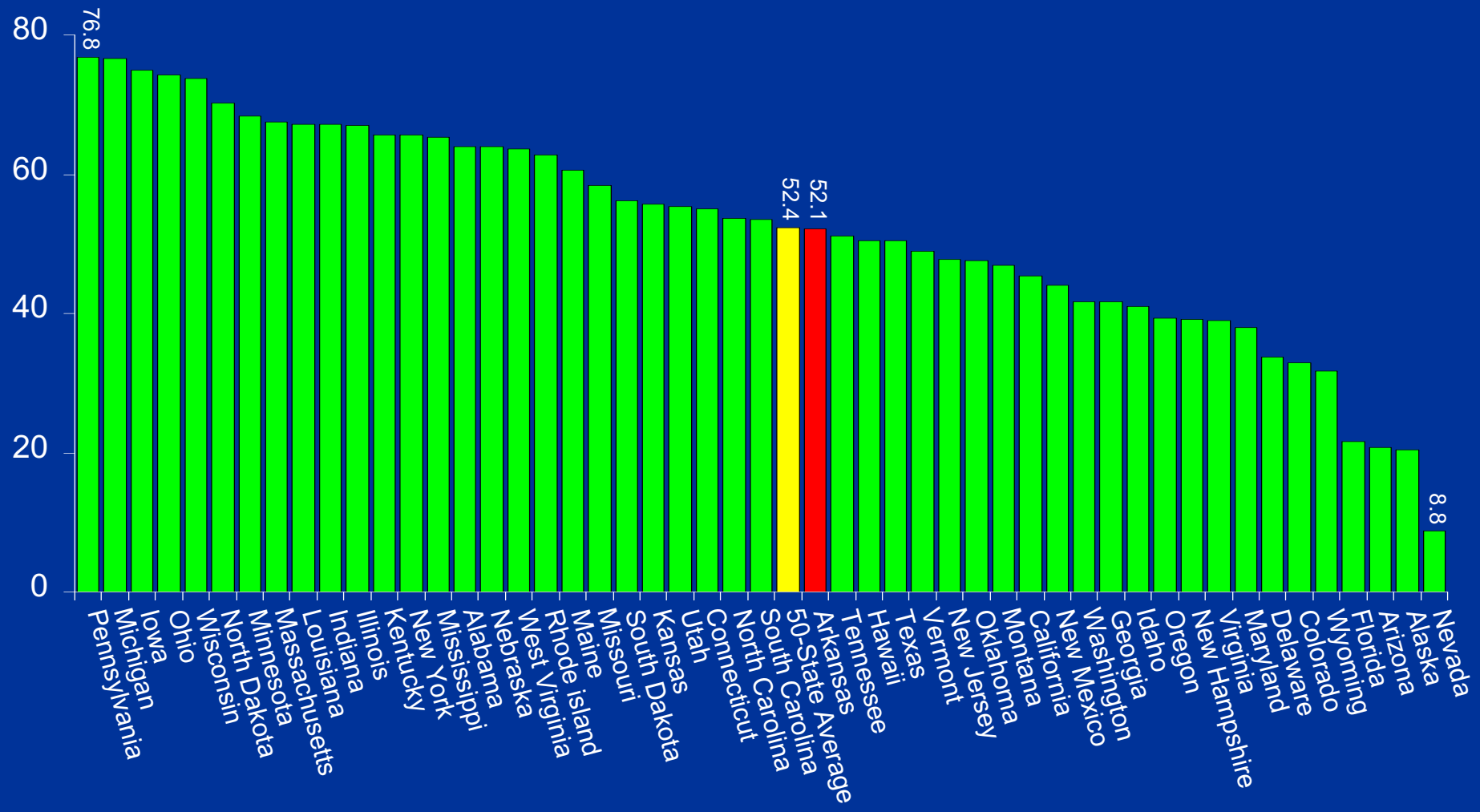
Source: U.S. Census Bureau, 2005 ACS PUMS File

Percent of Residents Age 25-64 with a Bachelor's Degree or Higher Born In-State, 2005



