Backgrounder

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Does Spending More on Education Improve Academic Achievement?

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Debates about how to improve public education in America often focus on whether government should spend more on education. Federal and state policymakers proposing new education programs often base their arguments on the need to provide more resources to schools to improve opportunities for students.

Many Americans seem to share this view. Polling data show that many people believe that government allocates insufficient resources to schools. A poll conducted annually from 2004 through 2007 found that American adults list insufficient funding and resources as a top problem facing public schools in their communities.[1]

While this view may be commonly held, policymakers and citizens should question whether historical evidence and academic research actually support it. This paper addresses two important questions:

1. How much does the United States spend on public education?
2. What does the evidence show about the relationship between public education spending and students' academic achievement?

The answers to these questions should inform federal and state policy debates about how best to improve education.

Twenty-nine states and the District of Columbia face budget shortfalls totaling approximately $48 billion for fiscal year 2009.[2] Even more states could face shortfalls in the near future. At the federal level, long-term budgets face a challenging fiscal climate. Pro-

Talking Points

- American spending on public K–12 education continues at an all-time high and is still rising, reaching $9,266 per pupil in 2004–2005. Total real spending per student (including all levels of government funding) has increased by 23.5 percent over the past decade and 49 percent over the past 20 years.
- Federal spending on elementary and secondary education has also increased dramatically. Since 1985, real federal spending on K–12 education has increased by 138 percent.
- Continuous spending increases have not corresponded with equal improvement in American educational performance. Long-term NAEP reading scale scores and high school graduation rates show that the performance of American students has not improved dramatically in recent decades even though education spending has soared.
- Instead of simply increasing funding for public education, federal and state policymakers should implement education reforms, such as parental choice in education, designed to improve resource allocation and boost student performance.

This paper, in its entirety, can be found at:
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jected growth of entitlement programs is expected to place an ever-increasing burden on the federal budget, limiting the resources available for other purposes, including education.[3]

Simply increasing government spending on education may no longer be a viable option for federal and state policymakers. Furthermore, as this paper demonstrates, simply increasing education spending does not appear to improve American students' academic achievement. To improve learning opportunities for American children, policymakers should refocus on allocating resources more efficiently and effectively.

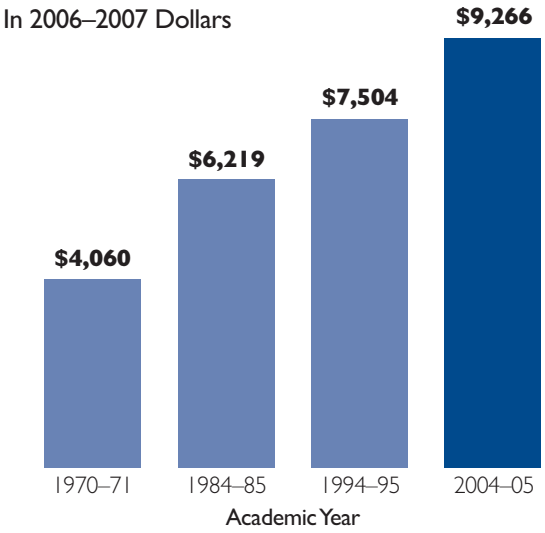
U.S. Spending on Public Education

Answering whether spending more on public education improves academic achievement begins with establishing how much the United States spends on public education. The National Center for Education Statistics in the U.S. Department of Education publishes extensive data on education in its annual *Digest of Education Statistics*, including the following important facts:

- **Total spending on K–12 public education.** The United States spent $553 billion on public elementary and secondary education in 2006–2007,[4] which is 4.2 percent of gross domestic product.[5]
- **Average per-student spending in public school.** In 2004–2005 (the most recent school year for which data are available), an average of $9,266 was spent per pupil in American public schools.[6] This means that a student entering first grade in 2004 could expect approximately $111,000 to be spent on his or her elementary and secondary education if the student completes high school.[7]
- **Spending by level of government.** Public education revenue is drawn from three sources of government: federal, state, and local. In 2004–

Education Funds See Rapid Increase

Total average per-pupil expenditures have more than doubled since 1970.



Source: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics: 2007*, Table 171, at *http://www.nces.ed.gov/programs/digest/d07/tables/dt07_171.asp* (August 21, 2008).

Chart 1 • B 2179 heritage.org

1. Lowell C. Rose and Alec M. Gallup, "The 39th Annual Phi Delta Kappa/Gallup Poll of the Public's Attitudes Toward the Public Schools," *Phi Delta Kappan*, September 2007, at *http://www.pdkmembers.org/members_online/publications/e-GALLUP/kpoll_pdfs/pdkpoll39_2007.pdf* (August 5, 2008).
2. Elizabeth C. McNichol and Iris J. Lav, "29 States Face Total Budget Shortfall of at Least $48 Billion in 2009," Center on Budget and Policy Priorities, updated August 5, 2008, at *http://www.cbpp.org/1-15-08sfp.pdf* (August 5, 2008).
3. For background on the federal government's long-term fiscal outlook, see Brookings–Heritage Fiscal Seminar, "Taking Back Our Fiscal Future," The Heritage Foundation and The Brookings Institution, April 2008, at *http://www.heritage.org/Research/Budget/upload/takingbackourfiscalfuture.pdf* (August 5, 2008).
4. U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics: 2007*, Table 26, at *http://www.nces.ed.gov/programs/digest/d07/index.asp* (August 5, 2008).
5. Author's calculations. The nation's gross domestic product was $13.2 trillion in 2006. *Ibid.*, Table 25.
6. *Ibid.*, Table 171. This estimate is based on "current expenditures" in 2006–2007 dollars.
7. Author's calculations, assuming that the child is enrolled in public school for 12 years. This is likely an overly conservative estimate because real per-student spending has increased over time.

2005, state government provided the largest share of public education revenues: 46.9 percent. Local governments provided 44.0 percent, and the federal government provided 9.2 percent.[8]

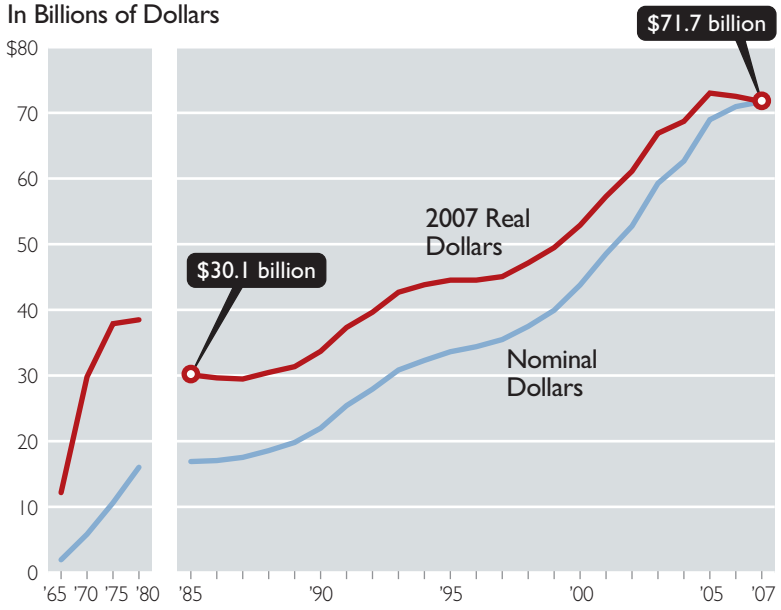
- **Federal spending on education.** In 2007, the federal government spent $71.7 billion on elementary and secondary education programs. These funds were spent by 13 federal departments and multiple agencies. The Department of Education spent $39.2 billion on K–12 education. The largest programs in the Department of Education's elementary and secondary budget were "Education for the disadvantaged" ($14.8 billion) and "Special education" ($11.5 billion).[9]

Historical Trends in Public Education Spending

Many people believe that lack of funding is a problem in public education,[10] but historical trends show that American spending on public education is at an all-time high. Between 1994 and 2004, average per-pupil expenditures in American public schools have increased by 23.5 percent (adjusted for inflation). Between 1984 and 2004, real expenditures per pupil increased by 49 percent.[11] These increases follow the historical trend of ever-increasing real per-student expenditures in the nation's public schools. In fact, the per-pupil expenditures in 1970–1971 ($4,060) were less than half of per-pupil expenditures in 2005–2006 ($9,266) after adjusting for inflation.[12]

Total Federal Spending on Elementary and Secondary Education

After adjusting for inflation, combined federal support and estimated federal tax expenditures for education have increased by 138 percent since 1985.



Note: Figures are for on-budget federal spending for elementary and secondary education.

Source: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics: 2007*, Table 360, at *http://nces.ed.gov/programs/digest/d07/tables/dt07_360.asp* (August 19, 2008).

Chart 2 • B 2179 heritage.org

Appendix A presents the growth of per-pupil expenditures by state compared to the national average. Over the past decade, real expenditures per pupil have increased in all 50 states and the District of Columbia, increasing the most in Vermont (47.5 percent) and the least in Alaska (5.9 percent).

Federal spending on education has also increased dramatically, as shown in Chart 2. Com-

8. U.S. Department of Education, *Digest of Education Statistics*, Table 162. Percentages total more than 100 percent because of rounding.
9. *Ibid.*, Table 362.
10. Rose and Gallup, "Phi Delta Kappa/Gallup Poll."
11. Author's calculations. Average per-pupil expenditures were $7,504 in 1994–1995 and $6,219 in 1984–1985 in constant 2006–2007 dollars. U.S. Department of Education, *Digest of Education Statistics*, Table 171.
12. *Ibid.*

bined federal support and estimated federal tax expenditures for elementary and secondary education has increased by 138 percent (adjusted for inflation) since 1985. On a per-pupil basis, real federal spending on K–12 education has also increased significantly over time. (See Chart 3.) In 2005, the federal government spent $971 per pupil, more than three times its level of spending in 1970 ($311) after adjusting for inflation.

Education Spending and Academic Achievement

Given the significant increase in resources allocated to public education, policymakers should consider whether government spending increases have led to improved student outcomes. This will help to determine whether future increases in education spending can be expected to yield tangible improvements for students.

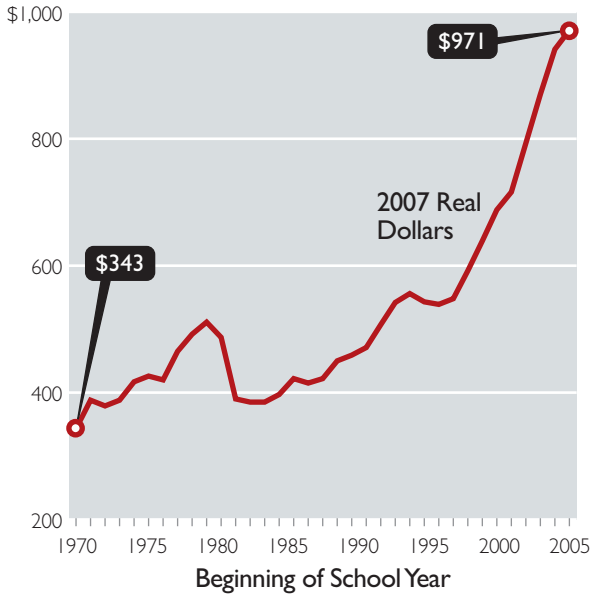
A basic comparison of long-term spending trends with long-term measures of student academic achievement challenges the belief that spending is correlated with achievement. Chart 4 compares real per-pupil expenditures with American students test scores on the long-term National Assessment of Educational Progress (NAEP) reading examination from 1970 to 2004. While spending per pupil has more than doubled, reading scores have remained relatively flat.

