

North Carolina's Higher Education System

Success or Failure?

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Center for College Affordability and Productivity

The Center for College Affordability and Productivity (CCAP) is a non-profit research center based in Washington, DC, that is dedicated to research on the issues of rising costs and stagnant efficiency in higher education, with a special emphasis on developing market-based solutions.

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Introduction

North Carolina has long prided itself on what many perceive to be one of the finest systems of higher education in the country. Aside from having a number of nationally recognized private schools of distinction (e.g., Duke, Wake Forest, Davidson), the state has invested aggressively with public funds. The Research Triangle is considered one of the nation's leading success stories for integrating higher education with private sector entrepreneurship and technology. The University of North Carolina (UNC) at Chapel Hill is considered one of the nation's premier public universities in every ranking of schools.

State government appropriations for higher education in general have risen over time, even after adjusting for both considerable amounts of inflation and robust population growth. Politicians in both political parties, but perhaps most notably former governor James Hunt, argued that universities were an engine for economic growth, and also the primary way in the modern era in which ordinary citizens—even those disadvantaged by low income, minority ethnic status, or the like—could achieve the American dream. Higher appropriations were successfully promoted on the grounds that this will increase the access of students to college and enhance the state's economic condition. It is a point of pride among some politicians that North Carolina in modern times has tended to outspend peer states and the nation as a whole on higher education.

However, our objective analysis of the data suggests that another interpretation of higher education public policy is possible. Despite the massive increases in taxpayer support, the state lags behind both the national average and most neighboring states in the proportion of adults with college degrees. Tuition costs have soared—even more than has typically been the case nationally. A huge and growing portion of resources have been devoted to noninstructional activities. A lack of transparency prevents some of the most elementary questions from being answered. For example, how many hours per week is the typical professor in the classroom? Or, more fundamentally, what have students graduating from a North Carolina university gained during their years in attendance? Do they have a demonstrably larger body of useful knowledge and skills? Has their ability to think critically improved? Have their values and personal characteristics improved—are they more honest, harder working, more tolerant of others, etc.? In general, both the colleges and general public are clueless as to the answers to these questions. Thus, one could say that the higher education system lacks transparency and accountability, and is increasingly costly and inefficient. Productivity is hard to measure without good measures of outcomes, but it is more likely falling rather than rising in North Carolina higher education.¹

This study is not a comprehensive blueprint for reform in the system of higher education in North Carolina. Its purpose is to present factual evidence suggesting that the system of universities is deserving of greater public scrutiny. The evidence also shows areas where reform is needed the most—cost containment, for example. And we will make some suggestions of areas where cost containment might legitimately occur. And while the system has many defects, we are the first to acknowledge that it is possible to have a wonderful collegiate experience in North Carolina and that some very fine research is conducted in the state that has had positive social benefits. Yet the issue is: can North Carolina use its resources in a better way, one that will improve the quality and affordability of its higher educational services?

The Rationale for State Support: Is It Valid?

Before getting into the specifics of higher education in North Carolina, it is worth reviewing: Why do we give special treatment to colleges and universities? Why do we heavily subsidize the University of North Carolina at Chapel Hill, while we tax others providing goods and services to people, such as furniture manufacturers, car dealers, and motels? Why are universities given special privileges and resources in our society?

The two major cases for public subsidy are the equality of opportunity and externality arguments. The equality of opportunity argument suggests that universities are potent vehicles for promoting the egalitarian ideal that has permeated American society since its beginning. Any person, even from the humblest beginnings, can rise to the top in our meritocracy-driven society. College degrees have become a near prerequisite for economic success. Yet, college is costly. Public subsidies enable poor individuals the chance to attend college, an opportunity they otherwise would not have.

It is also argued that education has important positive spillover effects. Supposedly, society will function better and make better collective decisions if the bulk of the populace is highly educated, because we will understand our common culture and heritage and know about those things that bind us together as Americans. Education promotes national unity and identity, or so it is argued. Higher education leads to improved patterns of human behavior—college graduates commit fewer crimes, smoke less, and live longer. They give more to society (through taxes and philanthropy) than they take from it.

Above all, it is argued that there are positive economic spillover effects from supporting higher education. These spillover effects are hypothesized to result in higher productivity. Higher spending on schools supposedly means more college graduates. College graduates inspire their non-college educated coworkers, often teaching them things on the job and stimulating productivity. By educating person A, we indirectly stimulate the output and incomes of persons B, C, and D.

