

less than males; the recent increase in the salary gap is surprising. The gender disparity occurs when comparing women's and men's salaries within specific sectors and ranks. Women were much less likely to hold full professorships than were males, though their share increased over the past decade; women were more likely to be located in the lower ranks. Faculty in institutions with collective bargaining agreements generally received more pay than colleagues in non-bargaining colleges.

President Obama's challenge to increase the number of community college completions and the country's proportion of four-year college graduates will result in a large influx of enrollments. This influx, in turn, will increase the need for faculty, offerings, and facilities. The number of faculty members must increase massively over the next ten years for the United States to meet the president's student completion goals. This increase will have major implications for institutional finance and structures, including higher faculty salaries.

## NOTES

<sup>1</sup> This erosion of purchasing power may, in part, reflect a change in definitions for these ranks that occurred in the early 1990s.

<sup>2</sup> Lee and Harmon, 1999.

<sup>3</sup> Perna, 2001.

<sup>4</sup> Faculty members in Alaska's public two-year institutions earned more than their colleagues in public four-year institutions over the last decade.

<sup>5</sup> White House, 2009.

<sup>6</sup> U.S. Department of Education, 2008.

<sup>7</sup> U.S. Census Bureau, 2009.

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# The Great Recession: Implications for Higher Education

By William Zumeta

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*Zumeta is co-authoring a book about the challenges of financing U.S. higher education in an era of unprecedented need and restricted public support. He is also co-editing a volume on the role of public policies in the surge in private higher education on several continents. He has served on the Policy Council (national board) of the Association for Public Policy Analysis and Management, on the Public Policy Council of the Association for the Study of Higher Education, and on several editorial boards.*

The Great Recession of 2008-09, most economists say, has probably ended—but not before the United States endured its worst economic downturn since the Depression of the 1930s. The good news is that it's over. But the prospect of a long recovery period of slow growth and rising unemployment is bad news for colleges and their students.

This chapter briefly recaps the recent economic turmoil and looks at the economy's prospects and challenges. After examining the fiscal condition of the states—central to the fortunes of public higher education—we consider how colleges and universities fared in this steep,

scary downturn and what the future may hold. We then examine the effects of the downturn on state appropriations for higher education, the implications of the downturn for tuition, and the extent to which student aid mitigated the effects of tuition increases.

## THE STATE OF THE ECONOMY

The world's economy teetered at the edge of an abyss in late 2008 and early 2009. Falling over the edge, many economists believe, might have meant another decade like the 1930s if the U.S. government had failed to take unprecedented, massive monetary and fiscal measures to stimulate the economy in early 2009. Federal loans

and equity purchases propped up huge banks and auto industry icons General Motors and Chrysler, whose failure might have meant economic collapse.

The Federal Reserve dropped interest rates to near zero to stimulate economic activity. Congress provided an \$8,000 tax credit to first time homebuyers and a credit of up to \$4,000 for trading in gas guzzling cars. It also extended unemployment benefits and provided \$140 billion in aid to state governments as part of a staggering \$787 billion fiscal stimulus package. All told, the federal government injected an estimated \$4.7 trillion into the ailing economy in 2008 and 2009.<sup>1</sup>

By October 2009, most economists agreed that these stimuli had ended the recession.<sup>2</sup> The official estimate of July-September Gross Domestic Product showed a respectable 2.8 percent (annualized) growth rate after four straight quarters of decline.<sup>3</sup> Yet, economists forecast that unemployment—10.2 percent in October; the highest in more than a quarter century—would continue to climb as employers shunned payroll growth during continued uncertainty.<sup>4</sup> Consumer and business confidence were low. Housing prices, temporarily boosted by the new homebuyer tax credit, resumed their fall, while home foreclosures continued. Observers worried about the soft market for commercial mortgages.<sup>5</sup> Some economists foresaw a double-dip recession where the economy would again slip into negative growth.

Washington officials talked of extending stimulus efforts to avoid this slippage, but Congress, fearing the budgetary implications, extended the new homebuyer tax credit while enacting no new programs as of late 2009. Most analysts foresaw slow, uneven economic growth. “It may take the nation until the second half of the next decade to return to the pre-recession labor market conditions of 2007,” even using optimistic assumptions, concluded two economists who studied past recoveries from recessions.<sup>6</sup>

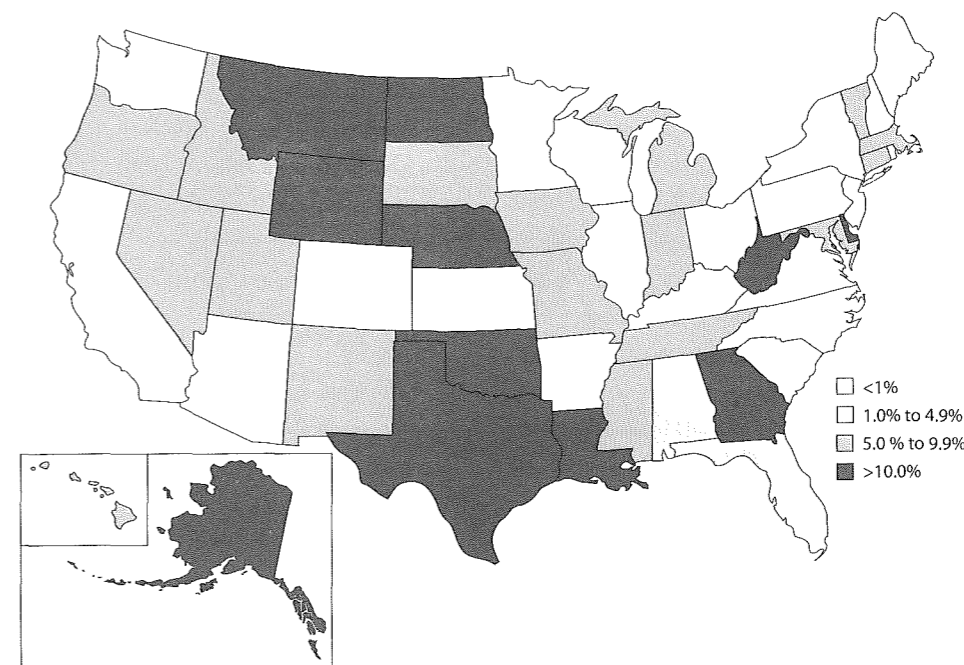
## FISCAL STATUS OF THE STATES

States’ revenues come largely from sales taxes and personal and business income taxes, so their finances respond rapidly to economic downswings. Reserve or “rainy day” funds can buffer the impact of appropriations declines, but prosperity often creates political pressures to create new programs and to reduce taxes. These pressures, in turn, limit the growth of these reserve funds. Aggregate state reserves stood at near record levels shortly before the present recession. But the reserves failed to offset much of the steep, sudden revenue drop-offs.