High school graduation rates provide another historical barometer of American educational performance. According to the National Center for Education Statistics, the average freshman graduation rate for American public schools has remained relatively flat over time. In 1990–1991, the average graduation rate was 73.7 percent. By 2004–2005, the rate had increased modestly to 74.7.[13] However, the most recent estimate for the 2005–2006 school year shows that the national freshman graduation rate has dipped to 73.4 percent.[14]

A key focus of education reform efforts in recent decades has been to improve opportunities for disadvantaged students and to reduce the achievement gap between white students and ethnic minority children. Appendix B presents long-term NAEP 4th, 8th, and 12th grade reading and math scores of specific student groups, including white, black, and Hispanic children from the 1970s through 2004. Black and Hispanic students have improved test scores in both subjects across all student levels. However, the achievement gap persists, with black and Hispanic children still lagging behind their white peers despite decades of federal aid targeted at equalizing opportunities for all students.[15] Similarly, in 2005–2006, the national high school grad-

Per-Pupil Federal K–12 Education Spending

Federal spending on education has nearly tripled since the early 1970s.



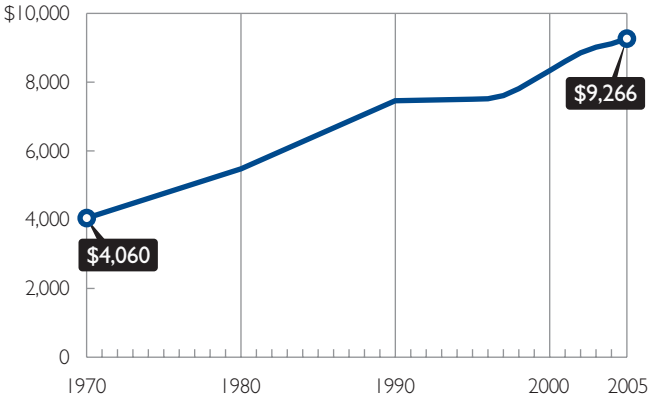
Sources: U.S. Department of Education, National Center for Education Statistics, Revenues and Expenditures for Public Elementary and Secondary Education, 1970–1971 through 1986–1987, and National Public Education Financial Survey, 1987–1988 through 2004–2005.

Chart 3 • B 2179 heritage.org

13. *Ibid.*, Table 102.
14. U.S. Department of Education, National Center for Education Statistics, "Public School Graduates and Dropouts from the Common Core of Data: School Year 2005–06," August 2008, at *http://nces.ed.gov/pubs2008/2008353.pdf* (August 20, 2008).

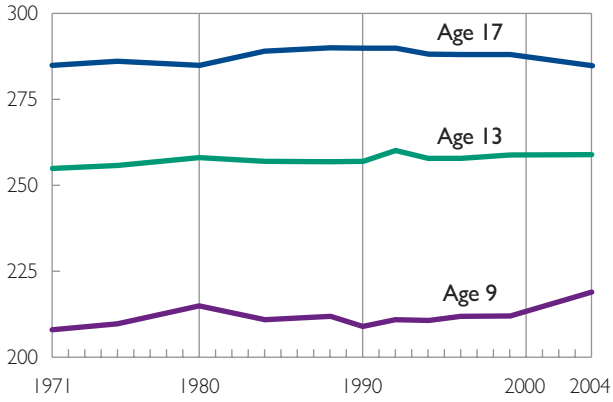
The "Link" Between Education Spending and Student Performance

Despite more than doubling per-student expenditures…



Per-Student Expenditures in American Public Schools, 1970–2005, in Constant 2006–2007 Dollars

…reading scores in U.S. schools have remained relatively flat.



American Student NAEP Reading Scores, 1971–2004

Sources: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, "National Trends in Reading by Average Scale Scores," updated July 6, 2005, at *http://nces.ed.gov/nationsreportcard/ltt/results2004/nat-reading-scalescore.asp* (April 14, 2008), and *Digest of Education Statistics: 2007*, Table 174, at *http://nces.ed.gov/programs/digest/d07/tables/dt07_174.asp* (August 19, 2008).

Chart 4 • B 2179 heritage.org

uation rate for white students (80.6 percent) remained significantly higher than the graduation rates of black students (59.1 percent) and Hispanic students (61.4 percent).[16]

Academic Literature on Education Spending and Achievement

Academic researchers have sought to answer the question of whether education expenditures are correlated with student performance. However, there is a lack of consistent evidence on whether education expenditures are related to academic achievement. Eric Hanushek has studied the effect of per-pupil expenditures on academic outcomes, finding either no relationship or a relationship that is either weak or inconsistent.[17] However, researchers Larry V. Hedges and Rob Greenwald analyzed the same data used by Hanushek and concluded that increasing per-pupil expenditures has a significant positive impact on student achievement.[18]

Despite the lack of consistent findings, leading researchers in the area acknowledge that any effect of per-pupil expenditures on academic outcomes depends on how the money is spent, not on how much money is spent. According to Hanushek:

> Few people…would recommend just dumping extra resources into existing schools. America has…followed that program for several decades, with no sign that student performance has improved.…
>
> …The issue is getting productive uses from current and added spending. The existing evidence simply indicates that the typical

15. For more information, see Susan L. Aud, "A Closer Look at Title I: Making Education for the Disadvantaged More Student-Centered," Heritage Foundation *Special Report* No. 15, July 28, 2007, at *http://www.heritage.org/Research/Education/sr15.cfm*.
16. U.S. Department of Education, "Public School Graduates and Dropouts from the Common Core of Data."
17. Eric A. Hanushek, "School Resources and Student Performance," in Gary Burtless, ed., *Does Money Matter? The Effect of School Resources on Student Achievement and Adult Success* (Washington, D.C.: Brookings Institution Press, 1996), pp. 74–92.
18. Larry V. Hedges and Rob Greenwald, "Have Times Changed? The Relation Between School Resources and Student Performance," in Burtless, *Does Money Matter?*

school system today does not use resources well (at least if promoting student achievement is their purpose).[19]

Hedges and Greenwald note that:

> [T]he results do not provide detailed information on the educationally or economically efficient means to allocate existing and new dollars.… [D]iscussions of school reform… should instead incorporate an assessment of the current relation between inputs and outcomes and determine how to best allocate resources in specific contexts.[20]

What is clear from these competing findings is that policymakers should seriously consider improving how to allocate educational resources more effectively.

The evidence about education spending and achievement leads to the following important lessons:

- **American spending on public K–12 education is at an all-time high and is still rising.** Polls show that many people believe that a lack of resources is a primary problem facing public schools. Yet spending on American K–12 public education is at an all-time high. Approximately $9,300 is spent per pupil. Real spending per student has increased by 23.5 percent over the past decade and by 49 percent over the past 20 years.
- **Continuous spending increases have not corresponded with equal improvement in American educational performance.** Long-term measures of American students' academic achievement, such as long-term NAEP reading scale scores and high school graduation rates, show that the performance of American students has not improved dramatically in recent decades, despite substantial spending increases. The lack of a correlation between long-term education spending and performance does not suggest that resources are not a factor in academic performance, but it does suggest that simply increasing spending is unlikely to improve educational performance.
- **Increasing federal funding on education has not been followed by similar gains in student achievement.** Federal spending on elementary and secondary education has also increased significantly in recent decades. Since 1985, real federal spending on K–12 education has increased by 138 percent. On a per-student basis, federal spending on K–12 education has tripled since 1970. Yet, long-term measures of American students' academic achievement have not seen similar increases. Long-term test scores among specific student populations, including ethnic minorities that have been a main focus of federal education policy, have improved some. However, the achievement gaps among white, black, and Hispanic students persist in test scores and graduation rates.
- **Education reform efforts should focus on improving resource allocation.** Instead of simply increasing funding, efforts to improve education should focus on improving resource allocation. Chart 5 compares high graduation rates and per-student expenditures in the nation's 50 largest cities. In many cities, spending per student exceeds $10,000 per year, yet graduation rates are below 50 percent. For example, in Detroit, per-student spending is approximately $11,100 per year, yet only 25 percent of Detroit's students are graduating from high school according to a recent estimate.[21] In these communities and across the country, policymakers should focus on reforming policies and resource allocation to improve student achievement.

The high and increasing percentage of funding that is allocated to non-classroom expenditures is evidence of the need to improve resource allocation in the nation's public schools. According to the

19. Hanushek, "School Resources and Student Performance," p. 69.
20. Hedges and Greenwald, "Have Times Changed?" p. 90.
21. Christopher B. Swanson, "Cities in Crisis: A Special Analytic Report on High School Graduation," Editorial Projects in Education Research Center, April 1, 2008, at *http://www.edweek.org/media/citiesincrisis040108.pdf* (August 19, 2008), and U.S. Department of Education, National Center for Education Statistics, Common Core of Data, District Information, at *http://nces.ed.gov/ccd/districtsearch* (August 19, 2008).

Low Graduation Rates Common in Well-Funded City School Districts

The chart below shows data for the principal school district for each of the 50 largest cities in the U.S., ranked by per-student expenditures.