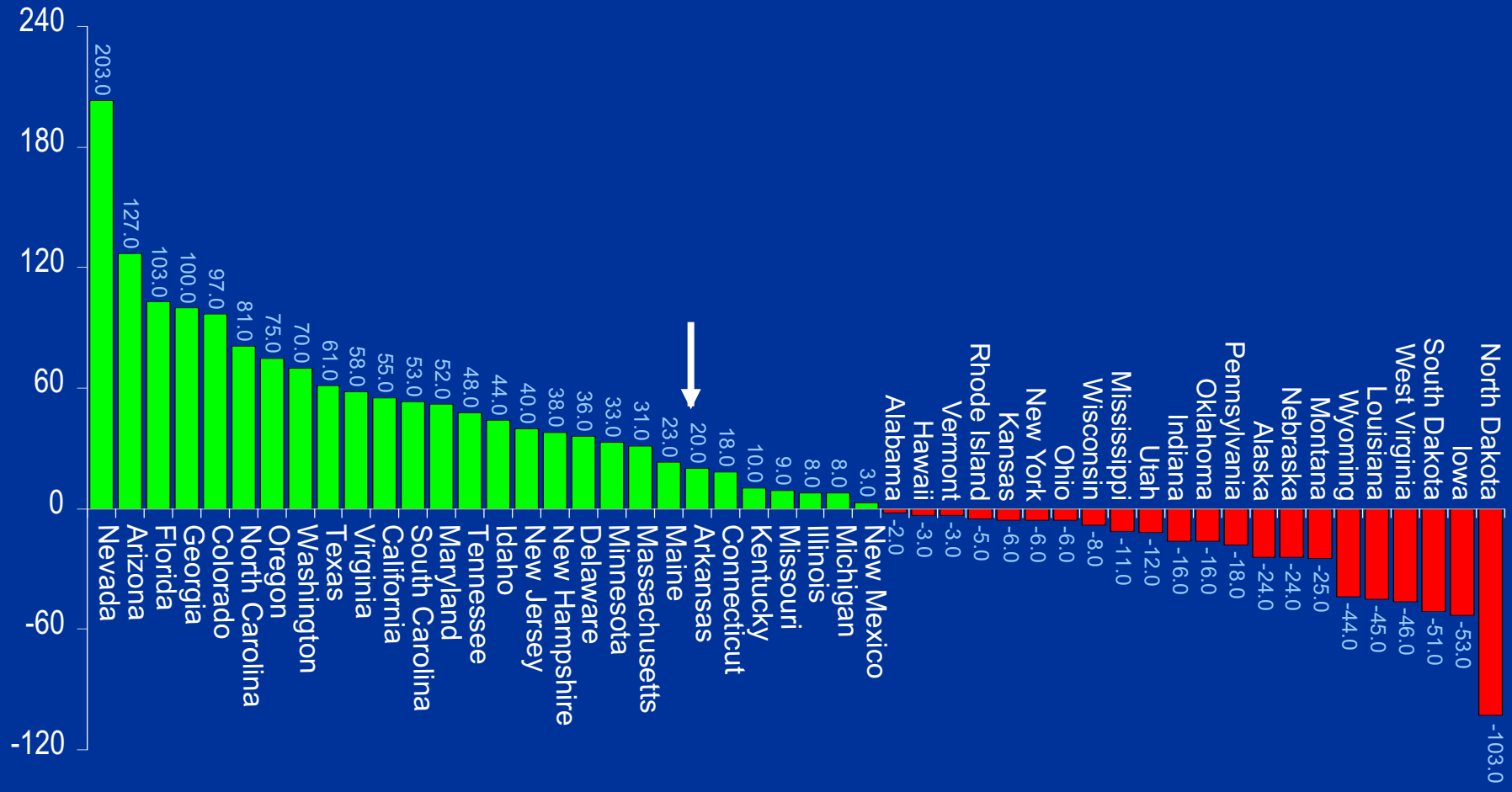
Source: 2005 ACS

Percent of Residents Age 25-64 with an Associate Degree Born In-State, 2005



Source: 2005 ACS

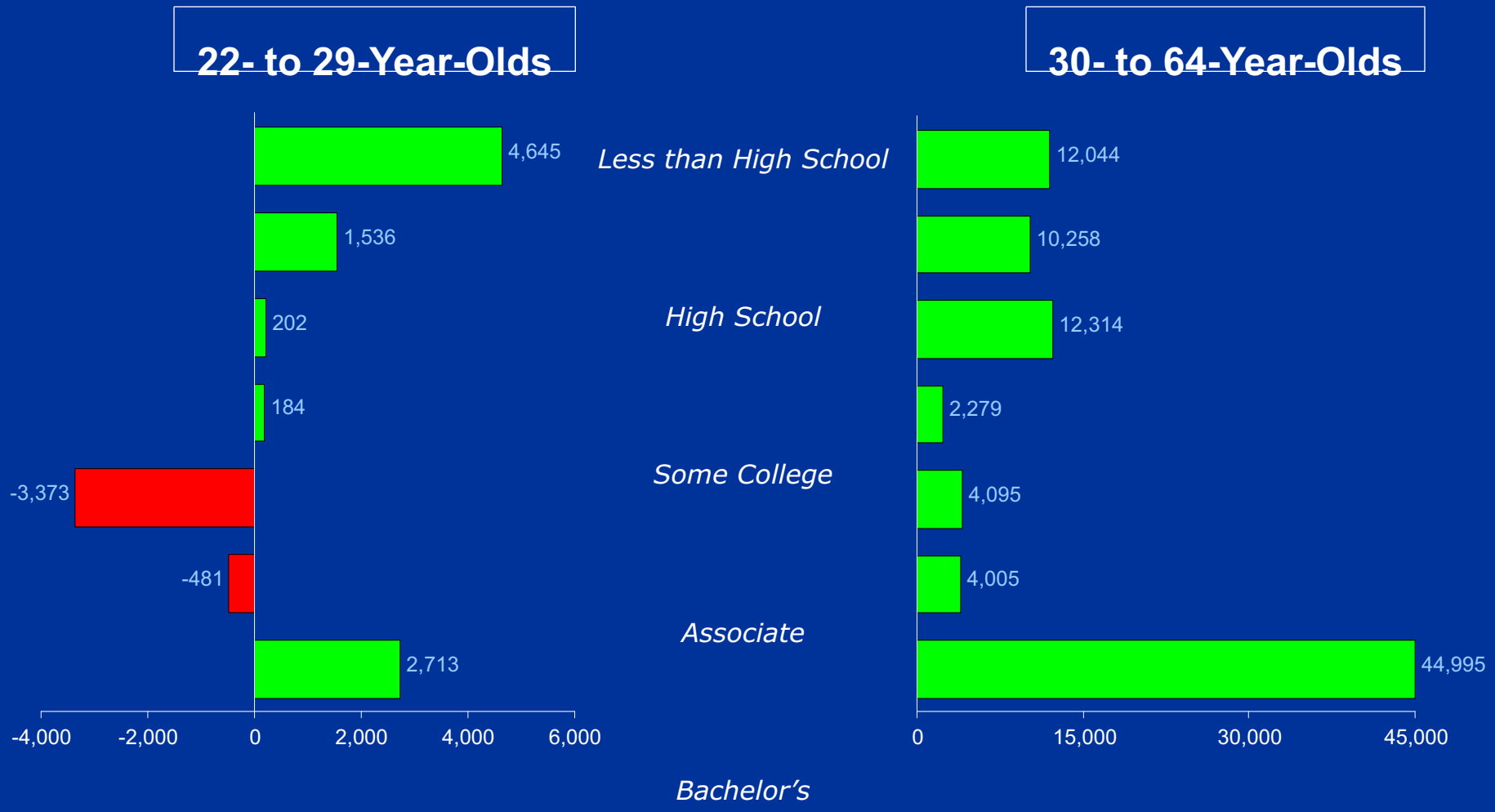
Migration Rate of College-Educated Residents Age 22-64—Associate and Higher, 1995-2000*



* Per 1,000 residents age 22-64 with college degrees.

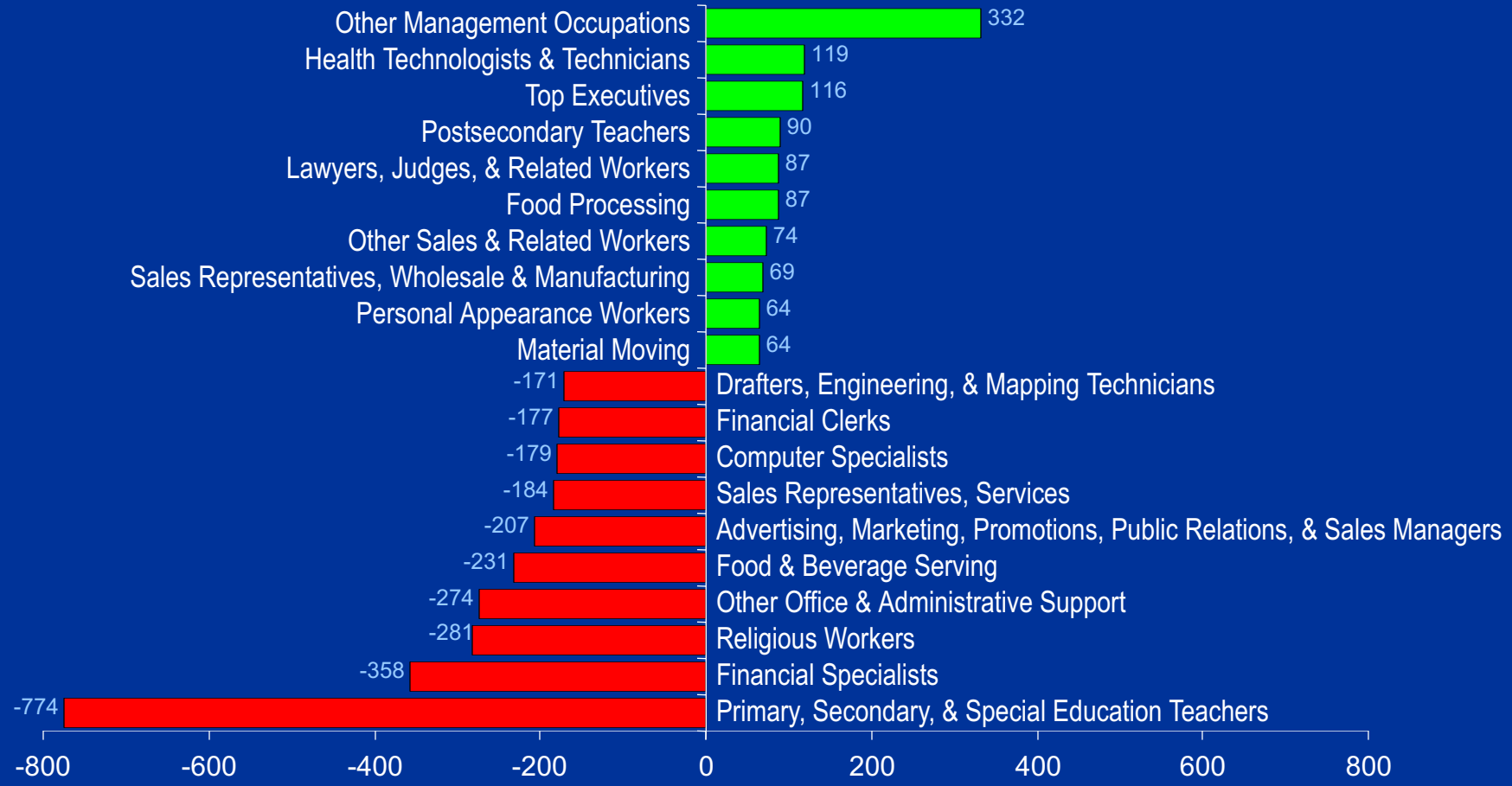
Source: U.S. Census Bureau, PUMS (based on 2000 Census)

Net Migration by Degree Level and Age Group—Arkansas



Source: U.S. Census Bureau, 2000 Public Use Microdata Samples (based on 2000 Decennial Census)

Arkansas Occupations with High Net Imports and Exports, 1995-2000—Residents Age 22-29 with College Degrees