Compounding the problem was that many states—confronting gloomy forecasts of economic stagnation—hesitated to deplete reserves too quickly. The national sum of states’ fiscal year end balances peaked at \$69 billion in FY 2006. The sum declined to \$62.3 billion at the end of FY 2008 before plummeting to an estimated \$36.7 billion in FY 2009.<sup>7</sup> Figure 1 shows six states with FY 2009 ending balances below one percent of the year’s expenditures, a precarious level. Another 15 states had slim balances between one and five percent of expenditures. The few states whose finances weathered the recession tolerably well have revenues from mineral wealth: Montana, North Dakota, Oklahoma, Texas, and Wyoming, for example. Prices of these commodities fluctuate: they fell sharply around the start of FY 2010 (July 1, 2009 for most states) only to climb again in the autumn.

The states faced unprecedented revenue and budget shortfalls as they patched FY 2009 budgets and built FY 2010 budgets. April through June 2009 tax collections in the 50 states and Puerto Rico fell 17 percent compared to the previous year.<sup>8</sup> FY 2009 post-enactment budget shortfalls totaled almost \$73 billion.<sup>9</sup> These midyear gaps exceeded 20 percent of the budget in Alaska, Arizona, Nevada, and Puerto Rico, and topped 10 percent in another 17 states.<sup>10</sup> To enact FY 2010 budgets, the states in aggregate had to close gaps between projected revenues

Figure 1. Total Year-End Balances as a Percentage of Expenditures, FY 2009



Source: National Governors Association and National Association of State Budget Officers, *Fiscal Survey of States*, June 2009, Figure 4, 29.

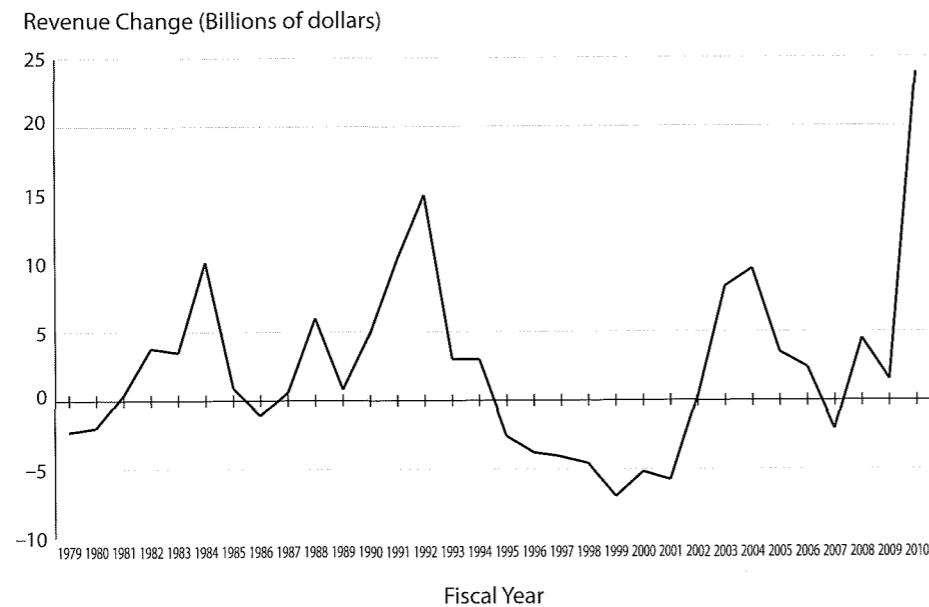
and expenditures totaling an unprecedented \$142.6 billion.<sup>11</sup> This need produced contentious legislative sessions; eight states enacted budgets after statutory deadlines.<sup>12</sup>

The \$140 billion in American Recovery and Reinvestment Act (ARRA) stimulus funds provided to state governments (over several years) significantly helped to close budget gaps. ARRA funds covered an estimated 30 to 40 percent of states’ 2009 and 2010 budget shortfalls.<sup>13</sup> States also raised taxes and fees, as in previous recessions (Figure 2). FY 2010 tax increases totaled at least \$24.3 billion, about three percent of FY 2009 collections.<sup>14</sup>

ARRA funds and taxes, combined with sizeable budget cuts, proved inadequate in many states. New gaps emerged in enacted FY 2010 budgets as revenues lagged behind already pessimistic projections. Table 1 shows pre- and post-enactment FY 2010 budget gaps for all states with budget gaps. Just over three months into the fiscal year for most states, the

post-enactment gaps totaled \$15.8 billion and seemed to be growing. The far right hand column shows the total FY 2010 gap (including any gap closed in formulating the 2010 budget) as a percentage of the general fund budget of each state. Nationally, the budget gap was 26 percent, a large figure. This aggregate budget shortfall exceeded 50 percent in California and 48 percent in Arizona. The next tier included Alaska (30 percent), Illinois (37.7 percent), Nevada (37.8 percent), New Jersey (29.9 percent), New York (37.7 percent), and Oregon (29 percent in a two-year budget).

These shortfalls necessitated painful budget cuts. State and local governments eliminated 204,000 jobs, according to the Department of Labor.<sup>15</sup> Twenty-six states instituted hiring freezes, 22 reduced workers’ wages, 13 states and the District of Columbia announced layoffs, and several states delayed scheduled pay increases. At least 27 states restricted eligibility for health insurance or access to health

**Figure 2. Enacted State Revenue Changes, FY 1979 to FY 2009; and Proposed State Revenue Actions, FY 2010**

Source: National Governors Association and National Association of State Budget Officers, *Fiscal Survey of the States*, June 2009, Table 10, 23.

care for low-income children or families. At least 24 states plus the District cut services or raised charges to elderly and disabled people for health and home care services. A minimum of 25 states and the District cut aid to K-12 schools and to other education programs. But, in 34 states, public colleges and universities were frequently cut.