	City	City Population	Principal School District	Per-Student Expenditures (2005 Dollars)	High School Graduation Rate in 2003–2004
1	Boston, MA	590,763	Boston	$16,879	57.0
2	New York, NY	8,214,426	New York City	15,455	45.2
3	Washington, DC	581,530	District of Columbia	15,411	58.2
4	Indianapolis, IN	785,597	Indianapolis	14,428	30.5
5	Minneapolis, MN	372,833	Minneapolis	14,355	43.7
6	Atlanta, GA	486,411	Atlanta City	14,011	46.0
7	Detroit, MI	871,121	Detroit City	13,529	24.9
8	Portland, OR	537,081	Portland	13,522	53.6
9	Philadelphia, PA	1,448,394	Philadelphia City	13,498	49.6
10	Milwaukee, WI	573,358	Milwaukee	12,789	46.1
11	Cleveland, OH	444,313	Cleveland Municipal City	12,157	34.1
12	Los Angeles, CA	3,849,378	Los Angeles Unified	11,647	45.3
13	Dallas, TX	1,232,940	Dallas Intermediate	11,604	44.4
14	San Jose, CA	929,936	San Jose Unified	11,473	77.0
15	Seattle, WA	582,454	Seattle	11,445	67.6
16	Denver, CO	566,974	Denver County	10,905	46.3
17	San Diego, CA	1,256,951	San Diego Unified	10,805	61.6
18	Sacramento, CA	453,781	Sacramento City Unified	10,783	66.7
19	Oakland, CA	397,067	Oakland Unified	10,756	45.6
20	Baltimore, MD	631,366	Baltimore City	10,707	34.6
21	San Antonio, TX	1,296,682	San Antonio Intermediate	10,460	51.9
22	Austin, TX	709,893	Austin Intermediate	10,400	58.2
23	Chicago, IL	2,833,321	City of Chicago	10,181	51.5
24	San Francisco, CA	744,041	San Francisco Unified	9,844	73.1
25	Columbus, OH	733,203	Columbus	9,762	40.9
26	Phoenix, AZ	1,512,986	Phoenix Union	9,578	58.3
27	Honolulu, HI	377,357	Hawaii	9,429	64.1
28	Virginia Beach, VA	435,619	Virginia Beach City	9,396	67.4
29	Fresno, CA	466,714	Fresno Unified	9,330	57.4
30	Miami, FL	404,048	Dade County	9,322	49.0
31	Nashville–Davidson Co., TN	552,120	Nashville–Davidson Co.	9,160	77.0
32	Louisville–Jefferson Co., KY	554,496	Jefferson County	9,069	63.7
33	Colorado Springs, CO	372,437	Colorado Springs	9,011	76.0
34	Charlotte, NC	630,478	Charlotte–Mecklenburg	8,911	59.8
35	Houston, TX	2,144,491	Houston Intermediate	8,849	54.6
36	Omaha, NE	419,545	Omaha	8,828	55.1
37	Las Vegas, NV	552,539	Clark County	8,817	53.1
38	Long Beach, CA	472,494	Long Beach Unified	8,561	63.5
39	Wichita, KS	357,698	Wichita	8,554	59.6
40	Kansas City, MO	447,306	Kansas City	8,402	45.7
41	El Paso, TX	609,415	El Paso Intermediate	8,374	60.5
42	Albuquerque, NM	504,949	Albuquerque	8,242	60.8
43	Tulsa, OK	382,872	Tulsa	8,223	50.6
44	Memphis, TN	670,902	Memphis City	8,055	61.7
45	Tucson, AZ	518,956	Tucson Unified	7,941	71.7
46	Fort Worth, TX	653,320	Fort Worth Intermediate	7,863	55.5
47	Jacksonville, FL	794,555	Duval County	7,793	50.2
48	Arlington, TX	367,197	Arlington Intermediate	7,304	62.7
49	Oklahoma City, OK	537,734	Oklahoma City	6,860	47.5
50	Mesa, AZ	447,541	Mesa Unified	6,558	77.1

Sources: U.S. Department of Education, National Center for Education Statistics, Common Core of Data, District Information, at *http://nces.ed.gov/ccd/districtsearch* (August 19, 2008), and Christopher B. Swanson, "Cities in Crisis: A Special Analytic Report on High School Graduation," Editorial Projects in Education Research Center, April 1, 2008, at *http://www.edweek.org/media/citiesincrisis040108.pdf* (August 19, 2008).

Chart 5 • B 2179 heritage.org

National Center for Education Statistics, only 52 percent of public education expenditures are spent on instruction.[22] This percentage has been slowly decreasing over recent decades.

One promising way to improve resource allocation is to give parents the ability to use their children's share of public education funding to choose the right school for their children. Children benefiting from school choice programs have higher test scores than their peers who do not benefit from school choice.[23] Moreover, public schools affected by school choice policies improve their performance in response to competition created by parents' ability to choose alternative schools for their children.[24]

What Federal and State Policymakers Should Do

Federal and state policymakers should resist proposals to increase funding for public education. Historical trends and other evidence suggest that simply increasing funding for public elementary and secondary education has not led to corresponding improvement in academic achievement. Instead of simply increasing funding for education, policymakers and school leaders should implement education reforms that improve resource allocation.

Members of Congress and federal policymakers should embrace reforms that reduce bureaucracy, streamline regulations, and transfer greater authority over funding to the state and local levels.

State policymakers should implement systemic education reforms that improve resource allocation and encourage effective school leadership, such as expanding school choice options for families and attracting and retaining effective schoolteachers.

Conclusion

Taxpayers have invested considerable resources in the nation's public schools. However, ever-increasing funding of education has not led to similarly improved student performance. Instead of simply increasing funding for public education, federal and state policymakers should implement education reforms designed to improve resource allocation and boost student performance.

—Dan Lips is Senior Policy Analyst in Education in the Domestic Policy Studies Department, Shanea J. Watkins, Ph.D., is Policy Analyst in Empirical Studies in the Center for Data Analysis, and John Fleming is Senior Data Graphics Editor at The Heritage Foundation.

22. U.S. Department of Education, *Digest of Education Statistics 2007*, Table 165. Instruction is defined as "encompass[ing] all activities dealing directly with the interaction between teachers and students. Teaching may be provided for students in a school classroom, in another location such as a home or hospital, and in other learning situations such as those involving co-curricular activities. Instruction may be provided through some other approved medium, such as television, radio, telephone, and correspondence. Instruction expenditures include: salaries, employee benefits, purchased services, supplies, and tuition to private schools." *Ibid.*, Appendix B.
23. For example, see Patrick J. Wolf, "School Voucher Programs: What the Research Says About Parental School Choice," *Brigham Young University Law Review*, Vol. 2008, No. 2, at *http://lawreview.byu.edu/archives/2008/2/90WOLF.FIN.pdf* (September 2, 2008).
24. Caroline Minter Hoxby, "Rising Tide," *Education Next*, Vol. 1, No. 4 (Spring 2001), pp. 69–74, at *http://www.hoover.org/publications/ednext/3381471.html* (September 2, 2008).

APPENDIX A

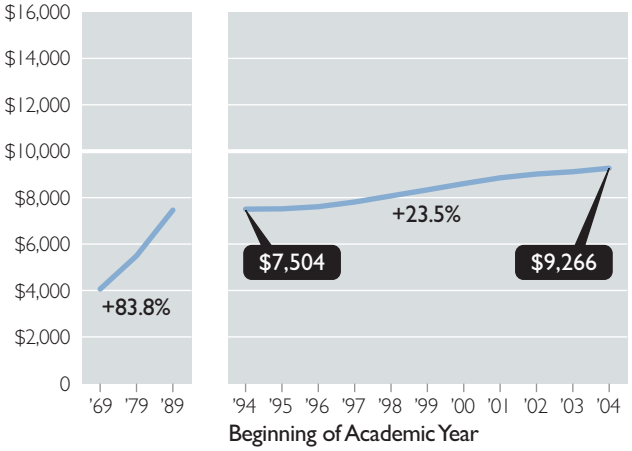
Historical Per-Pupil Expenditures on K–12 Public Education, by State

The following charts present historical data on average per-pupil expenditures (including federal, state, and local expenditures) for public elementary and secondary education. Figures are in constant 2006–2007 dollars.

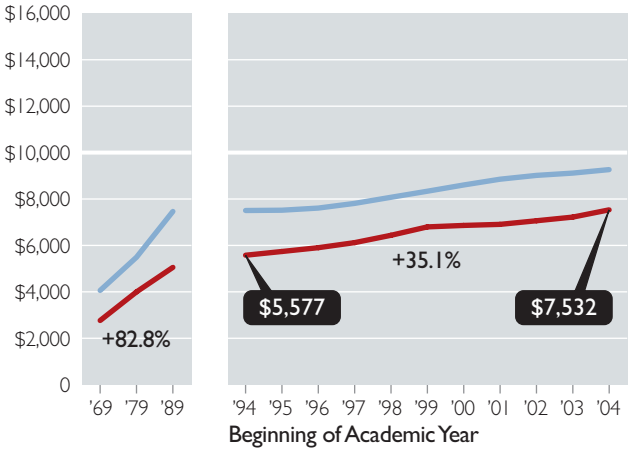
United States

Source: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics: 2007*, Table 174, at *http://nces.ed.gov/programs/digest/d07/tables/dt07_a174.asp* (August 19, 2008).