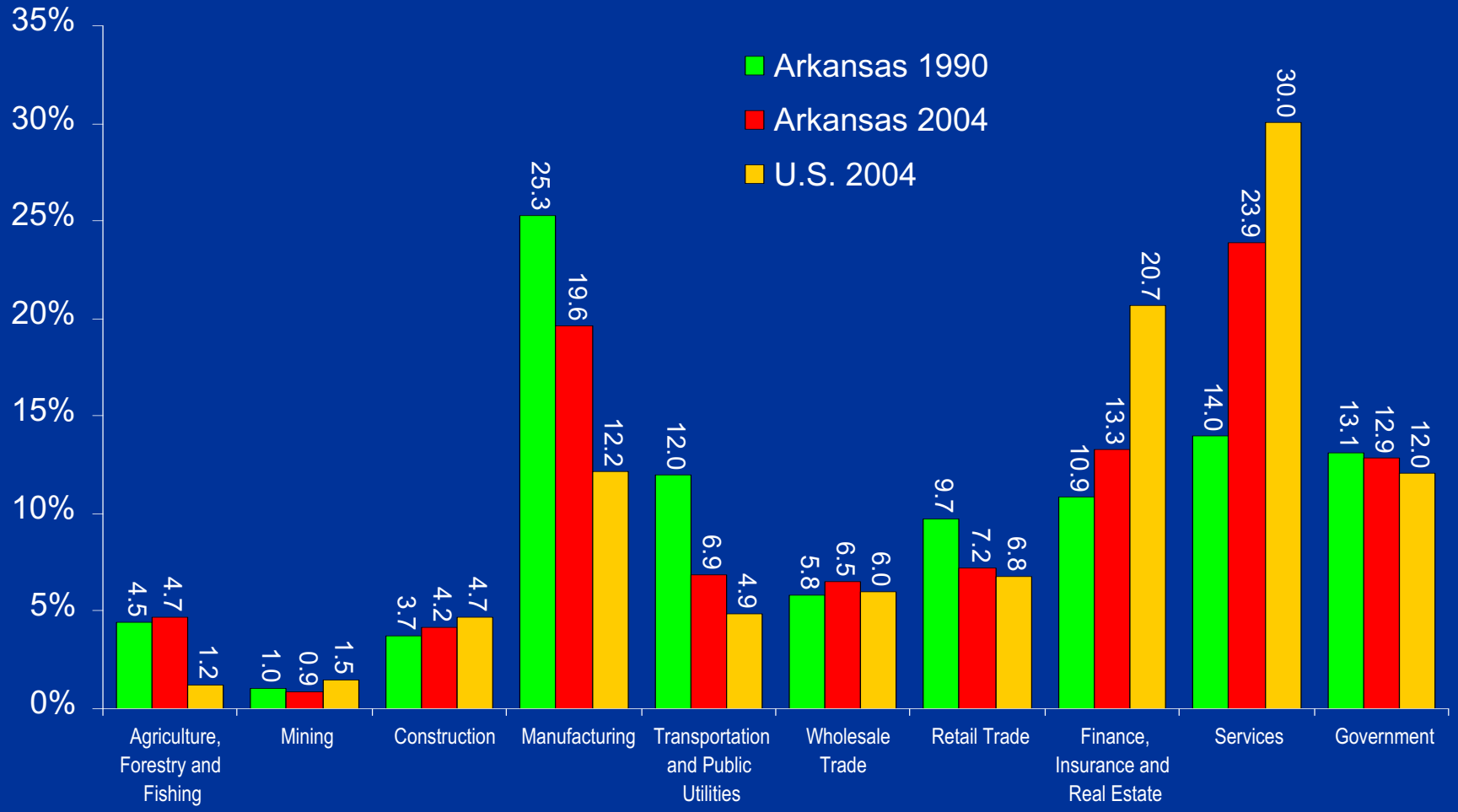
Source: U.S. Census Bureau, 2000 Census; 5% Public Use Microdata Sample (PUMS) Files

Arkansas Occupations with High Net Imports and Exports, 1995-2000—Residents Age 30-64 with College Degrees

Source: U.S. Census Bureau, 2000 Census; 5% Public Use Microdata Sample (PUMS) Files

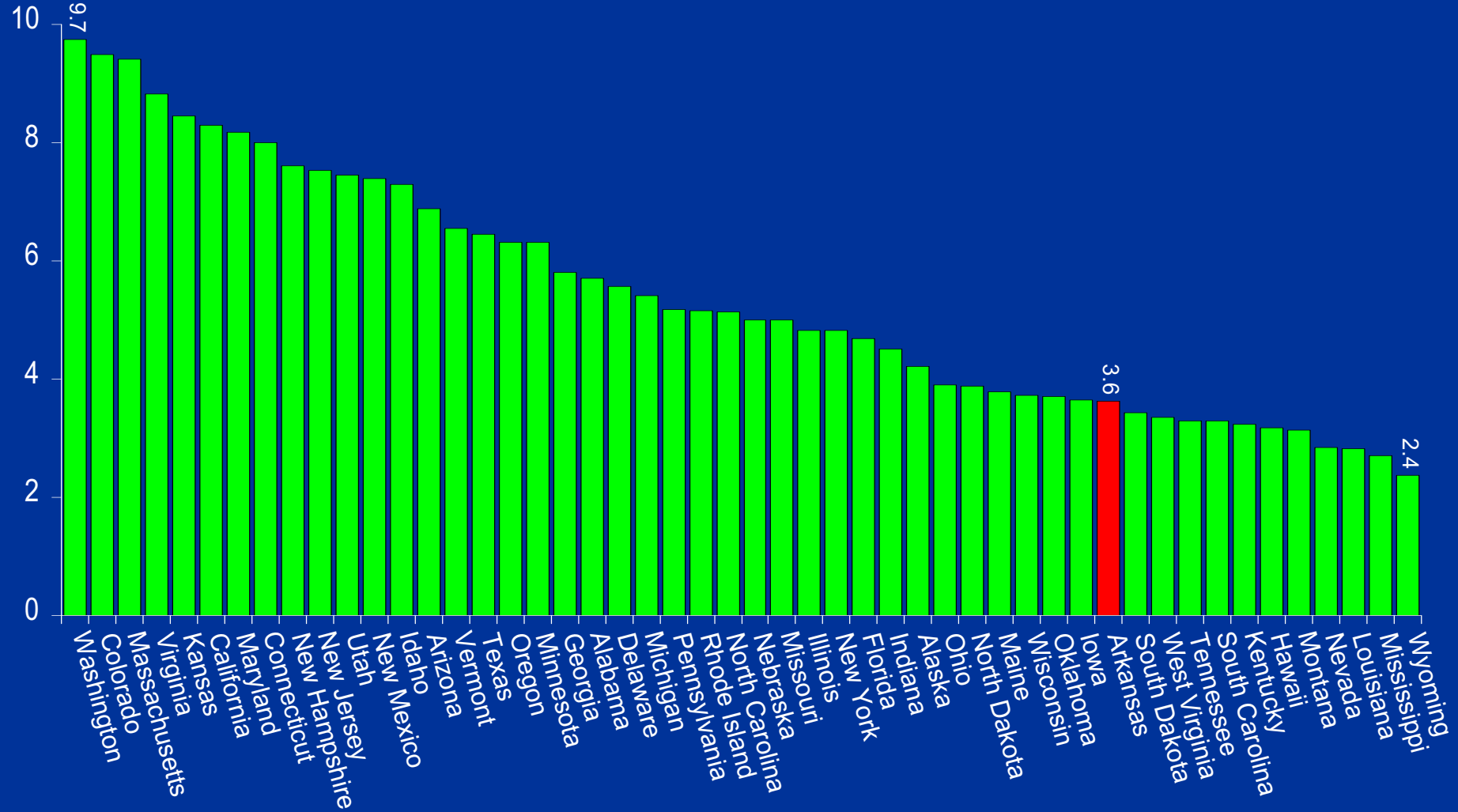
- *The Economy*

Percent of Total Gross State Product by Industry and Comparison to U.S.



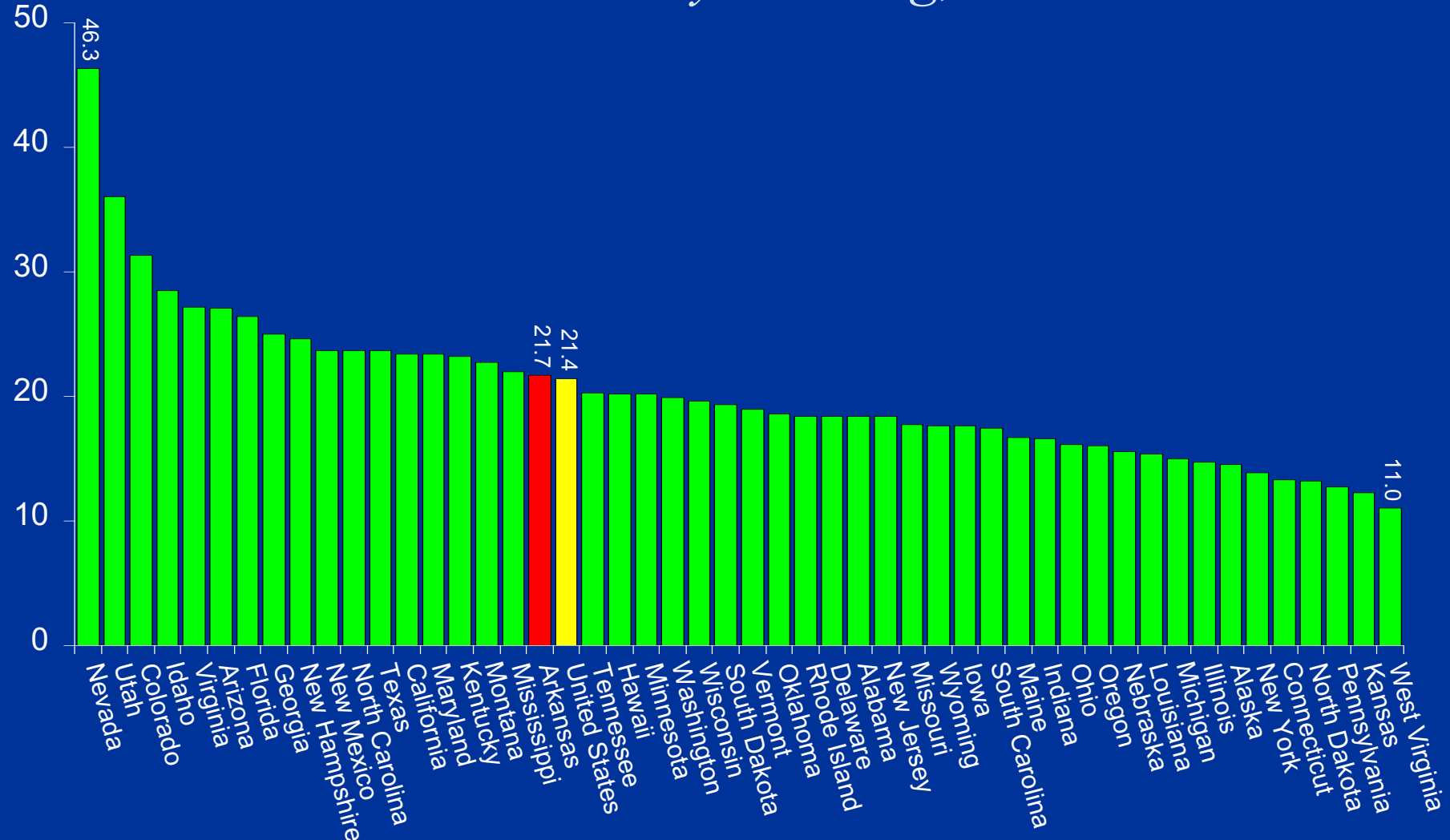
Source: Bureau of Economic Analysis, www.bea.doc.gov