These cuts were bad enough, but the future appears worse. By the end of FY 2010 (June 30, 2010 for most states) states faced at least \$178 billion in estimated aggregate budget gaps; projected FY 2011 budget gaps total an additional \$193 billion.<sup>16</sup> The December 2010 scheduled end of most federal stimulus funding to states heightens the problem. CBPP foresees a \$120 billion gap in FY 2012—a potentially conservative estimate.<sup>17</sup> States' fiscal difficulties usually last two to three years after recessions officially end. The primary reason: slow recovery in employment results in depressed sales and income tax receipts. This effect can be seen in Figure 3, which depicts year over year state budget

growth summed over the 50 states. The length and depth of this recession and the likelihood of very sluggish recovery will likely affect states' finances for more than half a decade.

#### HOW HIGHER EDUCATION FARED

Higher education suffers disproportionate losses in tough fiscal times as demands on other major state functions—including Medicaid, prisons, public assistance, and local government aid—tend to rise. K-12 education, the largest general fund supported function in most states, while not recession sensitive, is difficult to reduce significantly. Higher education is the third largest spending category—Medicaid passed it in an earlier recession. But unlike most other categories, states are not obligated to fund growing enrollments nor to provide any formula-driven amount per student. Most important, the “clients” in higher education can and will be asked to pay more when times are tough. States can then use scarce funds to meet other pressing needs.

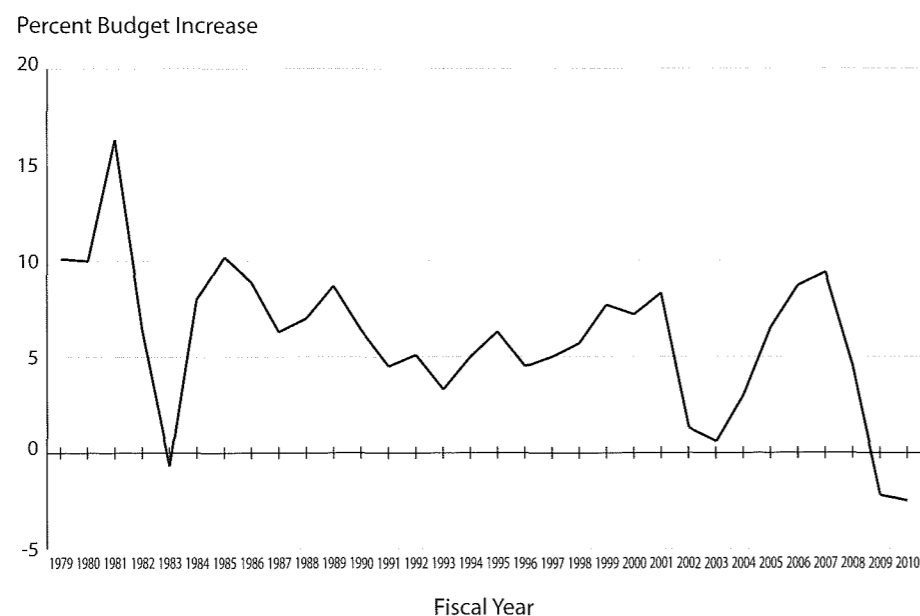
**Table 1. States with FY 2010 Budget Gaps**

	FY 2010 before Budget Adoption	FY 2010 Mid-Year Gap	FY 2010 Total	FY 2010 Total: Percent of General Fund Budget
Alabama	\$ 1,200,000,000	\$ 400,000,000	\$ 1,600,000,000	22.2%
Alaska	1,300,000,000	0	1,300,000,000	30.0
Arizona	3,200,000,000	2,000,000,000	5,200,000,000	53.0
Arkansas	146,000,000	107,000,000	253,000,000	5.6
California	45,500,000,000	6,300,000,000	51,800,000,000	56.2
Colorado	1,000,000,000	561,000,000	1,600,000,000	21.0
Connecticut	4,200,000,000	549,000,000	4,700,000,000	27.0
Delaware	557,000,000	0	557,000,000	17.6
District of Columbia	650,000,000	150,000,000	800,000,000	12.7
Florida	5,900,000,000	147,000,000	6,000,000,000	23.3
Georgia	3,100,000,000	1,200,000,000	4,300,000,000	24.9
Hawaii	682,000,000	533,000,000	1,200,000,000	23.7
Idaho	411,000,000	151,000,000	562,000,000	22.4
Illinois	9,300,000,000	5,000,000,000	14,300,000,000	40.9
Indiana	1,100,000,000	309,000,000	1,400,000,000	9.6
Iowa	779,000,000	415,000,000	1,200,000,000	20.2
Kansas	1,400,000,000	459,000,000	1,800,000,000	.0
Kentucky	0	1,200,000,000	1,200,000,000	12.9
Louisiana	1,800,000,000	0	1,800,000,000	21.6
Maine	640,000,000	209,000,000	849,000,000	26.9
Maryland	1,900,000,000	936,000,000	2,800,000,000	20.4
Massachusetts	5,000,000,000	600,000,000	5,600,000,000	20.0
Michigan	2,800,000,000	0	2,800,000,000	12.4
Minnesota	3,200,000,000	209,000,000	3,400,000,000	22.3
Mississippi	480,000,000	370,000,000	850,000,000	17.1
Missouri	780,000,000	690,000,000	1,500,000,000	16.4
Nebraska	150,000,000	155,000,000	305,000,000	8.6
Nevada	1,200,000,000	67,000,000	1,200,000,000	40.0
New Hampshire	250,000,000	38,000,000	288,000,000	18.7
New Jersey	8,800,000,000	400,000,000	9,200,000,000	31.3
New Mexico	345,000,000	650,000,000	995,000,000	18.1
New York	17,900,000,000	3,200,000,000	21,000,000,000	38.0
North Carolina	4,600,000,000	0	4,600,000,000	21.9
Ohio	3,300,000,000	296,000,000	3,600,000,000	13.4
Oklahoma	777,000,000	550,000,000	1,300,000,000	23.2
Oregon*	4,200,000,000	0	4,200,000,000	29.0
Pennsylvania	4,800,000,000	450,000,000	5,200,000,000	19.7
Rhode Island	590,000,000	400,000,000	990,000,000	32.2
South Carolina	725,000,000	439,000,000	1,200,000,000	20.1
South Dakota	32,000,000	0	32,000,000	2.9
Tennessee	1,000,000,000	96,000,000	1,100,000,000	10.7
Texas	3,500,000,000	0	3,500,000,000	9.5
Utah	721,000,000	279,000,000	1,000,000,000	19.8
Vermont	278,000,000	28,000,000	306,000,000	27.3
Virginia	1,800,000,000	1,800,000,000	3,600,000,000	22.0
Washington*	3,400,000,000	2,600,000,000	6,000,000,000	26.0
West Virginia	184,000,000	100,000,000	284,000,000	7.5
Wisconsin	3,200,000,000	0	3,200,000,000	23.2
Wyoming	0	32,000,000	32,000,000	1.7
<b>Total</b>	<b>158,500,000,000</b>	<b>34,100,000,000</b>	<b>192,600,000,000</b>	<b>28.1</b>