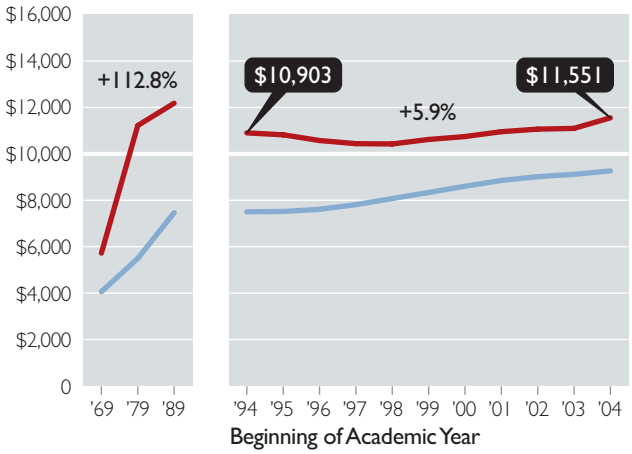
United States



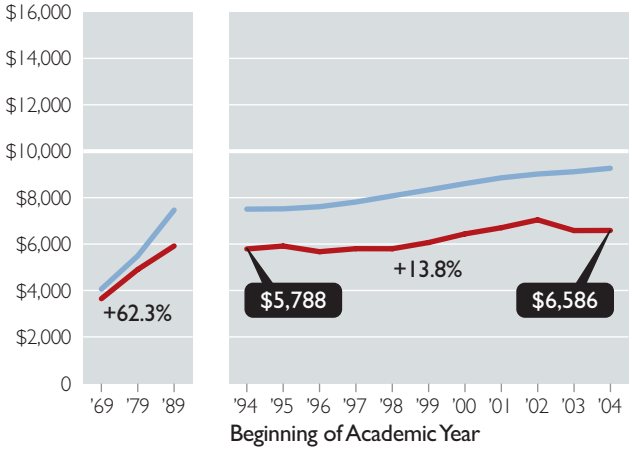
Alabama



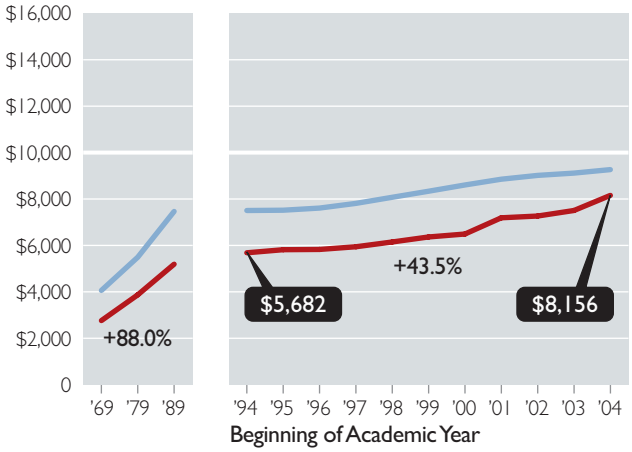
Alaska



Arizona



Arkansas



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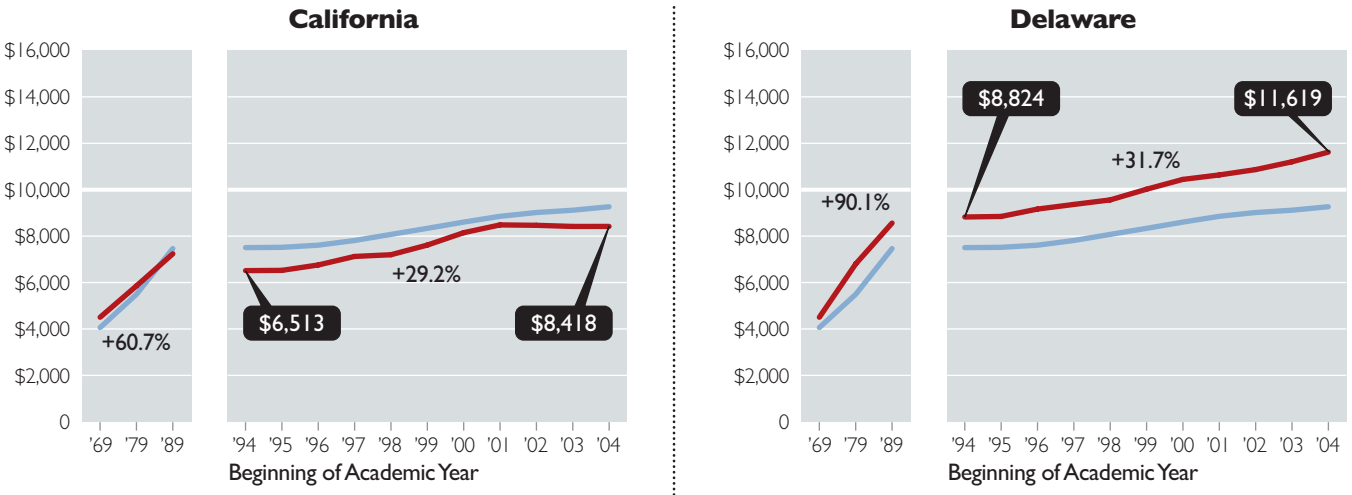

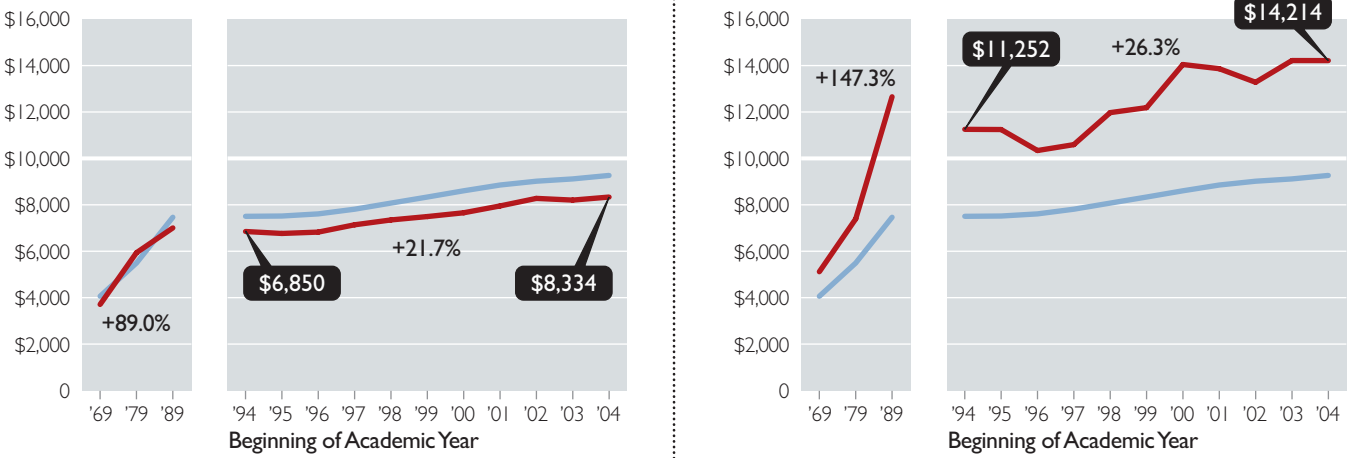

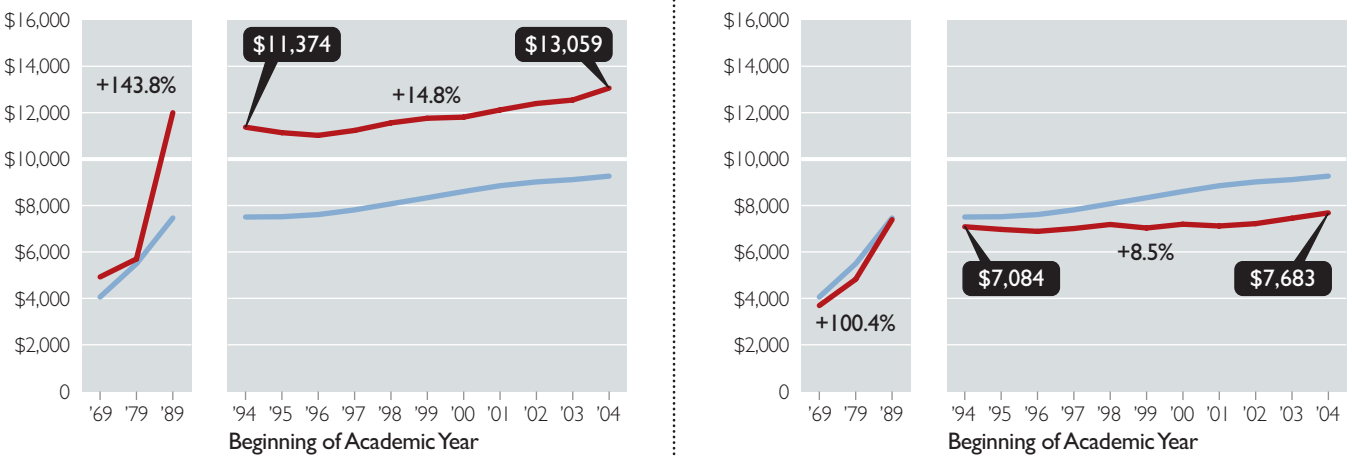

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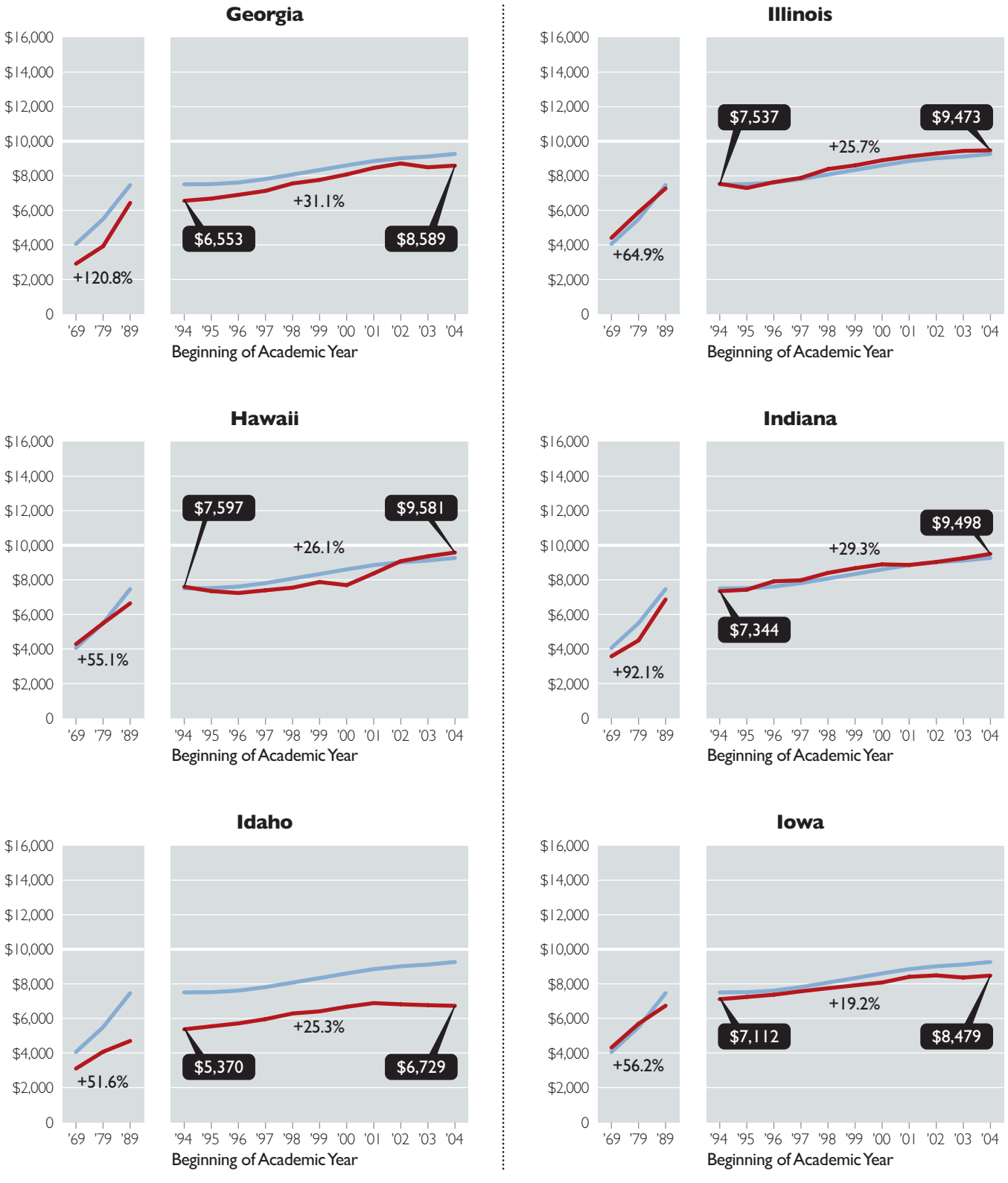

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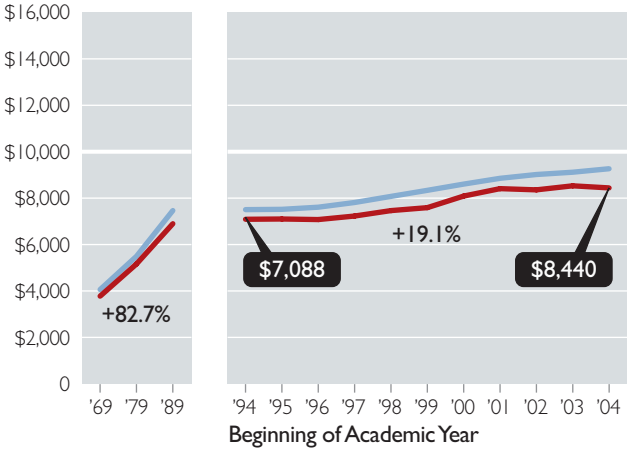