Employment in High-Technology Establishments as Share of Total Employment by State, 2004



Source: U.S. Bureau of Labor Statistics, Corporation for Enterprise Development (CFED)

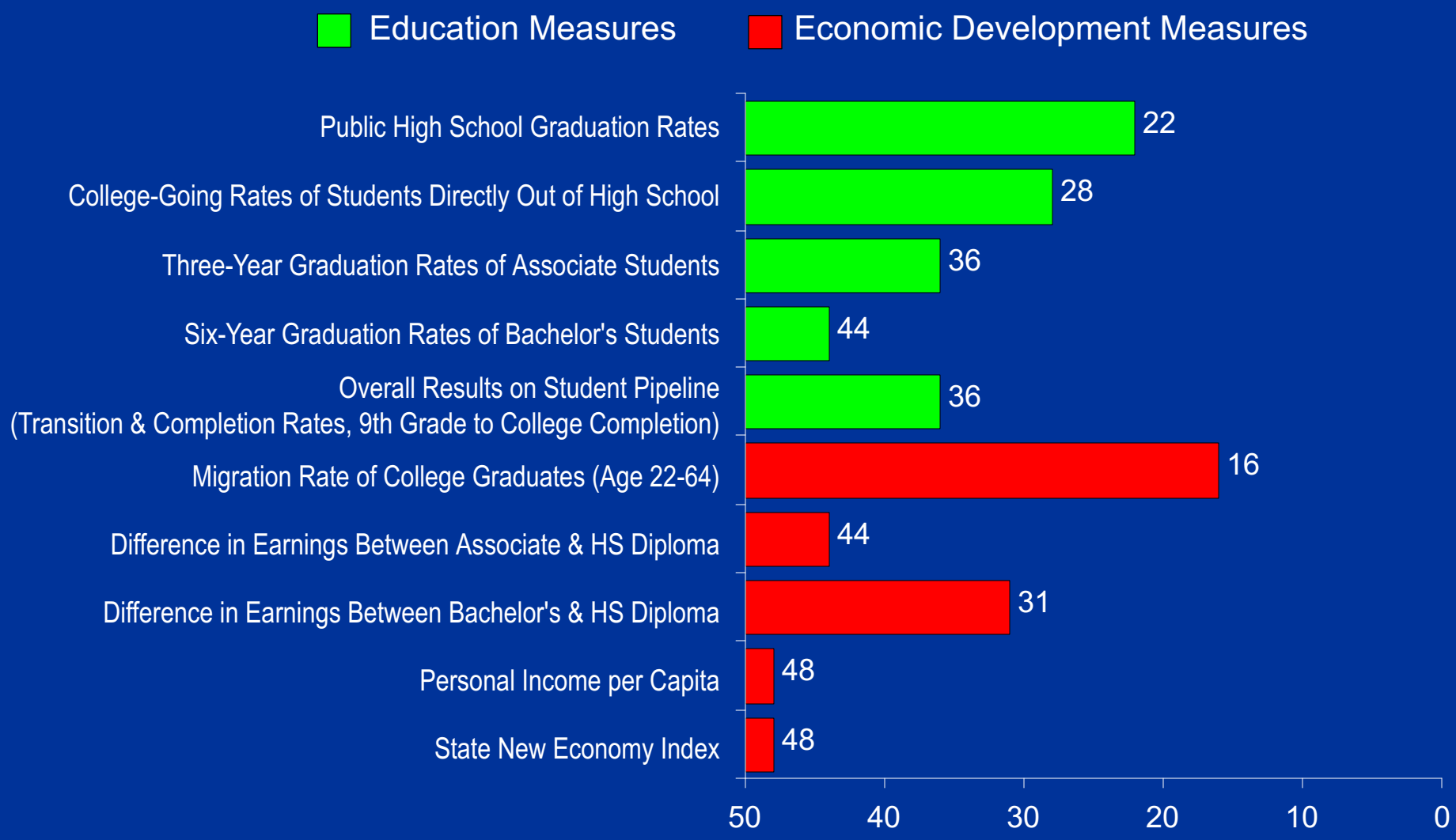
Projected Percent Change in Occupations Requiring Some Postsecondary Training, 2002-2012



Note: Some college, Associate, Bachelor's and higher.

Source: ACINet, *Career InfoNet*

How Arkansas Ranks Among Other States on Selected Measures for Education and Economic Development



Source: Bureau of Labor Statistics

Development Report Card for the States, 2006—Arkansas

		EmploymentB Earnings and Job QualityD EquityF Quality of LifeD Resource EfficiencyC
D	**Performance**	Competitiveness of Existing Bus.B Entrepreneurial EnergyB
A	**Business Vitality**	Human ResourcesD Financial ResourcesD Infrastructure ResourcesC Amenity Resources & Nat. CapitalA Innovation AssetsF
	Development Capacity	

Strengths (Top 10 Rank)

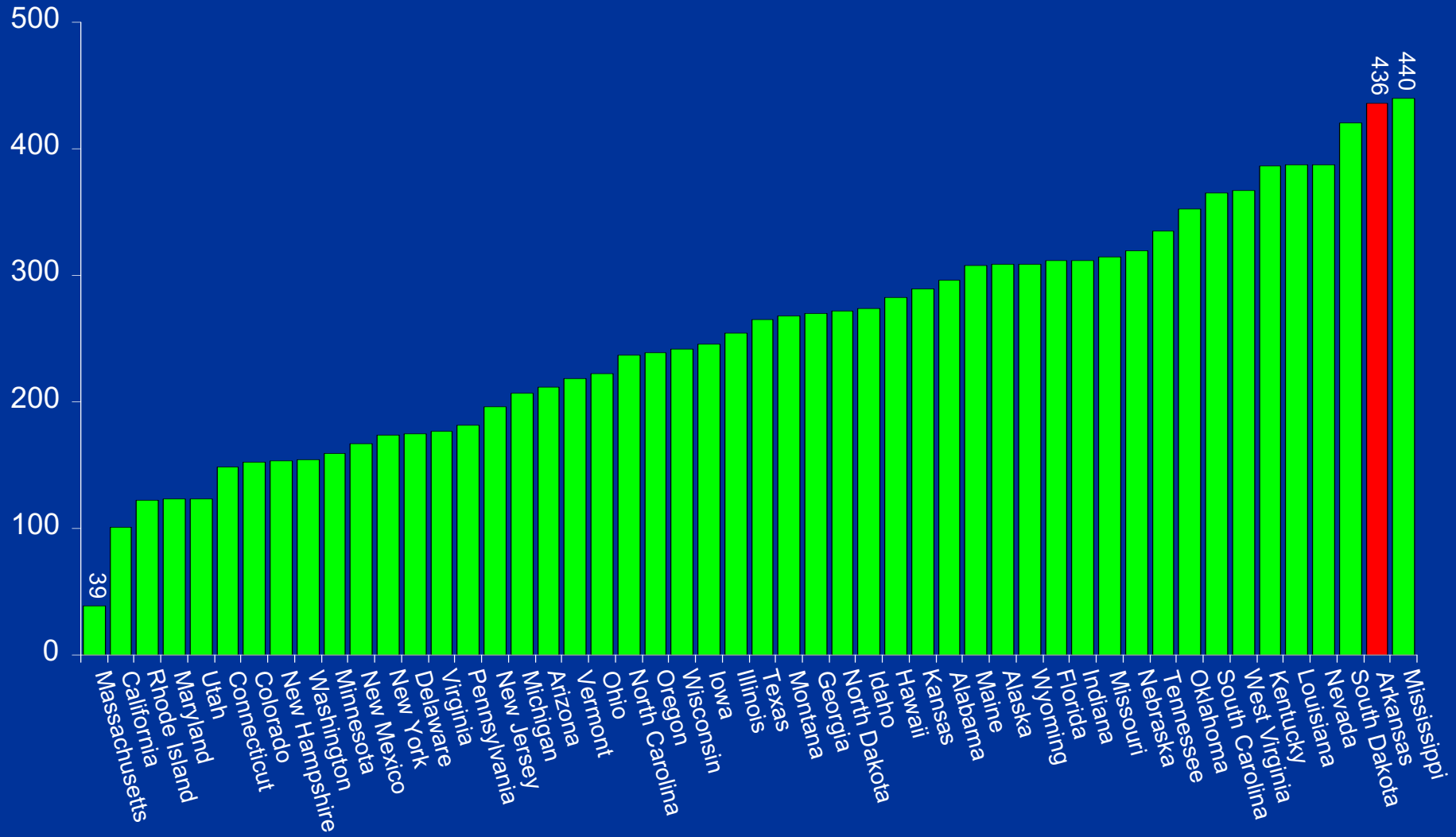
Rank	Measure
1	Change in Uninsured Low Income Children
1	Five Year Change in New Companies
4	Mass Layoffs
6	Sewage Treatment Needs
7	Change in Health Professional Shortage Areas
7	Employment Growth: Short Term
8	Recycling Rate
8	Loans to Small Businesses
9	Business Closings
9	Change in Energy Costs
10	Energy Costs