Source: Center on Budget and Policy Priorities. “Recession Continues to Batter State Budgets; State Responses Could Slow Recovery.” December 18, 2009. Table 2, 5.

Notes: Some or all of the pre-budget shortfalls have already been addressed.

\* Oregon and Washington have two-year budgets. For Oregon, the size of the combined shortfall before budget adoption for FY 2010 and FY 2011 is shown here. For Washington, the mid-year gap shown is the projected gap for the two years ending in FY 2011.

**Figure 3. Annual State General Fund Percentage Budget Increases, FY 1979 to FY 2010**

Source: National Association of State Budget Officers, *Fiscal Survey of the States*, June 2009, Table 2, 7.

Long-term, state per-student support for higher education has remained stagnant at best. Support has generally increased in prosperous times, but fallen sharply in recessions and their increasingly long aftermath. State (and local) appropriations in FY 2008—before the effects of the recession became apparent—were \$7,059 per FTE student. Coming after four consecutive years of modest increases, FY 2008 support remained almost 10 percent below the \$7,814 peak figure (in constant 2008 dollars) reached in FY 2000, just before the “dot.com” recession. This FY 2008 figure was \$210 below the FY 1985 level of state support per student.<sup>18</sup> And, the FY 2009 and FY 2010 figures will surely show a new, recession-induced nosedive.

How hard were FY 2009 and FY 2010 state higher education budgets hit by the current recession? Table 2 depicts state funding trends for higher education operations between FY 2008 and FY 2010.<sup>19</sup> The table includes lottery receipts, other state revenues, and federal stimulus funds used for higher education.<sup>20</sup> State

higher education operating support—including federal stimulus funds—decreased in 22 of the 39 reporting states over these two years.<sup>21</sup> Four of the reporting states—Alabama (–20.1 percent), Arizona (–18.8 percent), South Carolina (–13.5 percent), and Virginia (–9.7 percent)—saw declines in the 10 percent range or greater over the two years. (Several others with incomplete data appear to have had large declines as well.) Eight states—California, Iowa, Louisiana, Michigan, Nevada, Rhode Island, Washington, and West Virginia—reported funding decreases in the five to ten percent range. Another ten states showed two-year declines of less than five percent. Most reporting states used some of their federal funds to help higher education. But the amounts were generally modest as most funds went to K–12 education. Ten of the 39 reporting states allocated more than \$100 million of federal education stabilization funds for higher education.<sup>22</sup>

It appears that, *with the federal funds included*, cuts to higher education support by

**Table 2. Change in Total State Support for Higher Education, including Federal Education Stabilization Funds (ESF), FY 2008–2010**

State	FY 2008		FY 2010		Change in Support, 2008–2010
	Total State Support	ESF	Total State Support	Total State and Federal Support	
Alabama <sup>1</sup>	\$ 1,961,808,342	\$ 118,743,545	\$ 1,449,111,433	\$ 1,567,854,978	–20.08%
Alaska	299,228,000	—	332,535,400	332,535,400	11.13
Arizona <sup>1</sup>	1,361,177,700	—	1,105,279,000	1,105,279,000	–18.80
Arkansas	879,882,230	13,641,365	905,301,021	918,942,386	4.44
California	11,814,421,000	313,000,000	10,792,626,000	11,105,626,000	–6.00
Colorado	747,481,054	150,676,055	679,624,934	830,300,989	11.08
Connecticut	1,034,480,989	—	1,031,930,508	1,031,930,508	–0.25
Delaware	243,130,000	15,873,000	226,645,560	242,518,560	–0.25
Florida <sup>2</sup>	—	—	—	—	—
Georgia	2,953,507,623	108,024,135	2,977,189,312	3,085,213,447	4.46
Hawaii	554,292,000	22,000,000	575,366,000	597,366,000	7.77
Idaho	410,595,600	17,683,900	389,144,700	406,828,600	–0.92
Illinois <sup>1</sup>	2,949,248,000	40,426,300	3,039,940,000	3,080,366,300	4.45
Indiana	1,528,494,000	75,491,326	1,564,352,025	1,639,843,351	7.28
Iowa	873,709,364	103,380,000	721,515,000	824,895,000	–5.59
Kansas	825,697,884	40,000,000	753,700,801	793,700,801	–3.88
Kentucky	1,320,540,000	70,000,000	1,203,786,000	1,273,786,000	–3.54
Louisiana	1,707,668,337	189,700,000	1,410,395,395	1,600,095,395	–6.30
Maine	275,867,961	8,162,583	271,589,768	279,752,351	1.41
Maryland <sup>1</sup>	1,555,048,366	3,969,128	1,668,917,365	1,672,886,493	7.58
Massachusetts <sup>2</sup>	—	—	—	—	—
Michigan	2,033,709,000	68,238,000	1,837,465,800	1,905,703,800	–6.29
Minnesota <sup>2</sup>	—	—	—	—	—
Mississippi	1,045,937,317	—	1,006,477,155	1,006,477,155	–3.77
Missouri	1,048,295,203	106,212,100	1,036,350,818	1,142,562,918	8.99
Montana	196,664,078	29,762,223	217,790,222	247,552,445	25.88
Nebraska <sup>2</sup>	—	—	—	—	—
Nevada <sup>1</sup>	646,126,421	92,389,311	501,051,371	593,440,682	–8.15
New Hampshire <sup>2</sup>	—	—	—	—	—
New Jersey	2,044,508,000	70,805,876	2,009,830,000	2,080,635,876	1.77
New Mexico <sup>2</sup>	—	—	—	—	—
New York <sup>2</sup>	—	—	—	—	—
North Carolina <sup>2</sup>	—	—	—	—	—
North Dakota	253,901,000	—	300,891,000	300,891,000	18.51
Ohio	2,288,294,736	309,874,026	1,968,410,935	2,278,284,961	–0.44
Oklahoma	1,098,881,179	68,792,477	1,017,923,491	1,086,715,968	–1.11
Oregon <sup>2</sup>	—	—	—	—	—
Pennsylvania <sup>1</sup>	2,193,274,000	96,403,000	2,038,948,000	2,135,351,000	–2.64
Rhode Island	191,329,662	16,106,895	162,721,156	178,828,051	–6.53
South Carolina <sup>1</sup>	1,218,327,910	99,922,339	954,467,268	1,054,389,607	–13.46
South Dakota <sup>2</sup>	—	—	—	—	—
Tennessee <sup>1</sup>	1,598,765,500	165,092,900	1,474,163,400	1,639,256,300	2.53
Texas <sup>1</sup>	6,059,104,747	—	6,793,720,145	6,793,720,145	12.12
Utah	718,174,200	77,804,600	840,328,100	918,132,700	27.84
Vermont <sup>2</sup>	—	—	—	—	—
Virginia <sup>1</sup>	1,885,553,314	126,744,967	1,575,576,980	1,702,321,947	–9.72
Washington	1,767,760,000	81,421,000	1,576,199,000	1,657,620,000	–6.23
West Virginia <sup>1</sup>	562,253,000	9,863,806	503,089,382	512,953,188	–8.77
Wisconsin <sup>1</sup>	1,228,373,932	—	1,191,512,368	1,191,512,368	–3.00
Wyoming	290,504,588	8,400,000	305,457,760	313,857,760	8.04