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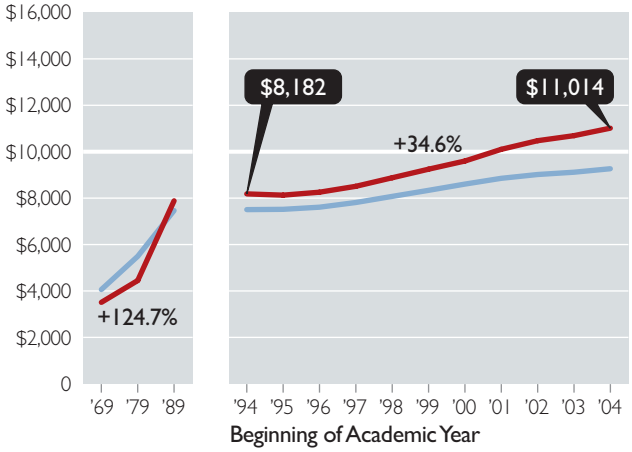

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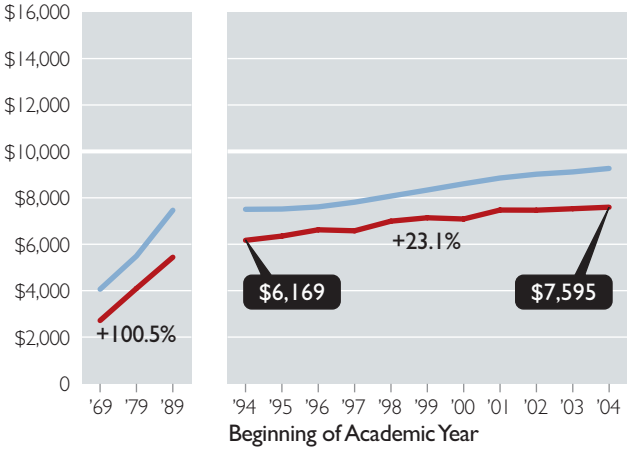

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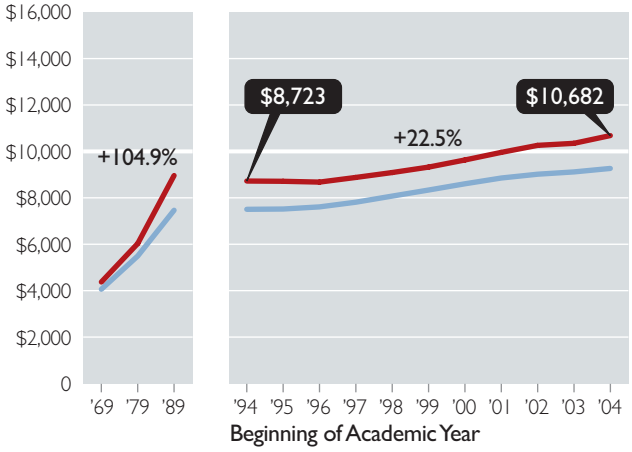

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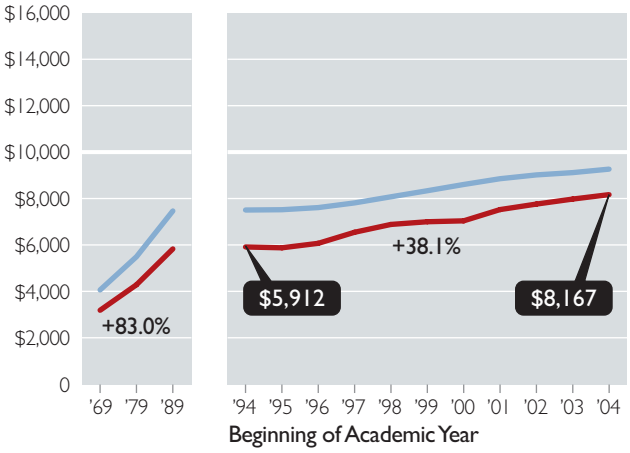
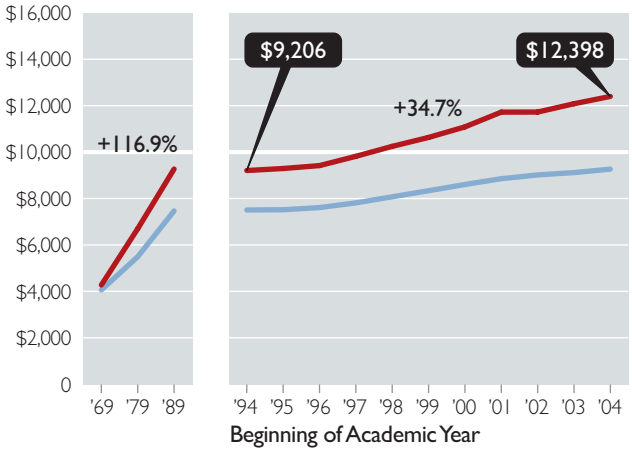


Massachusetts



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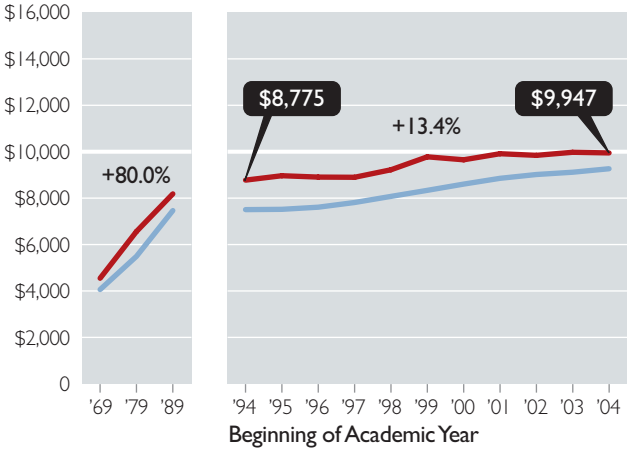
Michigan



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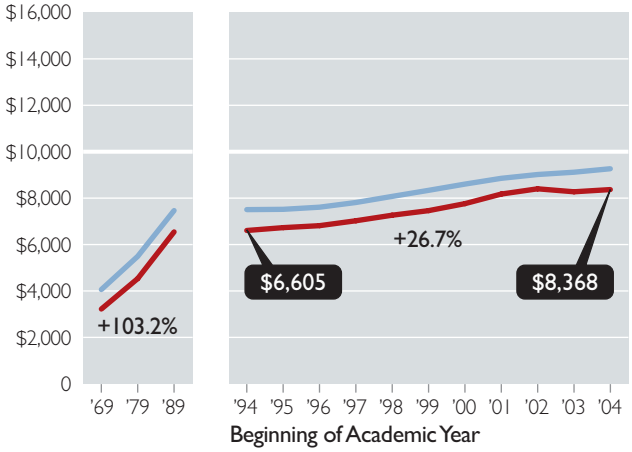

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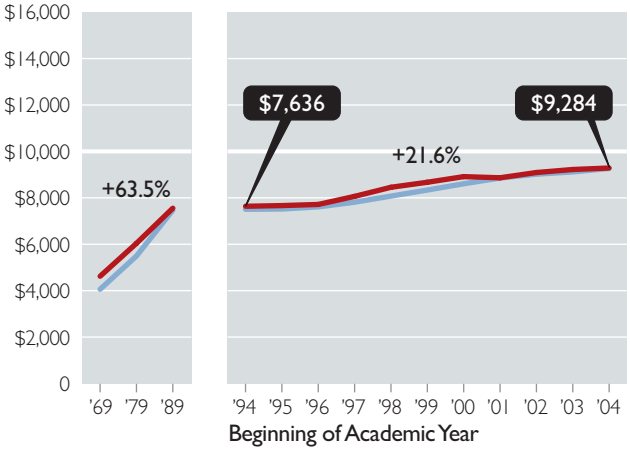

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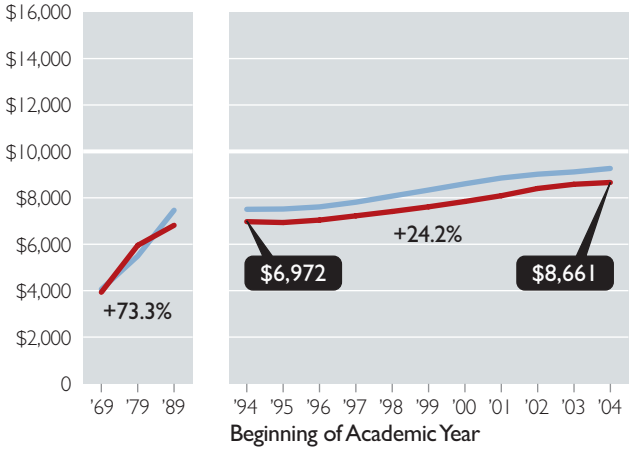

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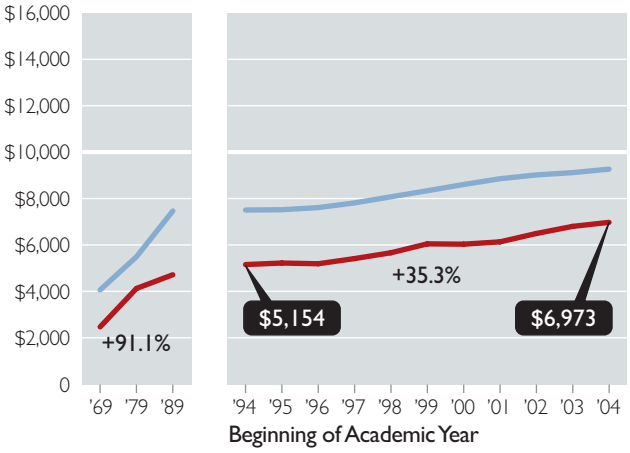

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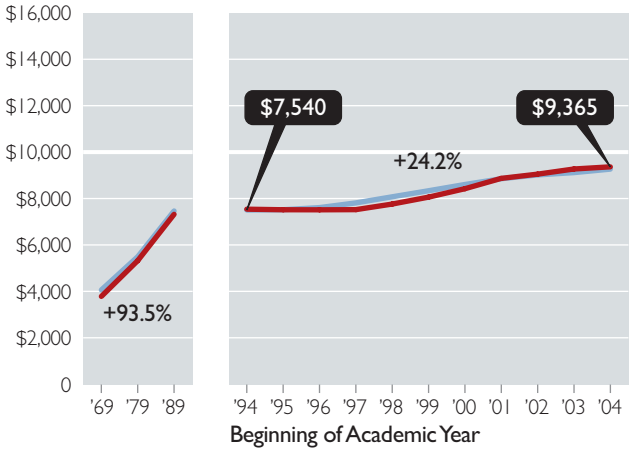