Weaknesses (Bottom 10 Rank)

Rank	Measure
40	Per Capita Energy Consumption
41	Change in Income from Dividends, Interest and Rent
41	Voting Rate
41	Highway Performance
41	Infant Mortality
42	Venture Capital Investments
43	Heart Disease
43	Private Research and Development
44	High School Attainment
45	SBIR Grants
45	Income from Dividends, Interest and Rent
45	Average Annual Pay
45	Disparity between Rural and Urban Areas
45	Employer-Provided Health Insurance
46	Teen Pregnancy
46	Income Distribution
46	Urban Mass Transit
47	Change in Business Closings
47	Academic Research and Development
47	Working Poor
47	PhD Scientists and Engineers
48	Income Distribution Change
49	College Attainment
49	Grad. Students in Science and Engineering
49	Patents Issued
49	Households with Computers
50	Change in Poverty Rate
50	Poverty Rate
50	Federal Research and Development

Source: Corporation for Enterprise Development (CFED)

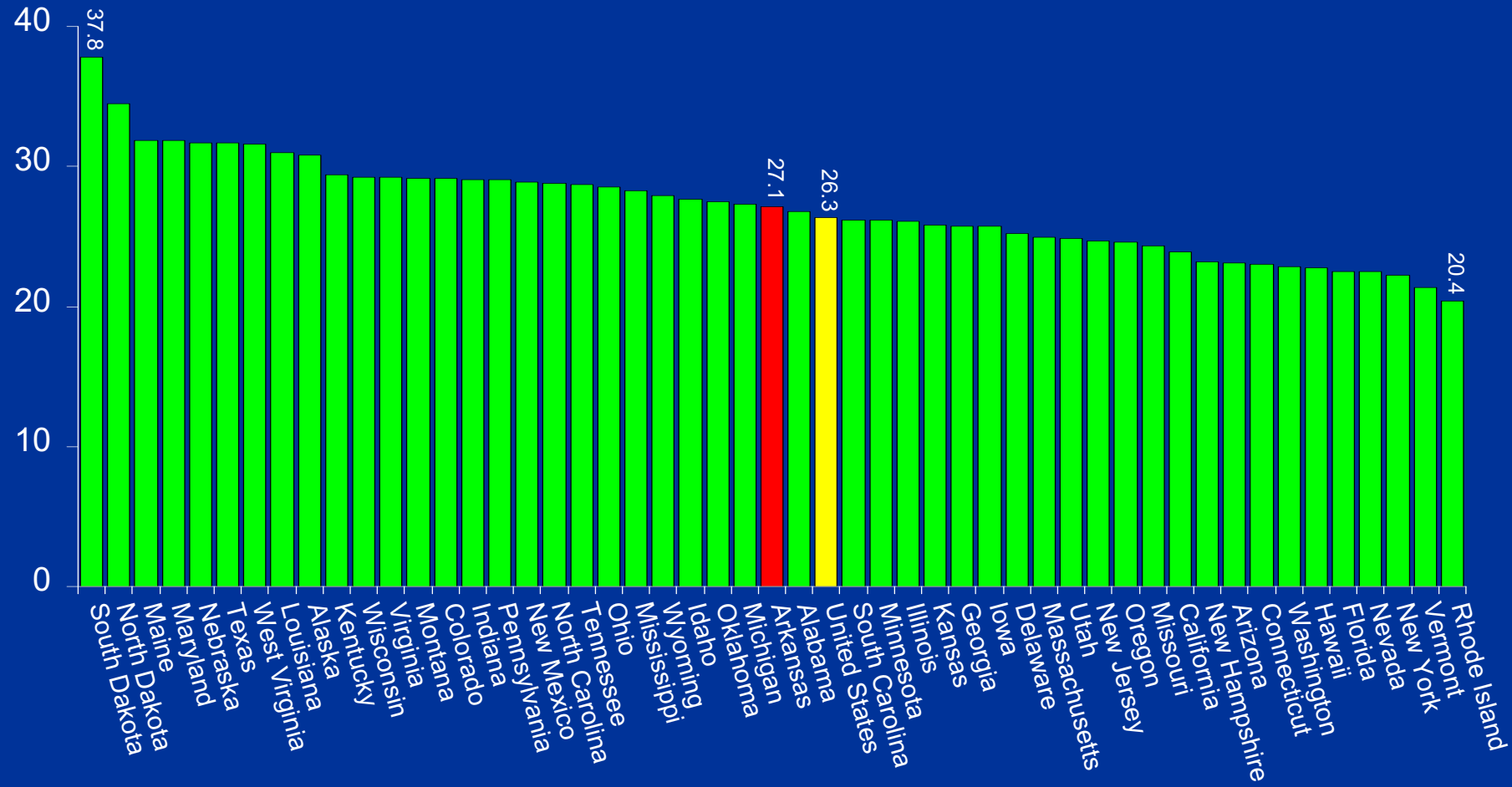
Overall State Scores on Measures of Innovation Assets



Note:Score is calculated as sum of rankings on ten separate subindex scores.

Source:*Development Report Card for the States*, CFED

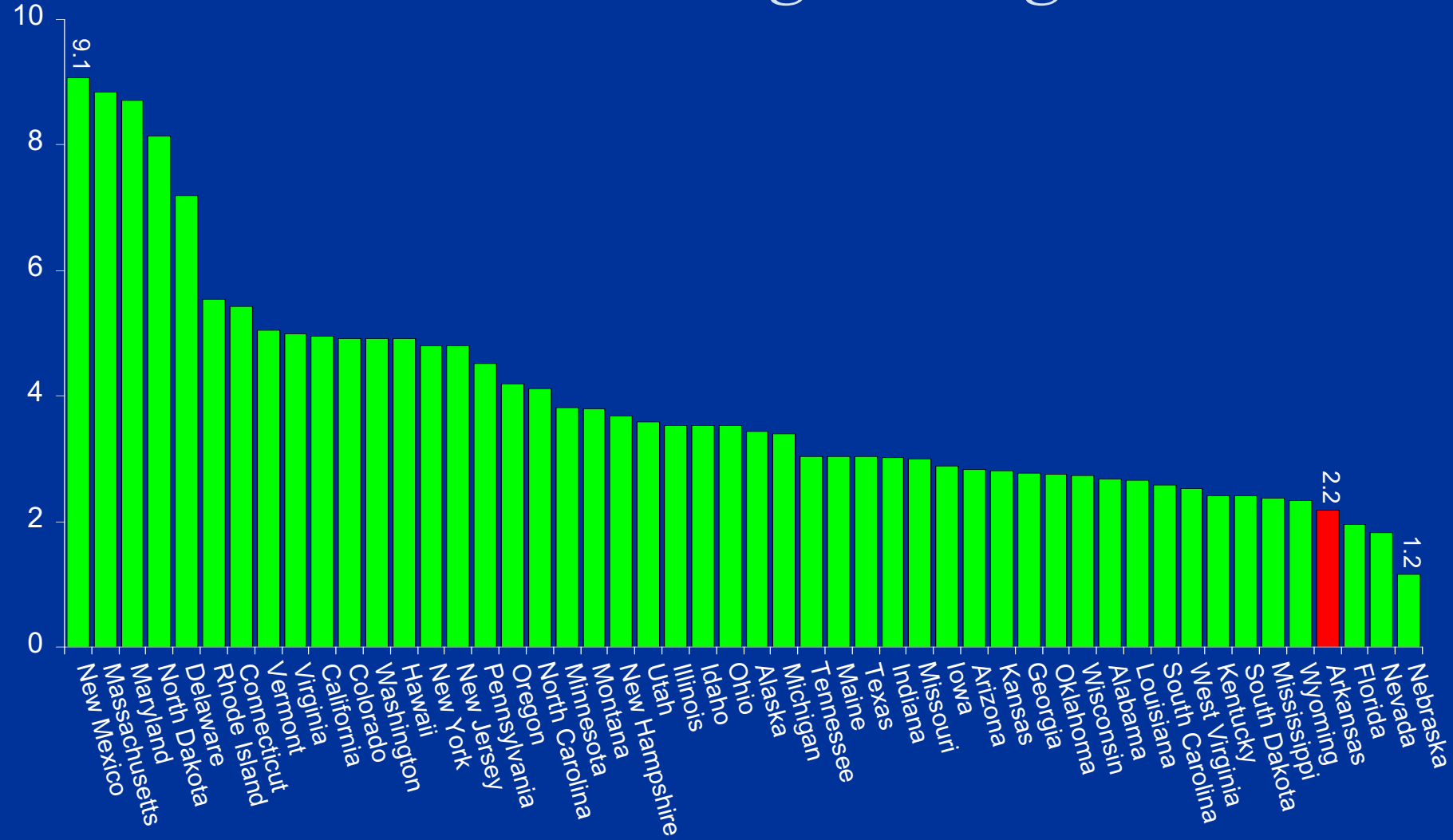
Science and Engineering Degrees as a Share of Higher Education Degrees Conferred by State, 2004-05