Source: Preliminary data from joint *Grapevine-State Higher Education Executive Officers Finance Survey* (SHEF), October 2009.

Notes:

<sup>1</sup> These states have indicated that at least some of their data are estimates.

<sup>2</sup> State data are incomplete.

the states thus far are no worse than the cuts in FY 2002–04, the worst of the previous economic downswing.<sup>23</sup> Appropriations improved after the deep cutbacks in that recession, but current economic conditions augur little chance of rapid improvement. Depleted federal stimulus funds will do relatively little to aid higher education in most states' FY 2011 budgets. Then, absent new federal action, federal funding will end midway through that fiscal year. Two or three more years of reduced state support without federal help could adversely affect higher education capacity permanently in the harder hit states—a likely scenario unless the economy improves faster than expected.

Current budget hits and the prospect of more bad times ahead provoked sober thinking. Community college enrollments have jumped sharply, as is usual in recessions. But funds and staff did not always keep up with student demands for classes.<sup>24</sup> The Pennsylvania State System of Higher Education considered program consolidations. Louisiana, New York, and Ohio considered other restructuring ideas.<sup>25</sup> Some four-year schools sought more out-of-state students, who pay much higher tuition. But this strategy now worked against the tendency of cash-strapped students and families to reduce costs by staying close to home.<sup>26</sup> States even considered cuts to politically popular merit-based scholarship programs.<sup>27</sup>

Some states and institutions took dramatic actions. Arizona State University laid off 900 employees and put 12,000 workers on unpaid furloughs.<sup>28</sup> California reduced appropriations to the California State University (CSU) and the University of California (UC) by about 20 percent and cut community colleges by six percent. CSU trustees then ordered all full-time faculty members to take 24 unpaid furlough days in FY 2010—equivalent to a 10 percent pay cut. Unpaid furloughs for more than 100,000 UC employees, including faculty, ranged from 11 to 26 days over 12 months—a four to 10 percent effective salary reduction. These cuts and accompanying dramatic fee (tuition) increases

produced a reaction from students and others on the UC Berkeley campus reminiscent of the late 1960s and early 1970s.<sup>29</sup>

The University of Connecticut faced a 10 percent cut in its FY 2010 state appropriation. Idaho cut higher education funding by 6.7 percent in its enacted FY 2010 budget, and then held back another six percent of the budgeted funds. Illinois cut a whopping \$225 million from its state scholarship programs. Iowa used ARRA funds to avoid deep cuts to higher education in the enacted FY 2010 budget, but the governor subsequently ordered 10 percent cuts to higher education and to other state supported functions.

The governor and state higher education leaders in Nevada—hit hard by the real estate and financial collapse that brought on the Great Recession—fought bitterly over the budget. The legislature did not enact the governor's proposed drastic 36 percent reduction in state support for higher education. But the final budget cut 12.5 to 15 percent from different parts of higher education, mandated a 4.6 percent pay cut for non-tenured employees, and closed six satellite campuses of the College of Southern Nevada.

South Carolina's budget eliminated nearly a quarter (24 percent) of higher education's state funding. The enacted FY 2010 budget in Oregon cut support to universities and community colleges by nearly 10 percent and reduced state grants to students. Legislators discussed further significant reductions. Virginia moved to reduce initially budgeted funds for higher education by 13 to 15 percent after only modestly reducing the FY 2010 enacted budget. But the state planned to use ARRA funds to keep the net cuts to less than ten percent. Finally, the state of Washington cut more than half a billion dollars from higher education funding in the FY 2009–11 biennial budget enacted in spring 2009—about 11 percent for four-year schools and seven percent for community colleges. Tuition at the University of Washington and Washington State University was therefore scheduled to jump by 30 percent over the two years.

We now turn to the broader effects of state budget cuts on tuition.