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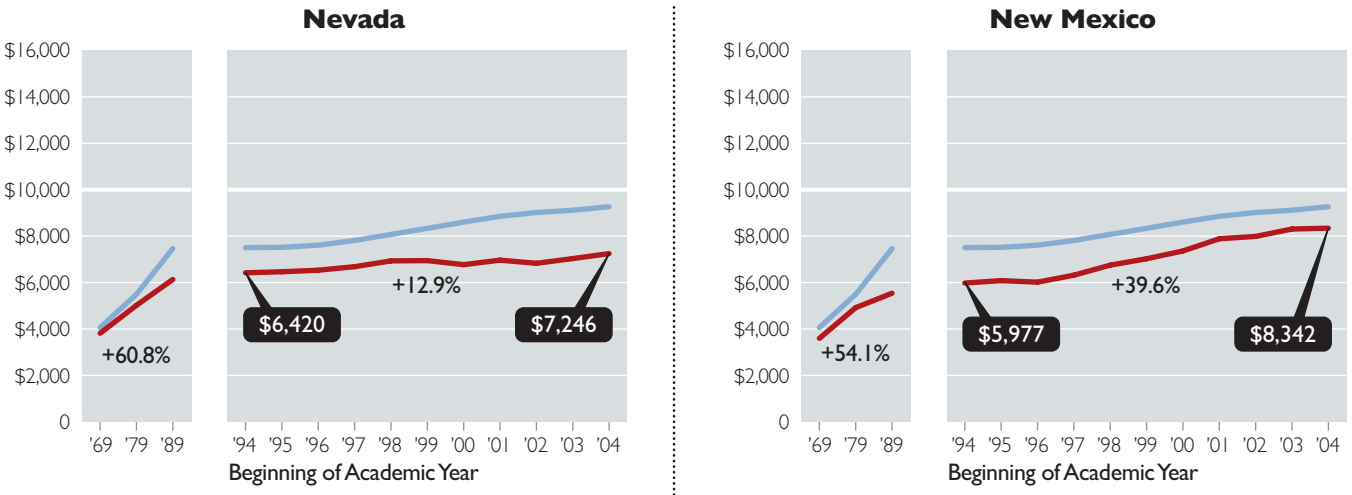

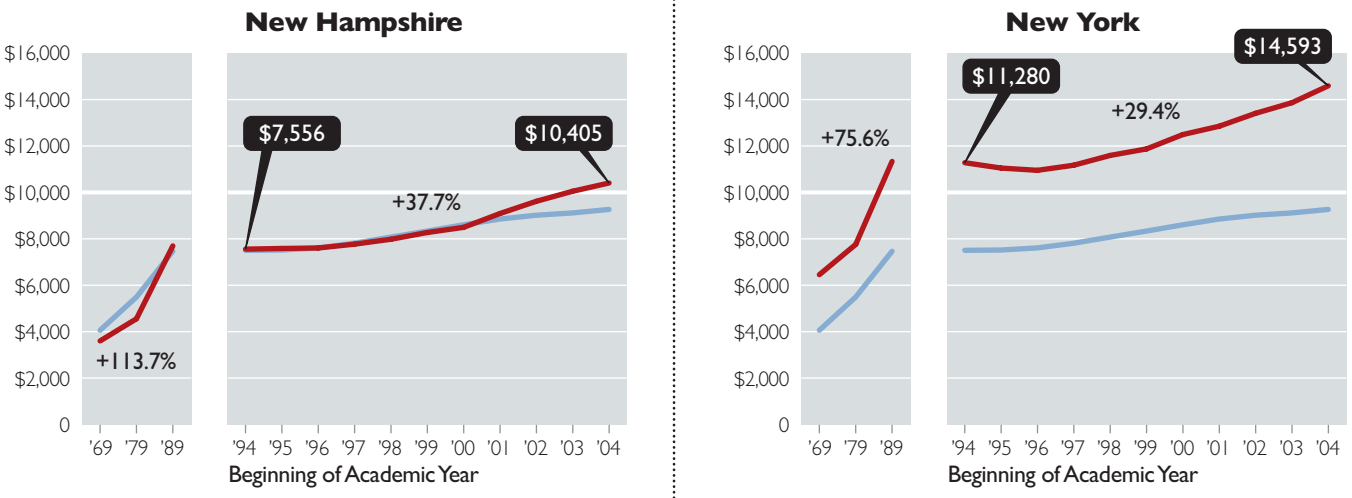

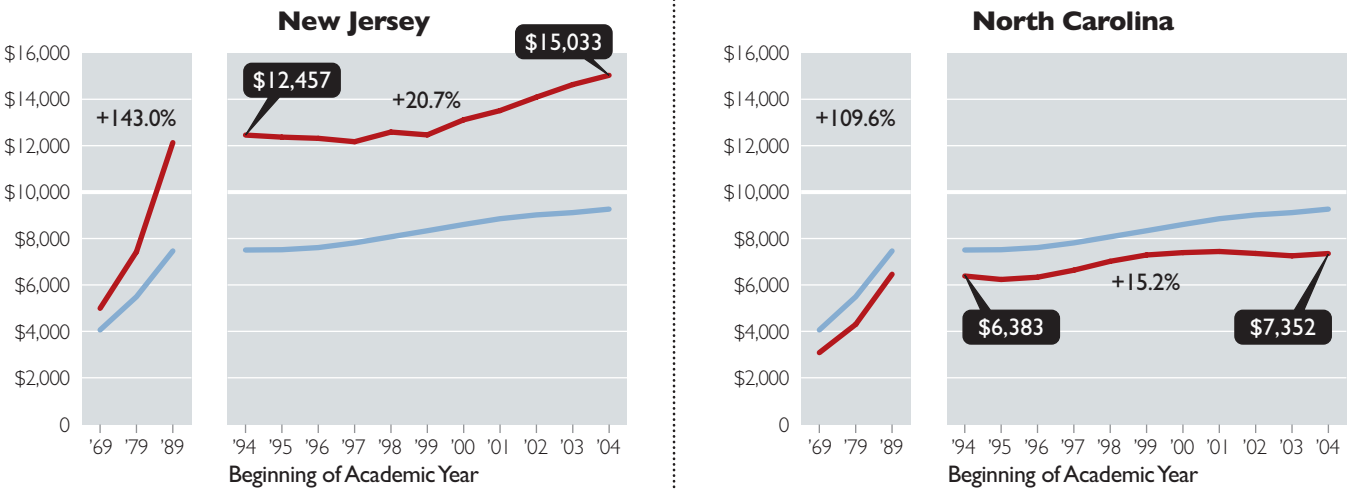

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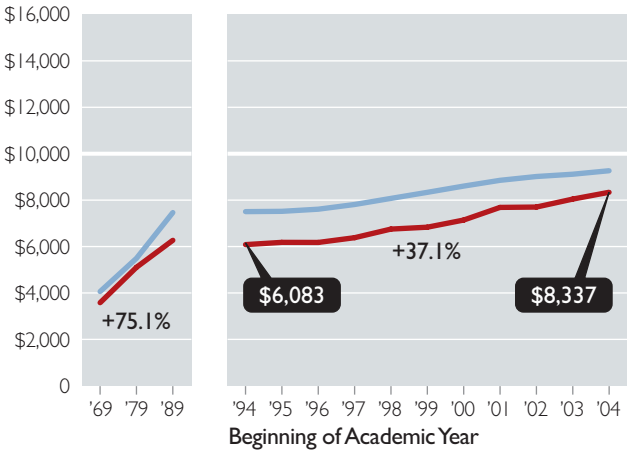
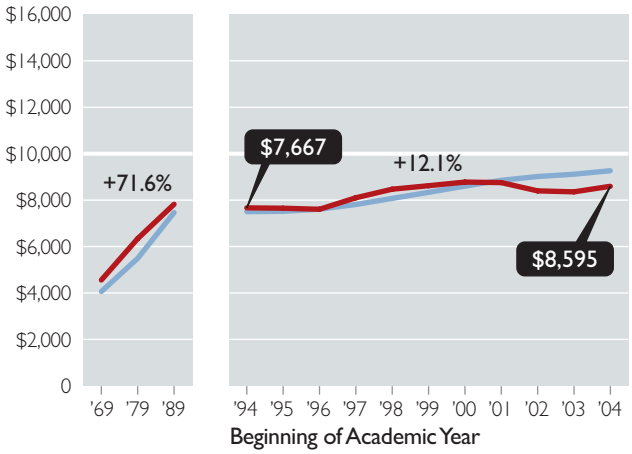
North Dakota



Oregon



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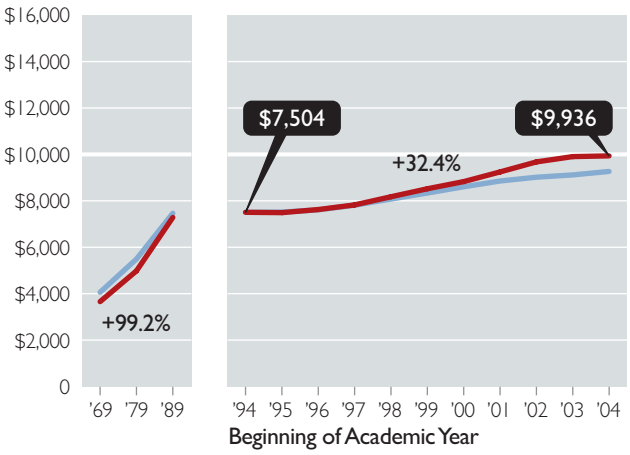
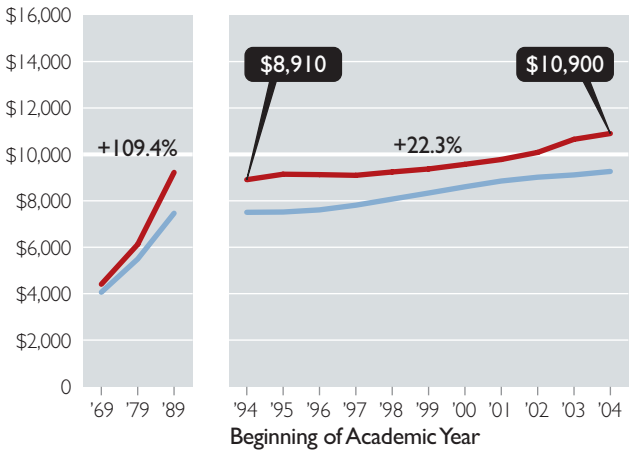
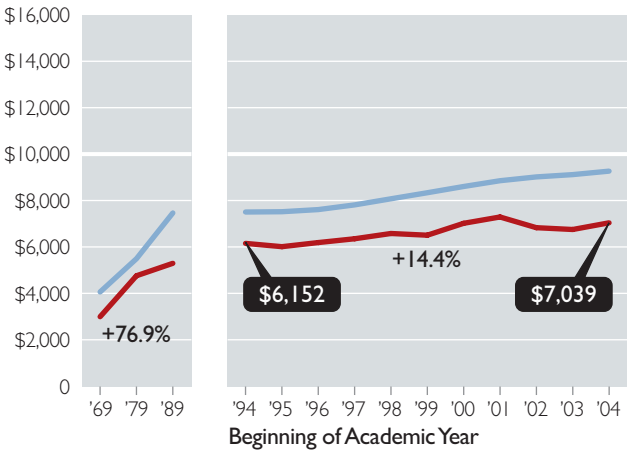