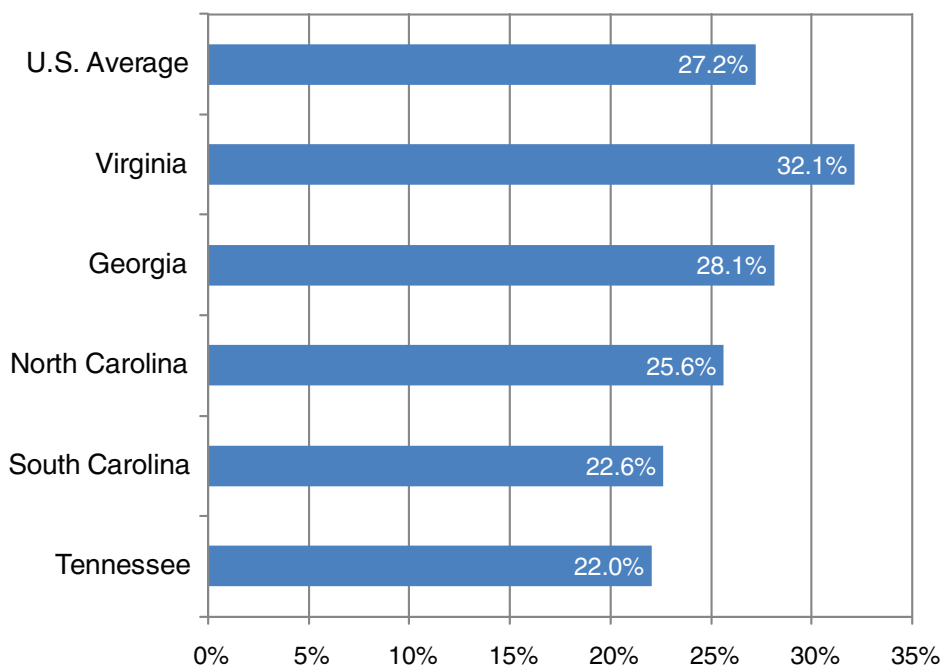
All of this is interesting theorizing, but there are problems with the analysis. The growth nationally in higher education public funding for a long time did lead, as predicted, to vastly more students and graduates from universities. Yet the data show a sharp slowing in the rate of growth in these factors—despite continued rising funding. The United States spends more on colleges than any other nation (both absolutely and as a percent of national output), but we have fallen behind several other nations in the proportion of adults with college degrees, and trends indicate that we will fall further in coming years. The data for North Carolina are particularly disturbing, as figure 1 shows.

While state higher education appropriations as a proportion of personal income are well above the national average, North Carolina has a distinctly *below* average proportion of adults with college degrees, trailing not only the national average but also the performance of some neighboring states.

Moreover, the data suggest that the best of North Carolina's schools are largely "gated communities" with low proportions of students from families at or only modestly above the poverty line. There are 130 schools on the *U.S. News & World Report* rankings list of top American national universities, and 125 schools on their list of top liberal arts colleges.² Of these 255 colleges, five are in North Carolina: two public (UNC Chapel Hill and North Carolina State University), and three private (Duke University, Wake Forest University, and Davidson College). None of the three private schools has as much as 10 percent of the student body receiving Pell Grants—making them among the economically least inclusive schools in the nation. Interestingly, however, despite North Carolina being a below average income state with relatively high poverty rates, the proportion of Pell Grant recipients at Chapel Hill (14 percent) or NC State (16 percent) is well below the national average of all universities. Chapel Hill has a smaller proportion of Pell Grant recipients than such respected flagship universities in wealthier states as the University of Illinois, University of Minnesota, or the University of Texas at Austin. For that matter, it has a lower proportion than at least one Ivy League university (Columbia).

The Carolina Covenant at UNC Chapel Hill is a new program that should theoretically improve these numbers. It guarantees that accepted low income students will graduate with no debt provided they work ten to twelve hours a week in the federal work study program. One key question is whether schools will

FIGURE 1
 PERCENTAGE OF EACH STATE'S ADULT POPULATION WITH A BACHELOR'S DEGREE, 2006



Source: U.S. Census Bureau. CCAP calculations.