Note:Science & Engineering = agriculture sciences, biological/biomedical sciences, physical sciences, science tech, health sciences, computer science, math & statistics, engineering, engineering tech. Degrees include associate, bachelor's, masters and doctorate.

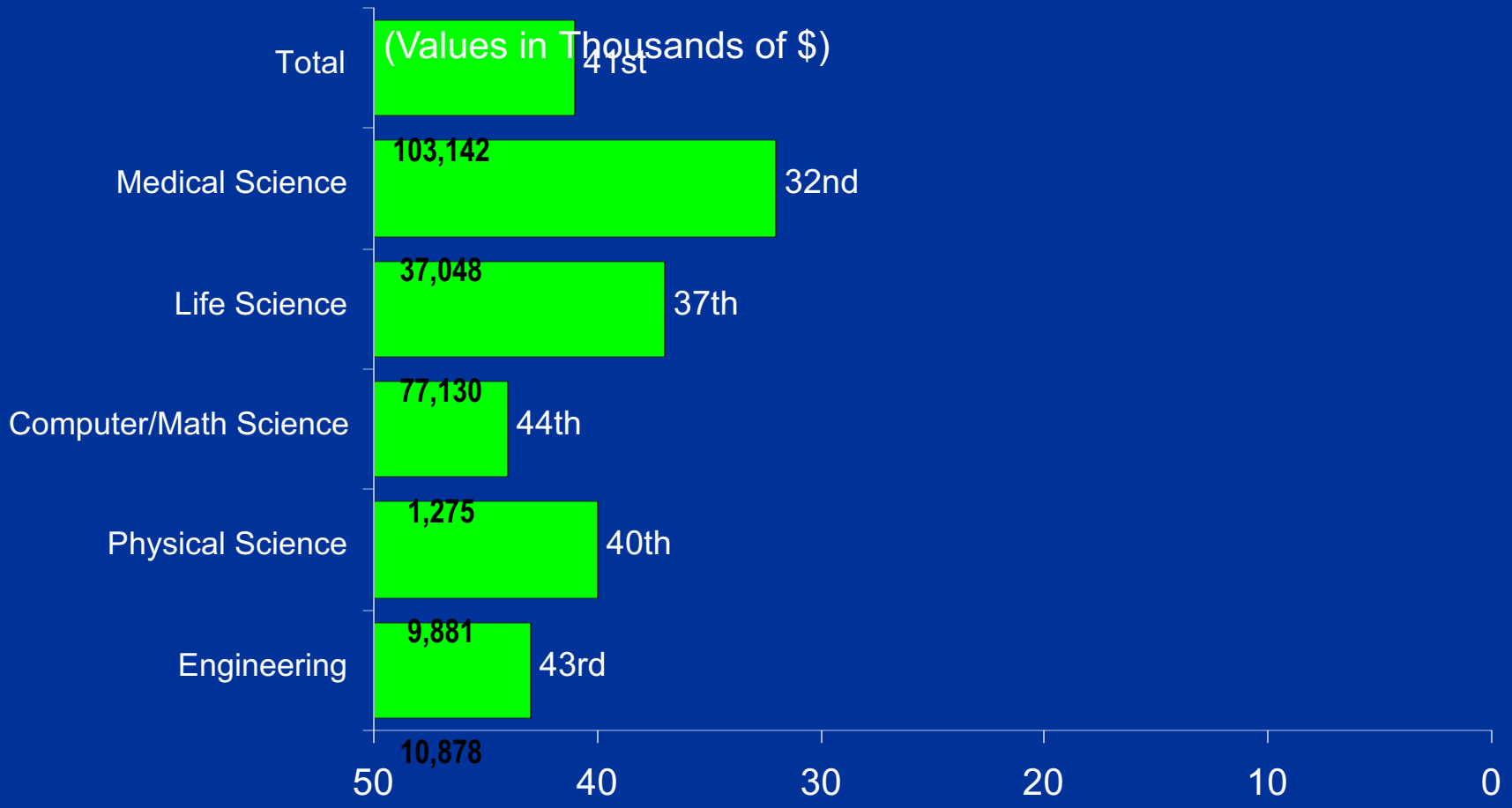
Source:NCES, IPEDS 2005 Completions File; c2005_a Final Release Data File

Number of Doctorates per 1,000 Workers—Science and Engineering, 2004



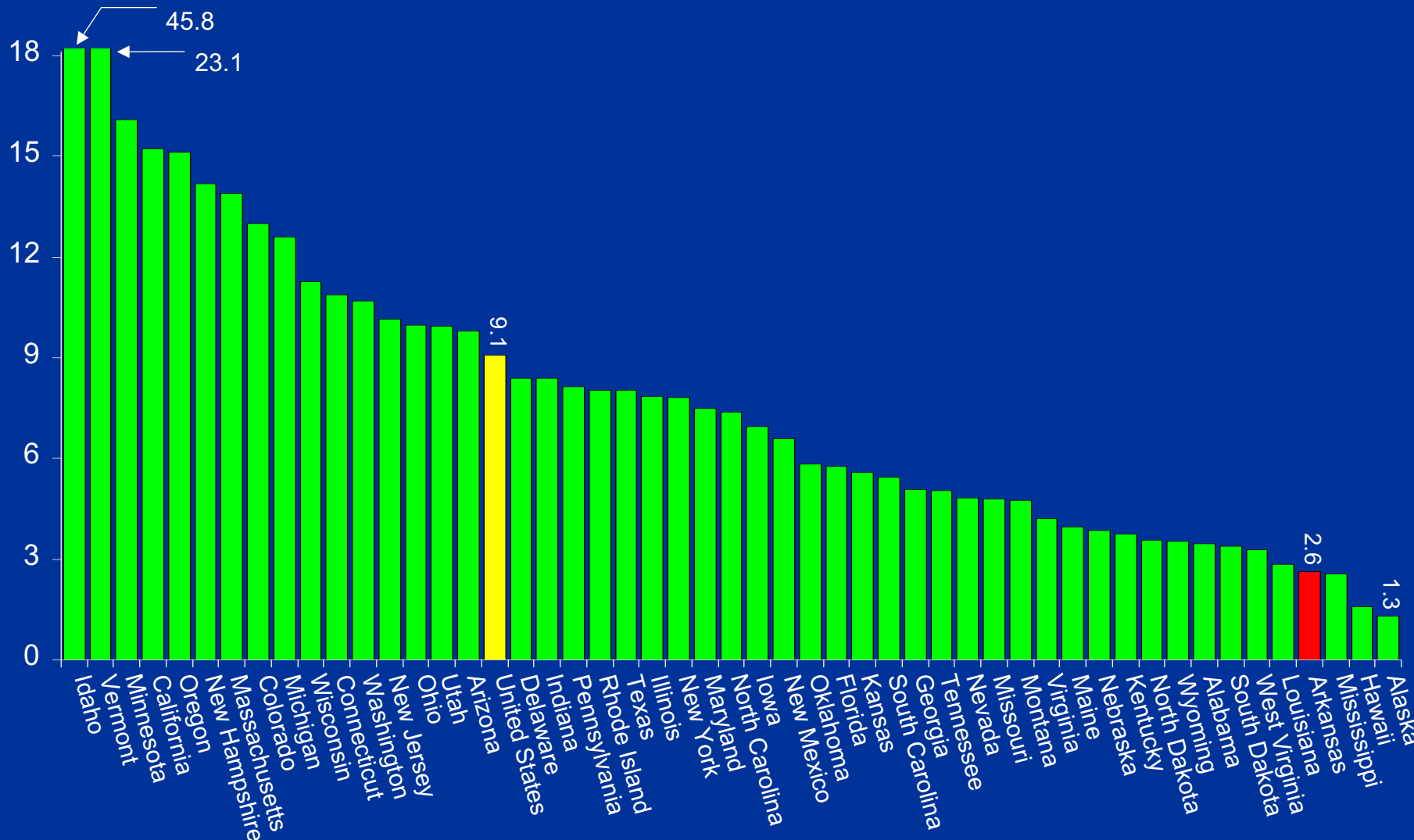
Source: *Development Report Card for the States*, CFED