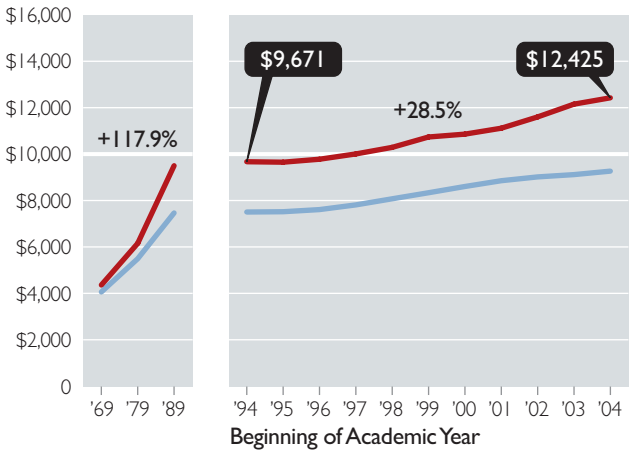
Pennsylvania



Oklahoma



Rhode Island



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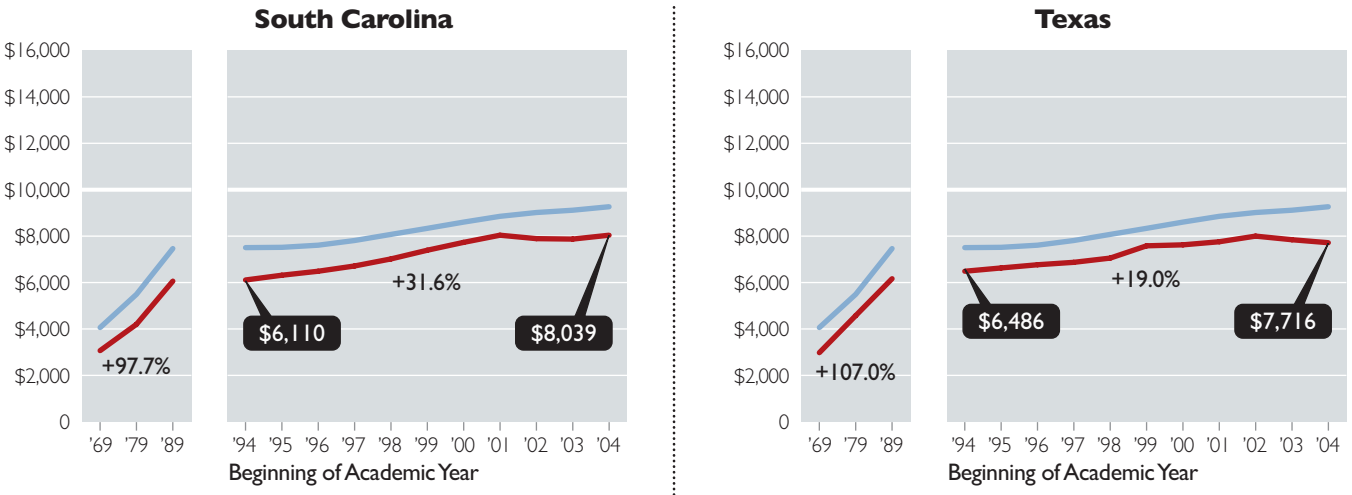

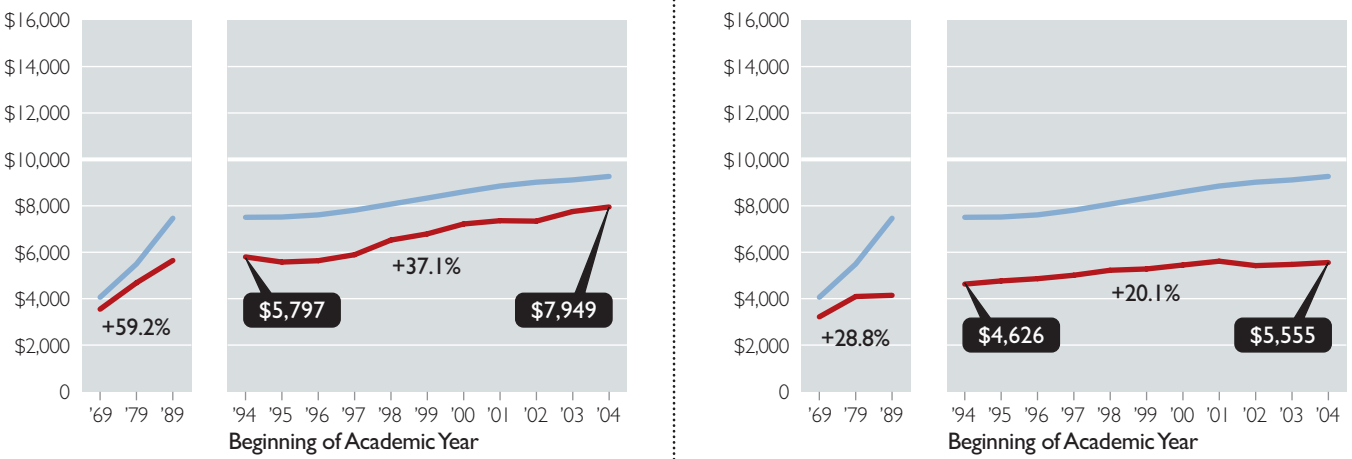

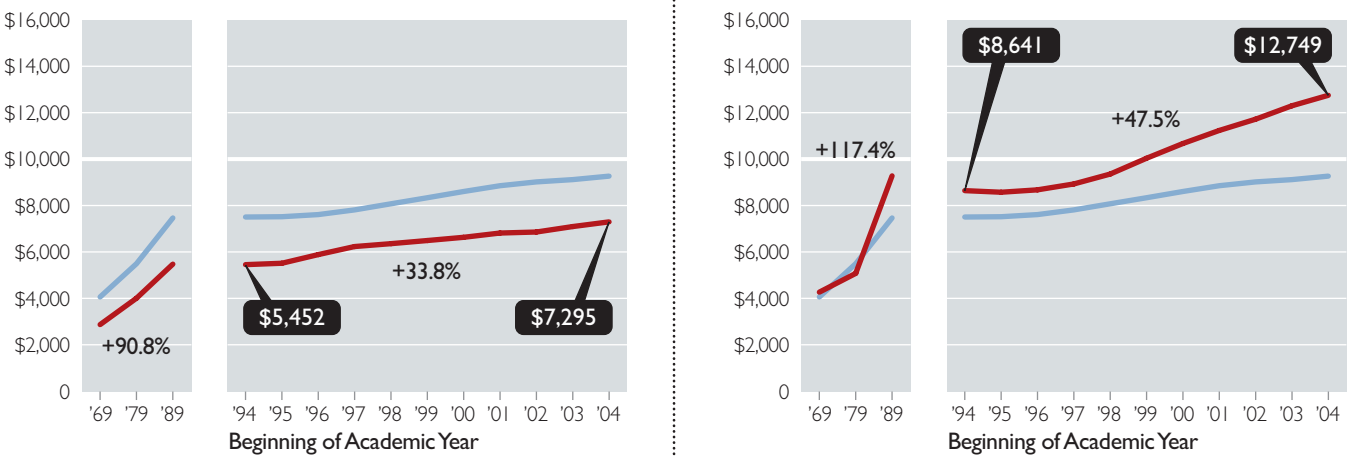

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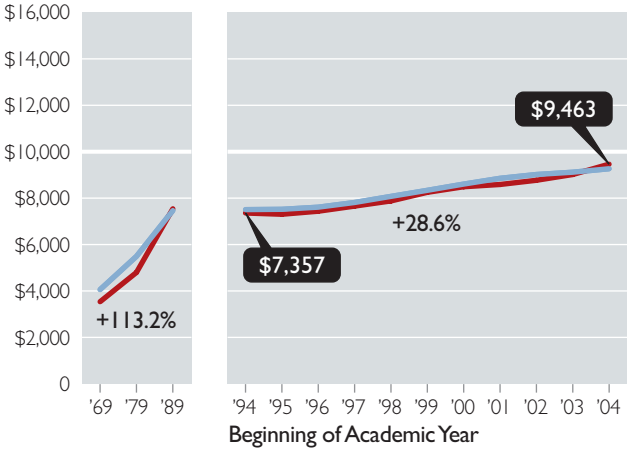
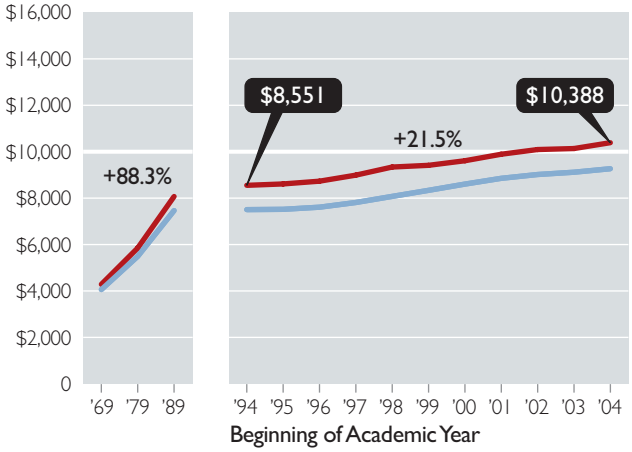
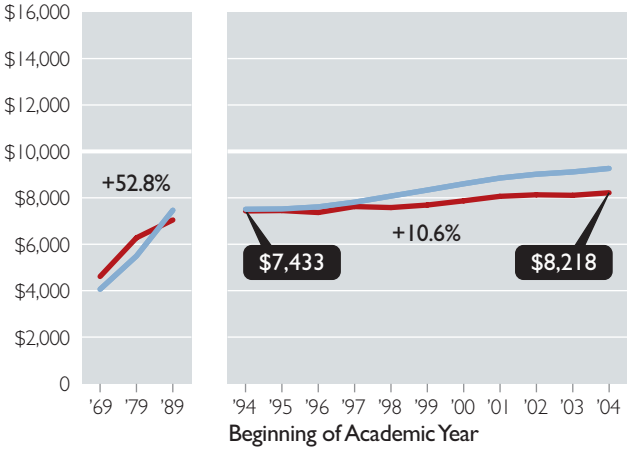
Virginia