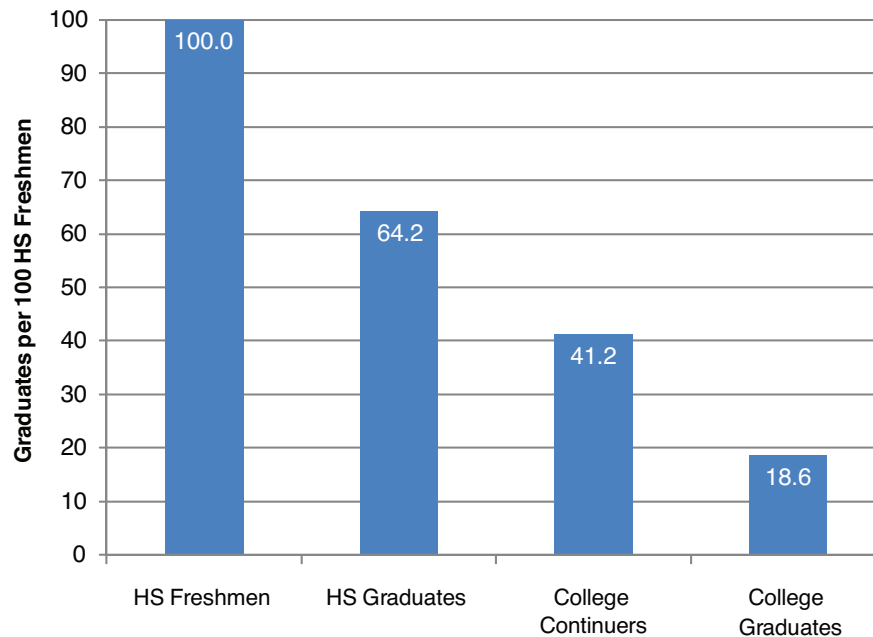
accept a large enough number of low income students for this to have much impact. However, it is certainly a step in the right direction as it removes a constraint facing many low income students.

While it is true that there are colleges with large numbers of Pell Grant recipients (e.g., North Carolina Agricultural and Technological State University [North Carolina A&T] with 49 percent, UNC at Greensboro with 30 percent, and East Carolina at 28 percent), the evidence suggests that the schools in the state on which the most resources are showered are rather exclusionary, with below average participation by students from low income background, raising the possibility that public funding of higher education in North Carolina subtracts rather than adds from equality of economic opportunity.

This study shows some of the reasons why this is so. For example, huge attrition rates decrease the proportion of entering North Carolina high school students who have a college degree a decade later. Figure 2 shows that for every 100 entering North Carolina high school freshmen, just over eighteen will have graduated college within a decade.

There is evidence that some of the incremental funds that North Carolina gives public universities through higher appropriations ends up in higher salaries for key staff, especially faculty. There are huge variations in spending per student between the public schools in the state, with little evidence that the high spending schools offer a significantly higher quality educational service for their students. In short, the arguments for public subsidies are undercut by the realities of how resources are actually allocated.

FIGURE 2
COLLEGE GRADUATES WITHIN 10 YEARS OF BEGINNING HIGH SCHOOL



Sources: Postsecondary Education Opportunity, National Center for Education Statistics (NCES), Integrated Postsecondary Education Data System (IPEDS). CCAP calculations.

Moreover, even the externality arguments are suspect after close empirical scrutiny. It is empirically difficult to measure such things as “promoting national cohesiveness” or find evidence showing that college students have an unusually good appreciation for our civic institutions. Indeed, the one study we know that nationally examines this issue suggests that college students do very poorly on a standardized test of basic issues in American history, political institutions, and economics—and, in general, seniors in colleges do little better than freshmen. The study conducted by the Intercollegiate Studies Institute measured the value added of attending college by measuring knowledge difference between freshmen and seniors at fifty colleges. The areas tested were: American history, American political thought, America and the world, and the market economy. Freshmen averaged a score of 50.4 percent while seniors averaged 54.2 percent, resulting in a value added gain of just 3.8 percentage points. Two North Carolina schools were included in the study, UNC and Duke. UNC seniors averaged 57.68 percent, demonstrating a 4.42 percentage point gain in knowledge over their freshmen counterparts; while Duke seniors averaged 63.41 percent, demonstrating a 2.25 percentage point *loss* in value between the freshmen and senior years.³ These admittedly very limited findings do not inspire confidence that public universities are contributing importantly to the civic literacy of young North Carolinians.