Arkansas Rank—Federal Research and Expenditures, 2005



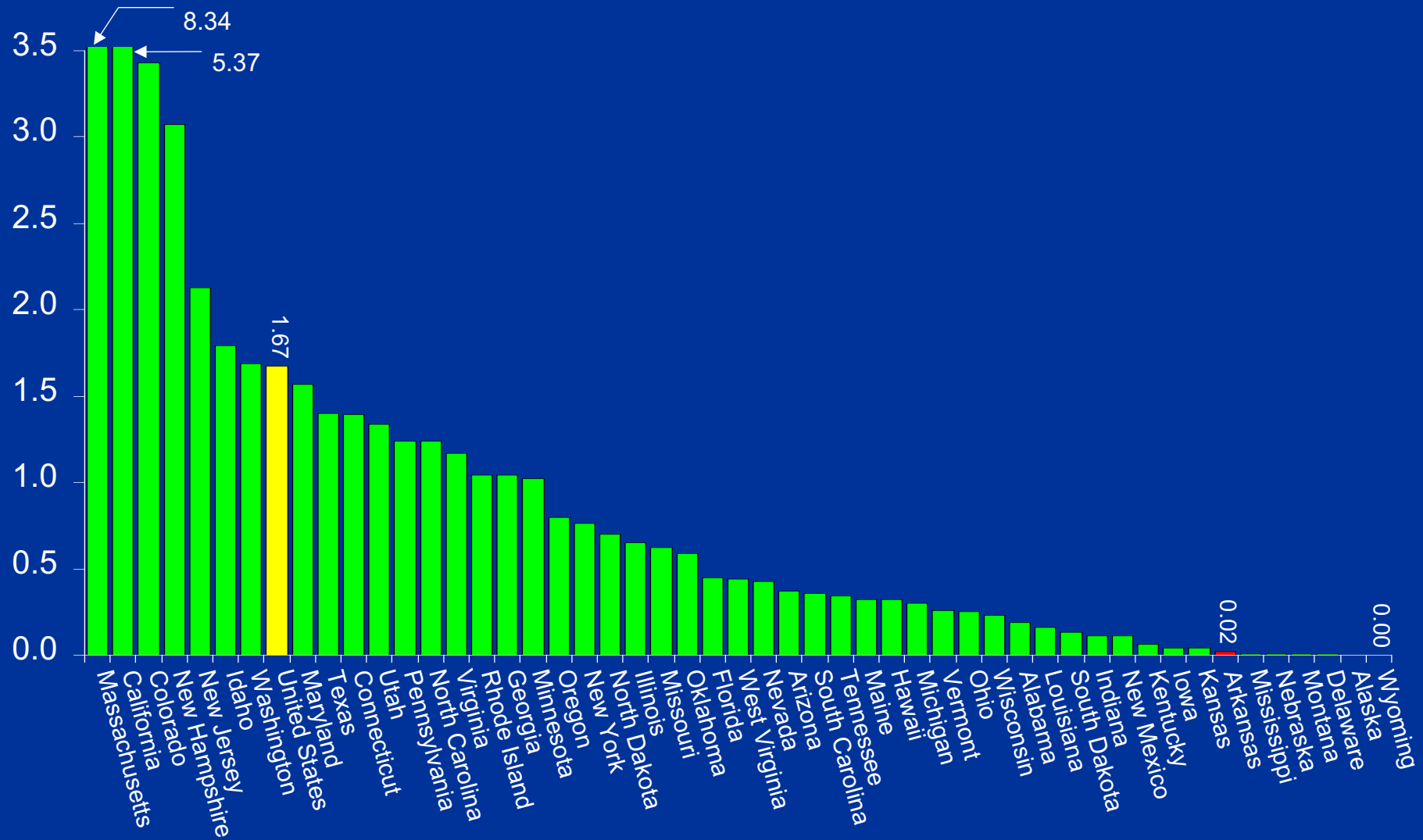
Source: National Science Foundation; U.S. Census Bureau Population Estimates

Number of Patents Issued Per $1,000 Gross State Product



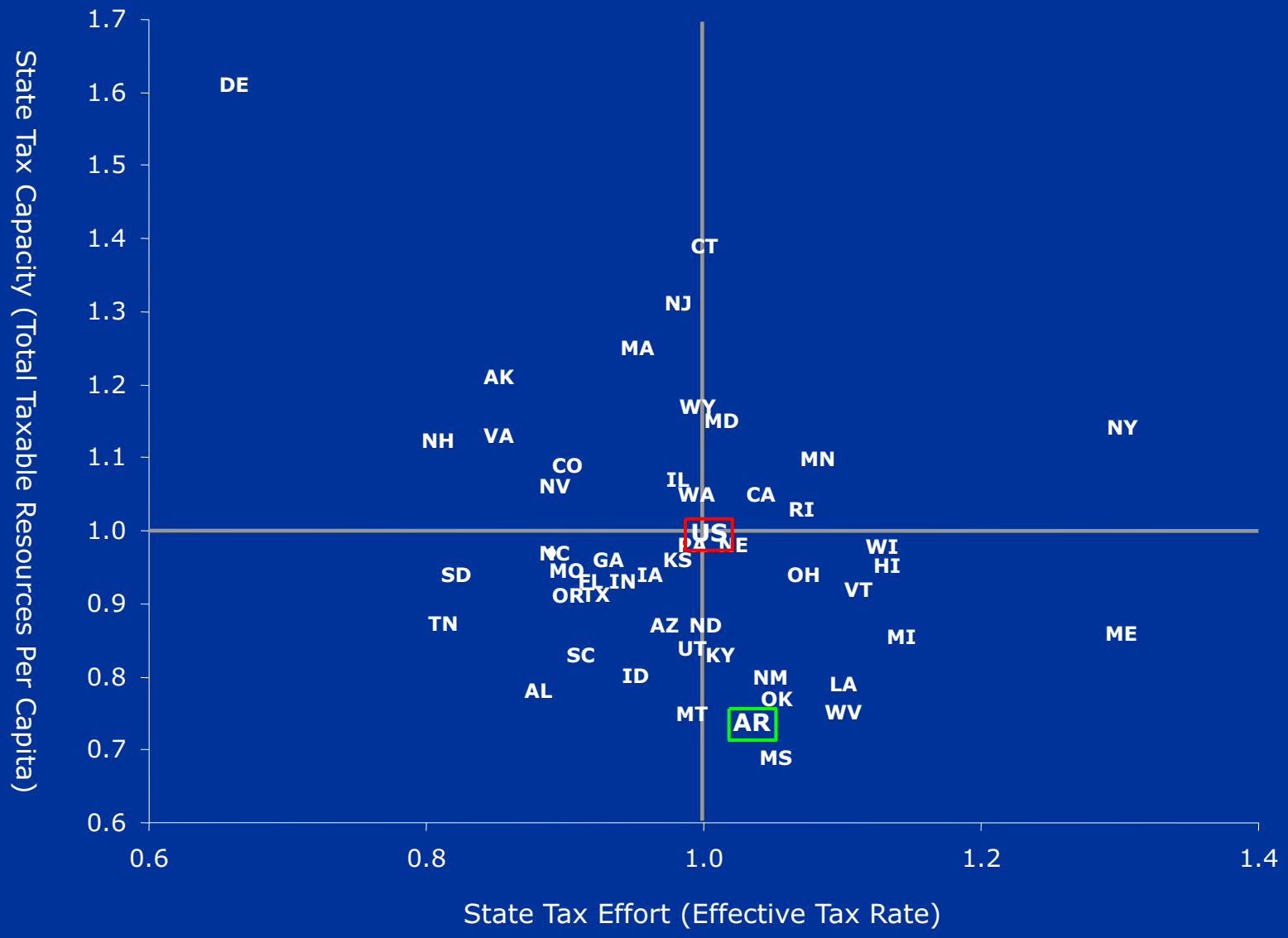
Source: *2004/2005 Economic Vision 2010 Report Card,* Indiana Chamber