### TUITION AND STUDENT AID

Fluctuating and generally stagnating state support for higher education in recent decades has meant that students and families pay more. The share of higher education revenue coming from students and parents grew from about 35 percent in 1980 to approximately 53 percent by 2007, while the state and local government share fell from around 55 percent to under 40 percent.<sup>30</sup> Per student net tuition revenue to public colleges and universities doubled to just over \$4,000 in inflation-adjusted 2008 dollars between 1983 and 2008, while state appropriations per student stagnated.<sup>31</sup> Tuition revenues are thus gradually replacing state support and the rate of replacement tends to jump steeply in economic downturns.

Three years of steep tuition increases followed the “dot.com” recession. At the peak in 2003–04, tuition and fee increases at public two-year institutions for state resident undergraduates averaged 14 percent. Hikes at four-year schools averaged 13 percent. Annual average tuition increases at two-year schools dropped to the four to five percent range during the post-2005 economic recovery, but annual price hikes at public four-year institutions ranged from six to seven percent.<sup>32</sup>

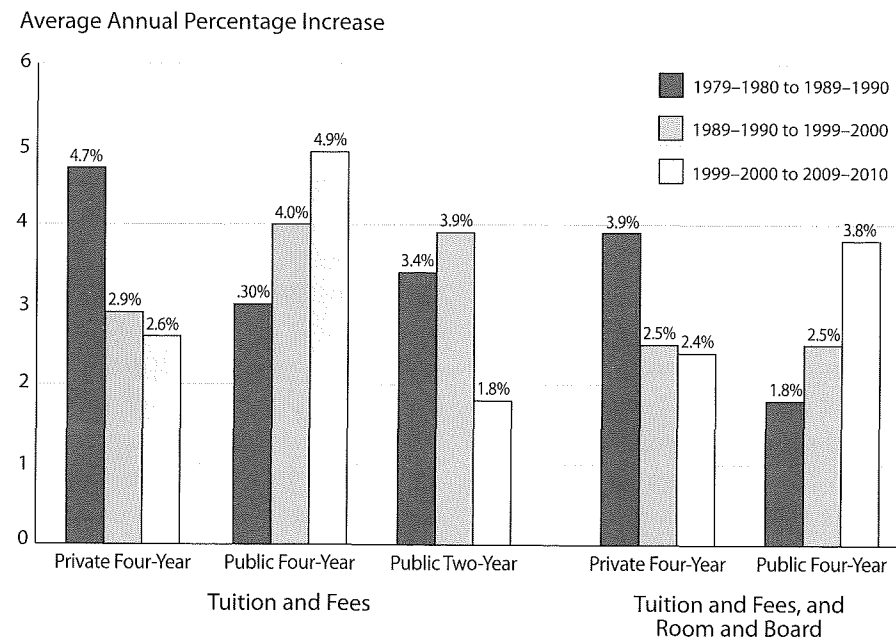
This history helps us interpret the 2009–10 figures for average tuition increases by higher education sector. Average tuition increases at public two-year colleges jumped from 4.7 percent in 2008–09 to 7.3 percent in 2009–10. These jumps may reflect efforts to help these colleges cope with large, recession-induced growth in demand for their services.<sup>33</sup> Average price increases at public four-year colleges and universities differed little from the recent past—6.5 percent in 2009–10 compared to 6.4 percent in 2008–09. This moderation in the face of substantial state budget cuts may result from serious price resistance by potential students from hard-pressed families, and from

greater political resistance to large price hikes. This supposition is congruent with enrollment reports indicating that enrollments at four-year colleges and universities remained nearly flat while community colleges reported large increases.<sup>34</sup> Meanwhile, private colleges and universities, responding to concerns about students' ability to pay, held their average price increases to an unusually low 4.4 percent in 2009–10, down from 5.9 percent in 2008–09 and from recent six to seven percent annual increases.<sup>35</sup>

Figure 4 summarizes tuition increase patterns over the past three decades by showing average annual percentage increases by sector and decade *after* taking inflation into account. A positive figure indicates that a sector's prices grew faster than general inflation in the economy—true of all three major sectors of American higher education in each decade. Tuition rates grew fastest at private colleges in the 1980s. But prices climbed faster at public institutions, especially four-year publics, in the past two decades, as state funding became increasingly unstable. Tuition increases at public four-year colleges averaged about five percent above the general inflation rate during the 2000–2010 period, with its two recessions. This pattern neither benefits students nor the political standing of these institutions. Public two-year colleges reduced their average annual tuition increases in the 2000s considerably from the previous decade, but these increases still exceeded inflation by nearly two percentage points each year.

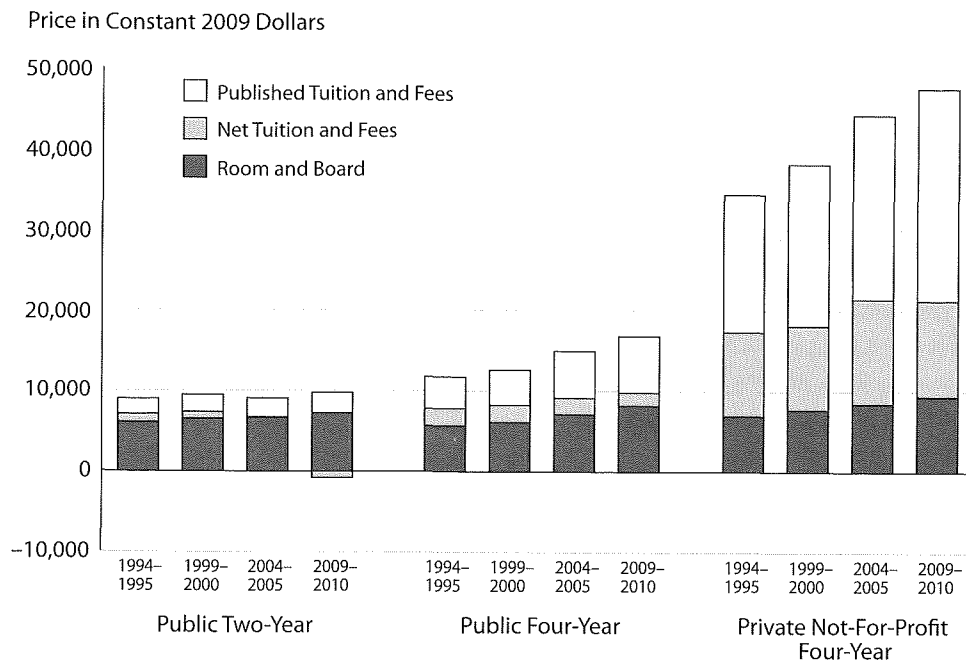
Figure 5 takes student aid into account (including grants and tax credits but not loans) to estimate net price trends facing students (middle bars in each column). According to the graph, growth in aid was sufficient that the estimated net price faced by the average student in all three sectors *decreased* in constant 2009 dollars over the past five years. Average grant aid and tax benefits for two-year college students exceeded average tuition and fees by \$480 in 2009–10. Still, parents and

**Figure 4. Average Annual Percentage Increase in Inflation-Adjusted Published Prices by Decade, 1979–1980 to 2009–2010**



Source: College Board, *Trends in College Pricing*, 2009, Figure 4, 9.