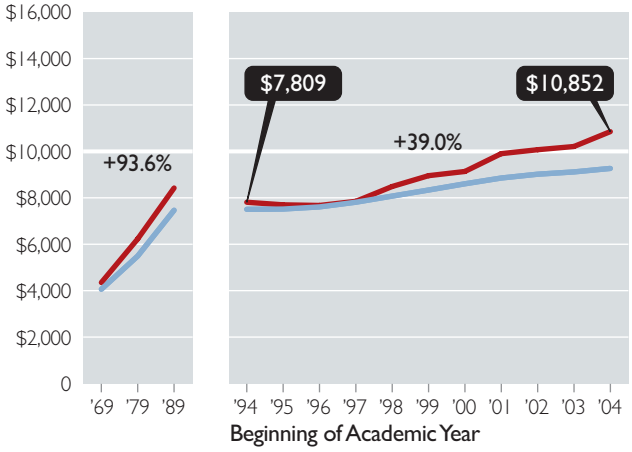
Wisconsin



Washington



Wyoming



West Virginia

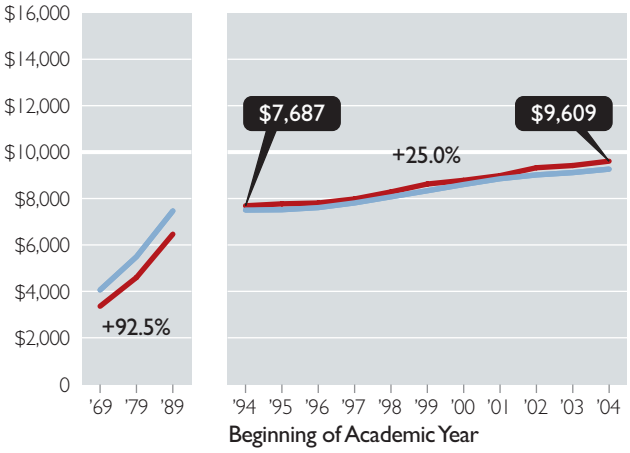
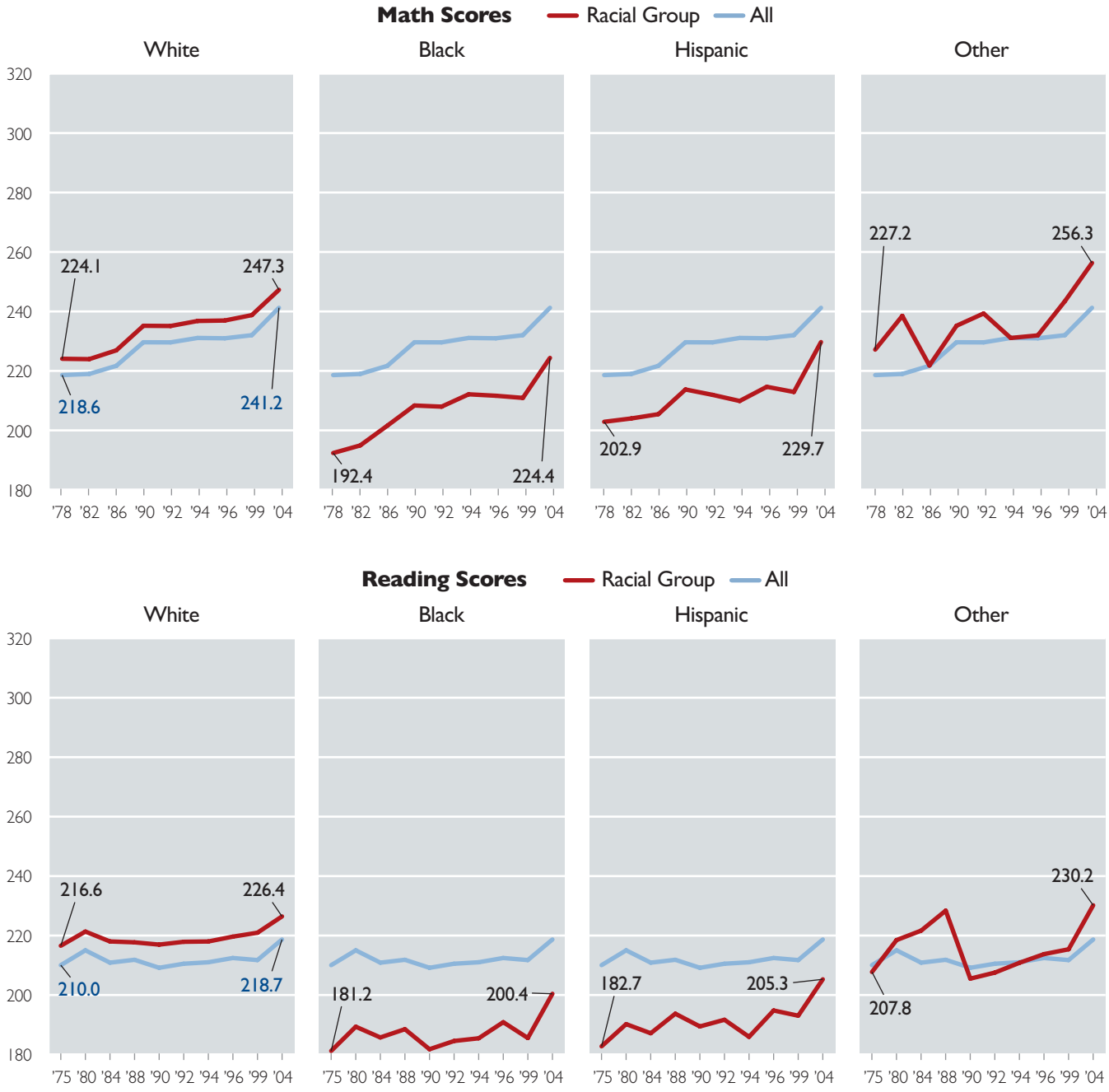


Chart A1-9 • B 2179 heritage.org

APPENDIX B

4th Grade NAEP Math and Reading Scores by Race

Average scores for long-term trend mathematics and reading for students age 9.



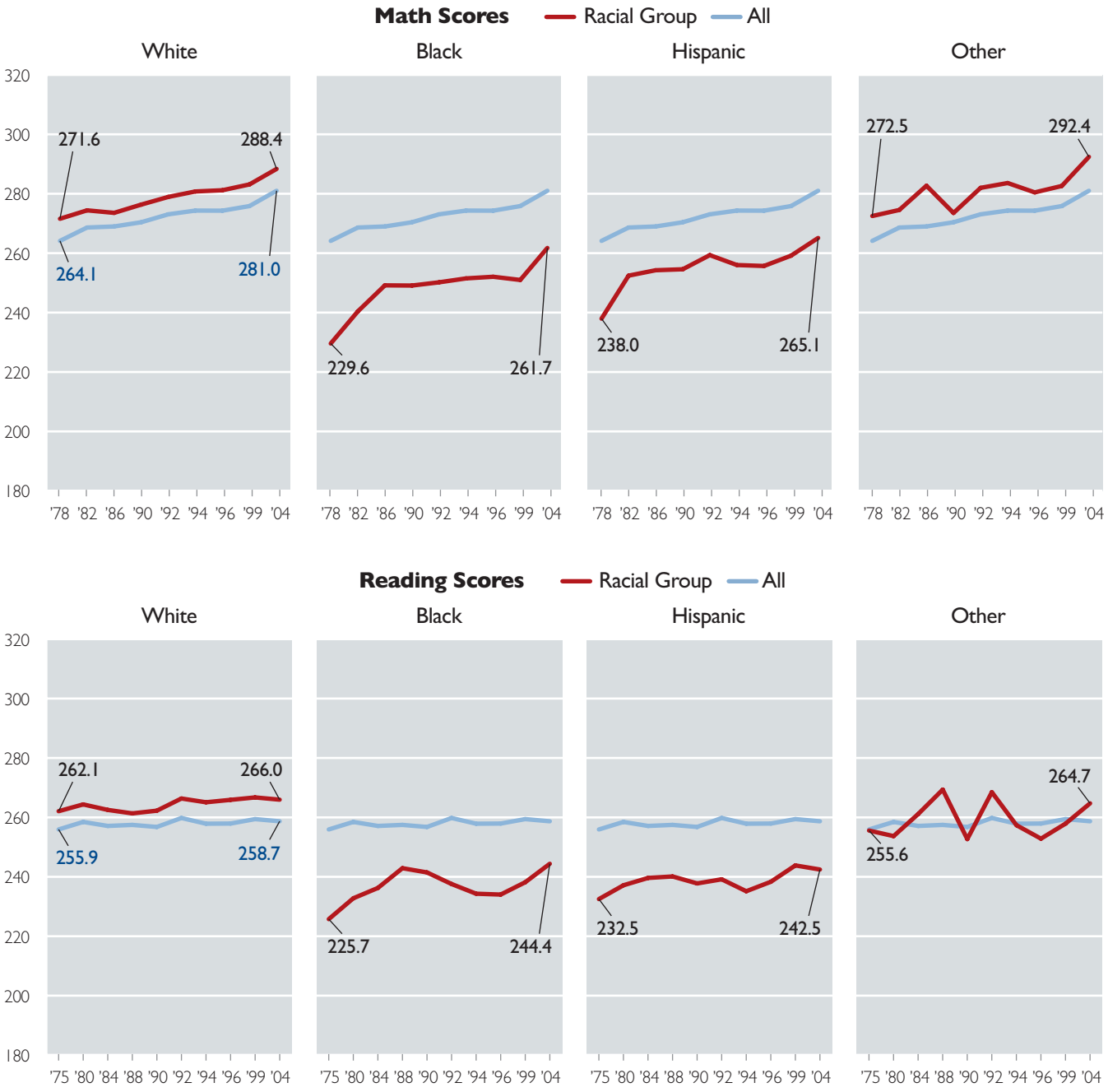
Note: The NAEP long-term trend reading and mathematics scales range from 0 to 500. Observed differences are not necessarily statistically significant.

Source: U.S. Department of Education, National Center for Education Statistics, NAEP Data Explorer, at *http://nces.ed.gov/nationsreportcard/naepdata* (August 19, 2008).

Chart B1 • B 2179 heritage.org

8th Grade NAEP Math and Reading Scores by Race

Average scores for long-term trend mathematics and reading for students age 13.



Note: The NAEP long-term trend reading and mathematics scales range from 0 to 500. Observed differences are not necessarily statistically significant.

Source: U.S. Department of Education, National Center for Education Statistics, NAEP Data Explorer, at *http://nces.ed.gov/nationsreportcard/naepdata* (August 19, 2008).

Chart B2 • B 2179 heritage.org

12th Grade NAEP Math and Reading Scores by Race

Average scores for long-term trend mathematics and reading for students age 17.

Note: The NAEP long-term trend reading and mathematics scales range from 0 to 500. Observed differences are not necessarily statistically significant.

Source: U.S. Department of Education, National Center for Education Statistics, NAEP Data Explorer, at *http://nces.ed.gov/nationsreportcard/naepdata* (August 19, 2008).

Chart B3 • B 2179 heritage.org