Venture Capital—Financing Per $1,000 Gross State Product, 2003



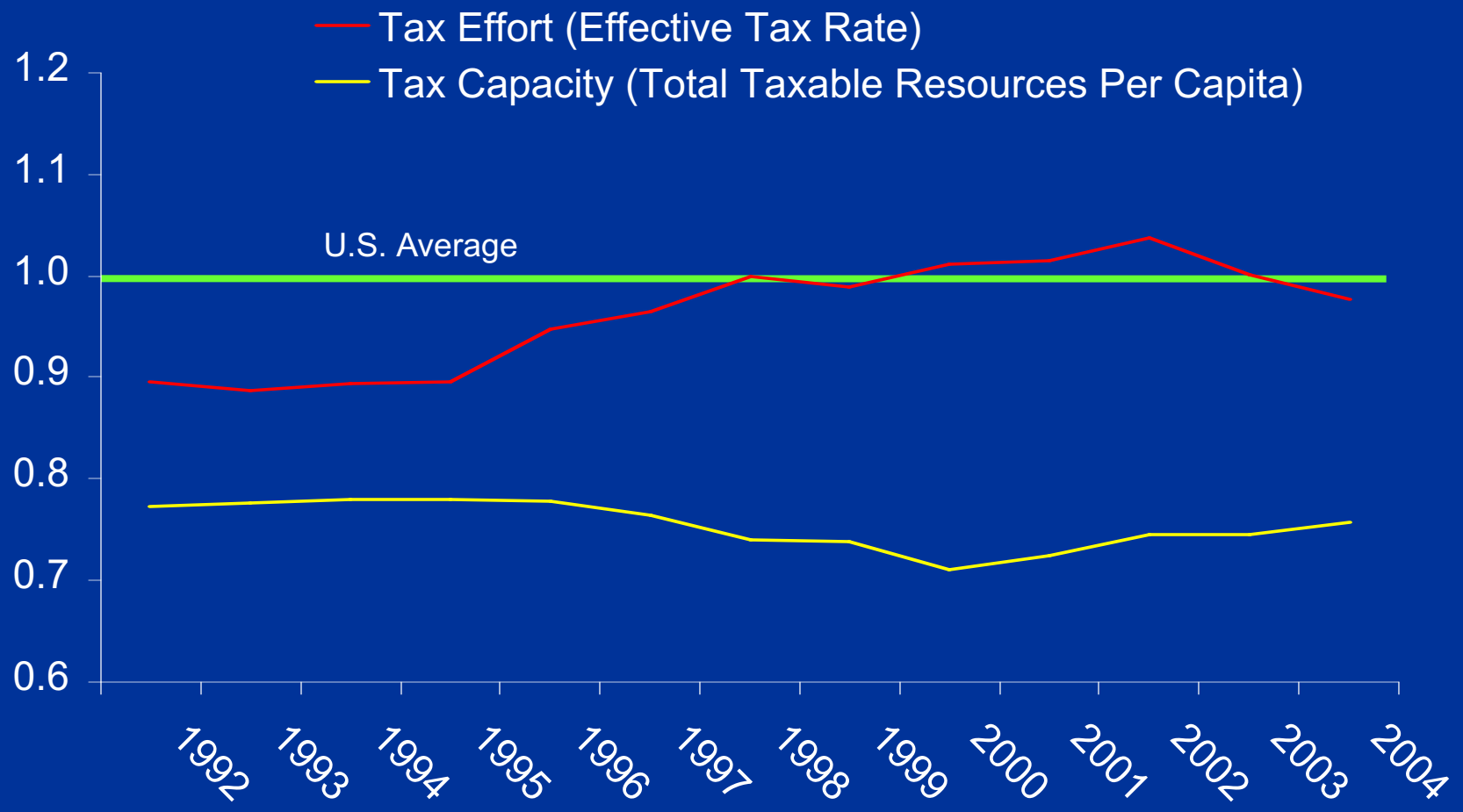
Source: *2004/2005 Economic Vision 2010 Report Card,* Indiana Chamber

State Tax Capacity and Effort—Arkansas Indexed to U.S. Average



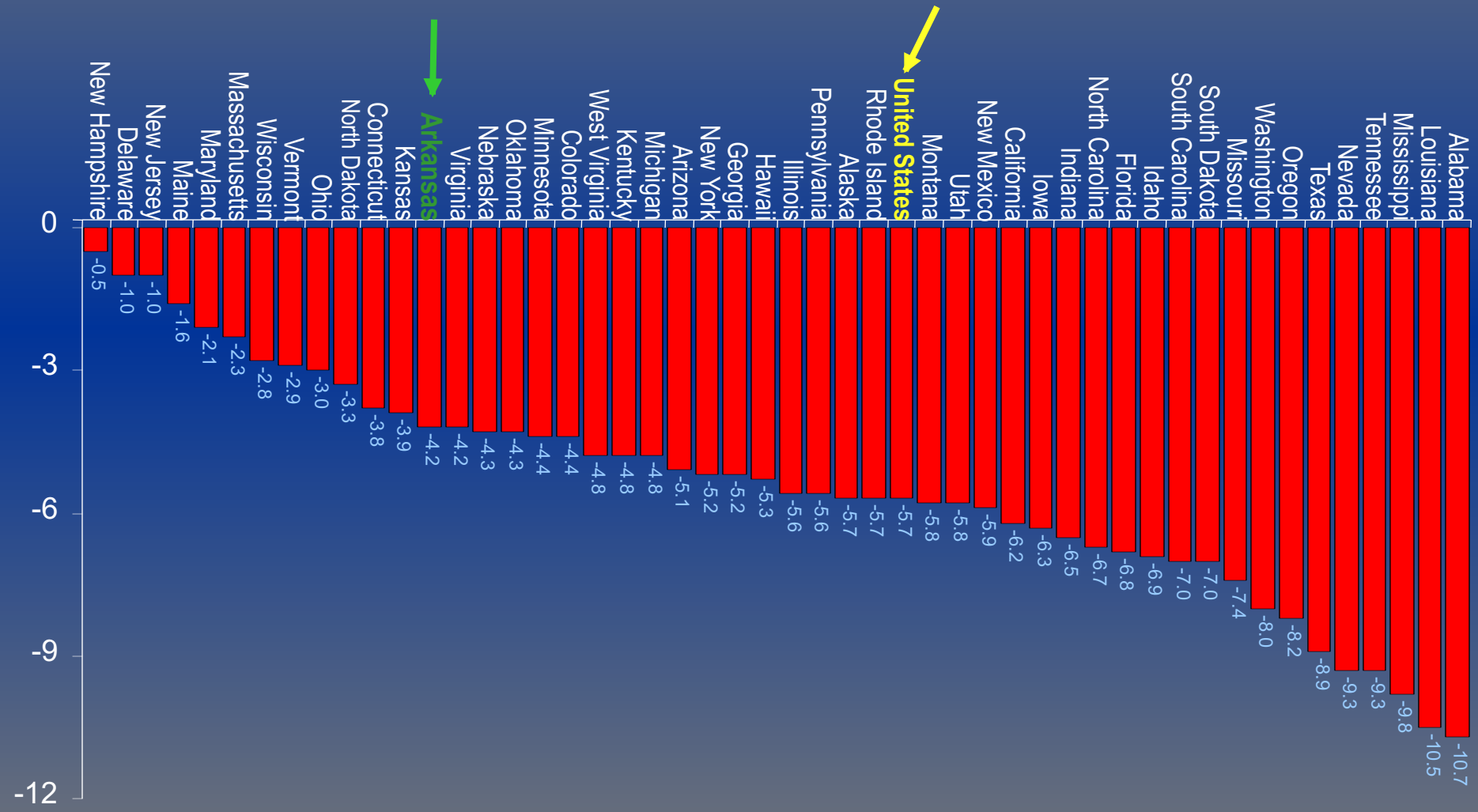
Source: State Higher Education Executive Officers (SHEEO)

State Tax Capacity and Effort—Arkansas Indexed to U.S. Average



Source: State Higher Education Executive Officers (SHEEO)

Projected State and Local Budget Surplus (Gap) as a Percent of Revenues, 2013



Source: NCHEMS; Don Boyd (Rockefeller Institute of Government), 2005

Some Observations

- Arkansas Is Faced with a “Chicken-and-Egg” Problem—Increasing:
  - Educational Attainment
  - Number of High-Value/High-Wage Jobs

- A Focus Is Needed on Job Creation/Enhancement
  - Technology Transfer
  - Applied Research/Problem-Solving
  - Rapid-Response Workforce Training

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and visit the

National Information Center for
Higher Education Policymaking and Analysis

www.higheredinfo.org