**Figure 5. Published Tuition and Fees, Net Tuition and Fees, and Room and Board in Constant 2009 Dollars, Full-Time Undergraduates, 1994–1995, 1999–2000, 2004–2005, and 2009–2010**



Source: Adapted from College Board, *Trends in College Pricing*, 2009, Figure 7, 11.

students saw the real price of college continue to climb, once textbooks, computers, and living costs are included (top bar of each column). Figure 6 is in a sense the bottom line: it depicts the upward trend in borrowing for college.

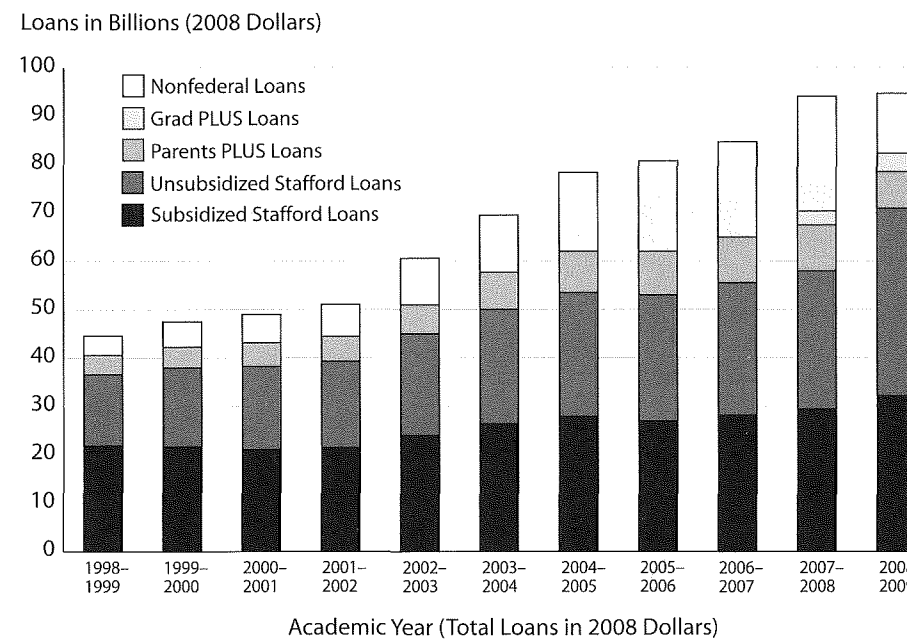
The National Center for Public Policy and Higher Education (NCPPE) relates net college costs (including student aid but not tax credits) to family incomes.<sup>36</sup> NCPPE focuses on the cost-sensitive, low- and moderate-income segments of the population. Net college costs for students attending public four-year colleges jumped from 39 percent to 55 percent of median annual family income for students in the lowest income quintile in just seven years: 1999–2000 to 2007–08.<sup>37</sup> The comparable increases for the next lowest and the middle quintiles were from 23 to 33 percent and from 18 to 25 percent of median income, respectively. The upper income quintiles showed much smaller growth. Two-year college students showed a smaller but still substantial increase in net costs in relation to income (from 40 to 49 percent of median

income for the lowest quintile, for example). Again, the lower income quintiles showed the greatest increases.

Beneficial changes in federal student aid programs lessened the cost increases for many families. Pell grants grew in numbers and dollars for several years, and the Obama Administration successfully pushed a five-year plan for substantial increases in the maximum grant.<sup>38</sup> In 2008, the federally guaranteed student loan program reduced interest and other charges to borrowers by cutting subsidies to lenders. Also, the program liberalized the caps on amounts students can borrow, after many years with little increase despite rapid tuition growth.

These changes, reinforced by the financial collapse that brought on the recession, triggered a sharp reversal in borrowing patterns (Figure 6). Private loans to students grew dramatically for about a decade, though they lacked federal backing as guarantor and the borrower protections contained in the federal program. Lenders typically packaged and sold these loans

**Figure 6. Growth of Stafford, PLUS, and Nonfederal Loans in Constant (2008) Dollars, 1998–1999 to 2008–2009**



Source: College Board, *Trends in Student Aid*, 2009, Figure 6, 9.

as securities similar to mortgages. These loans largely dried up during the financial panic and students and parents shifted sharply away from private borrowing into the federal loan programs in late 2008 and 2009. Figure 6 compares the different types of loans in 2007–08 and in 2008–09. Federally backed loans (including direct loans) essentially replaced the drastic drop—roughly 50 percent—in nonfederal loans in 2008–09, a successful, little touted federal response to the financial crisis.

State financial aid to students increased by 7.2 percent in 2007–08 to more than \$10 billion.<sup>39</sup> States awarded about \$8 billion as grants and scholarships, the vast bulk to undergraduates. They conferred about \$5.8 billion of this aid on the basis of student financial need. Undergraduate need-based aid grew by more than eight percent in 2007–08, thereby arresting the long-term erosion in this component's share of all state aid, at least temporarily. But this aid continued to be unevenly distributed; nine states accounted for more than two-thirds of the total. Several states provide little student aid. State student aid suffered serious cutbacks in a number of states in the last two recession years, though we do not yet possess systematic reports.<sup>40</sup> Current tuition trends make these cutbacks most unfortunate.

## CONCLUSION

Structural imbalances in state budgets between revenues and expenditure demands, combined with the lingering effects of the deep recession, presage a long, painful siege for states, and therefore higher education.<sup>41</sup> Employment and hence state revenue bases will not likely rebound any time soon even if economic growth exceeds recent post-recession recoveries, which is unlikely. Yet, as President Obama has said, the country must boost college going and graduation rates to contend with global competition and to advance social equity in a rapidly diversifying population.

These macro forces, which push higher education to produce more with less, lead to

talk of major restructuring.<sup>42</sup> Desperate times may bring on desperate, or at least dramatic, measures. To paraphrase the ancient Chinese proverb, the next few years may indeed be interesting times for those working in public higher education.

## NOTES

- <sup>1</sup> Kuhnhenh, 2009.
- <sup>2</sup> Aversa, 2009b; Hall, 2009.
- <sup>3</sup> Aversa, 2009a. This preliminary estimate is subject to revision.
- <sup>4</sup> Ibid; Raum, 2009.
- <sup>5</sup> "U.S. Home Prices..." 2009.
- <sup>6</sup> Hughes and Seneca, 2009, 1.
- <sup>7</sup> National Governors Association and National Association of State Budget Officers, 2009.
- <sup>8</sup> Center on Budget and Policy Priorities, 2009b. This was the largest decline ever recorded.
- <sup>9</sup> National Conference of State Legislatures, 2009b, 4.
- <sup>10</sup> Ibid, 5.
- <sup>11</sup> Ibid, 6. California alone accounted for \$38.9 billion of the national total, or 35 percent of its general fund budget. Estimates of the national aggregate budget gap differ because definitions and dates of reporting vary.
- <sup>12</sup> "State Legislators Face Even More Doom and Gloom," 2009.
- <sup>13</sup> Center on Budget and Policy Priorities, 2009b.
- <sup>14</sup> National Conference of State Legislatures, 2009c, 7. Data for all 50 states were not yet available, so the figure may increase. By October 2009, 30 states had raised taxes during calendar 2009 and others considered tax increases (CBPP, 2009a).
- <sup>15</sup> CBPP, 2009a. The same source provided the other facts cited in this paragraph.
- <sup>16</sup> CBPP, December 2009.
- <sup>17</sup> Ibid.
- <sup>18</sup> The figures are from State Higher Education Executive Officers, 2009, 18.
- <sup>19</sup> Funds for capital purposes are not included.
- <sup>20</sup> The table includes some preliminary data that are subject to revision. Data for some states were missing at the time of writing. But these qualifications do not alter the basic outlines.

<sup>21</sup> These are absolute declines in actual dollars that do not include adjustments for inflation or enrollment.

<sup>22</sup> These funds came from an "education stabilization" pot provided by the federal legislation. The bulk of these funds went to K–12 education in most states.

<sup>23</sup> See Zumeta, 2005, especially Table 2.

<sup>24</sup> Hoover and Wilson, 2009; Gonzalez, 2009.

<sup>25</sup> Kelderman, 2009b.

<sup>26</sup> Wright, 2009.

<sup>27</sup> Supiano, 2009. By contrast, other colleges just hunkered down to wait out the storm, much like in past recessions, according to a national survey. The survey had a low response rate skewed toward private institutions, though (Blumenstyk, 2009).

<sup>28</sup> National Conference of State Legislatures, 2009a. The same source provided the other examples mentioned in this and the three succeeding paragraphs.

<sup>29</sup> Koberly, 2009.

<sup>30</sup> Mortenson, 2009.

<sup>31</sup> That is, net of state funded student aid (State Higher Education Executive Officers, 2009, 18).

<sup>32</sup> See Zumeta, 2009, Figure 4. The data come from the College Board.

<sup>33</sup> Federal Pell grant funding increased substantially, a source of support for many community college students. This increase might have tempted policymakers to bump up tuition.

<sup>34</sup> Fry, 2009.

<sup>35</sup> Jaschik, 2009.

<sup>36</sup> NCPPHE doubts that most students and families view education tax credits as student aid or that the credits influence their behavior significantly.

<sup>37</sup> National Center for Public Policy and Higher Education, 2008, Table 1, 8.

<sup>38</sup> Spending on Pell grants increased 87 percent in constant 2008 dollars from 1998–99 through 2008–09 (preliminary), and by 31 percent in just the past two years (College Board, 2009b, 6). The maximum grant increased by more than \$600 in 2009–10 alone, to \$5,350 (Ibid., 4).

<sup>39</sup> The data in this paragraph came from National Association of State Student Grant and Aid Programs, 2009. States enacted student aid programs for 2007–08—the latest year for which data are available—long before the recession began.

<sup>40</sup> Kelderman, 2009a.

<sup>41</sup> Jones, 2006.

<sup>42</sup> Kelderman, 2009b; Shirvani, 2009.

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## Women Professors: New Challenges for the Next Generation

By Henry Lee Allen

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Women will inherit the mandate for improving and strengthening academic careers, as they become the leaders of the next academic generation. In fact, women are already challenging the norms traditionally associated with academic work.<sup>1</sup> They are demanding family friendly, salutary, and humane policies on workload and productivity—policies needed to attract and retain the best talent as the pool of academics becomes more diverse. More changes are ahead, as this demographic revolution takes hold.

This essay adds to the few existing empirical studies of the fortunes of women academics. It explores the changing demographics of the scientific disciplines at research universities, and examines the social and cultural terrain currently circumscribing the careers of women faculty. The essay exemplifies ways that research sponsored by faculty unions can promote the professionalism of the next generation of women leaders.

### THE DEMOGRAPHICS

Table 1 shows the increased representation of women faculty members in most scientific disciplines between 1995 and 2003. The proportion of women full professors increased in all fields. The increase in the health sciences stands apart: from 35.1 to 59.0 percent. Physics showed a substantial percentage increase (4.3 to 7.6 percent), but the absolute numbers remained low. The representation of associate professors also increased, save for a slight reduction in the health sciences (from 65.6 to 59.1 percent). Especially notable is the increased presence of women in engineering (4.8 to 11.7 percent) and physics (9.5 to 19.5 percent). The proportion of women among assistant professors increased in all fields except physics (from 25.1 to 24.1 percent) and the health sciences (from 69.1 to 66.5 percent).

Women faculty remained well represented at all ranks in the health sciences in 2003 (assistant = 66.5, associate = 59.1, full = 59.0), despite small decreases from 1995. Biology also attracted