If there are positive economic spillover effects on expending resources on universities, we should see, perhaps after a lag of several years, a positive correlation between state spending on higher education and economic growth, yet in reality we do not. Indeed, there is pretty good evidence the opposite is the case:

TABLE 1
ECONOMIC GROWTH REGRESSION RESULTS
 Dependant Variable: *Growth in Real Personal Income*

	5-Year Growth Obs: 1400	10-Year Growth Obs: 1200	15-Year Growth Obs: 950
Age of State	0.006 ^a (14.70)	0.008 ^a (13.65)	0.007 ^a (11.61)
Real Personal Income (t-n)	-0.00002 ^a (-20.30)	-0.00003 ^a (-18.65)	-0.00003 ^v (-27.19)
n-Year Growth in Unions	-0.04 ^a (-7.10)	-0.07 ^a (-8.75)	-0.00002 (-0.003)
n-Year Growth in population	1.31 ^a (29.36)	1.34 ^a (37.62)	1.20 ^a (37.01)
n-Year Growth in Tax Burden	-0.09 ^a (-3.04)	-0.07 ^a (-4.03)	-0.14 ^a (-9.90)
Real per Capita Appropriation on Higher Education	-0.0003 ^a (-9.74)	-0.0002 ^a (-4.04)	-0.00006 (-1.31)
Real per Capita Non Higher Education Expenditures	-0.000007 ^b (-2.04)	0.000013 ^b (2.31)	0.000009 ^b (2.18)
Percentage of Population 25+ with BA or higher	0.005 ^a (7.38)	0.003 ^b (2.49)	0.0039 ^a (4.15)
Weighted Adjusted R ²	0.72	0.89	0.96
F-Stat Redundant Fixed Effects	12.14 (0.00) ^c	11.68 (0.00) ^c	23.38 (0.00) ^c

Notes: Values in parentheses are t-statistics.

a) and b) denote statistically significant at the 1 and 5 percent levels, respectively.

c) denotes values in parentheses are p-values.

higher spending on universities is negatively correlated with growth. For those readers interested in the intricate statistical results, one such regression model is included (see table 1).⁴ In two of three regressions, there is a statistically significant negative correlation between spending on universities and economic growth some years later, despite the fact that states with a high proportion of college graduates tend to have high growth rates.

The complicated econometric results are confirmed by individual case studies. Take the states in table 2 for example, which compares the appropriations for higher education and the economic growth of similar states. Over the past twenty-five years New Hampshire has spent on average much less on higher education (relative to income or population) than Vermont, but has experienced more robust growth rates. The same is true of South Dakota and North Dakota, and Tennessee and Kentucky.

Other preliminary work we have done raises doubts about the notion that research appropriations positively impact growth. For example, there is actually a negative correlation between federal appropriations to universities (mostly for research) and economic growth.

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TABLE 2
ECONOMIC GROWTH AND APPROPRIATIONS, STATE COMPARISONS

State	Average Appropriations ^a	Economic Growth ^b
New Hampshire	\$2.67	62.1%
Vermont	4.68	60.3
South Dakota	7.18	70.6
North Dakota	12.22	66.7
Tennessee	7.16	58.1
Kentucky	9.57	46.1

Notes: a=Average appropriations defined as average state appropriations per \$1,000 of personal income, 1980–2005.

b=Economic growth defined as the growth in real per capita personal income, 1980–2005.

Sources: Bureau of Economic Analysis, Grapevine Data System at Illinois State University. CCAP calculations.

North Carolinians might scoff at these findings. After all, the Tar Heel State is growing robustly, and it spends a lot on higher education. The Research Triangle has brought in lots of new businesses and high paying jobs, most closely tied to higher education. Yet one can argue that, if anything, growth would have been higher had higher education expenditures been used more efficiently. North Carolina is not a university-intensive state if judged by the most important indicator: the proportion of adults who have graduated. In fact, North Carolina falls more than a full percentage point and a half *below* the national average in this regard.

In short, there are considerable reasons to question the very first principles on which university public support is based. The assumption that if we spend a lot on universities we will have a more prosperous population is questionable. It is even questionable how much students learn in college. And far from serving as a bastion of promoting economic equality, our public universities may be promoting the opposite—a growing elitist society. Our top universities are part of a gated community largely open only to those with considerable resources.

TABLE 3
HIGHER EDUCATION STATISTICS FOR NORTH CAROLINA AND NEIGHBORING STATES

State	Percentage of 18–24 Population Enrolled (2005)	Average Tuition 4-Year Public (2005)	Average Tuition 4-Year Private (2005)	Average Loan Debt of Graduates (2005)	State Appropriations per Capita (2005)	Economic Growth Rate (1980–2005)
North Carolina	39.9%	\$3,631	\$19,166	\$17,760	\$302.71	59.7%
Tennessee	37.1	4,765	16,552	19,549	182.57	58.1
Virginia	38.4	5,912	17,185	18,039	196.76	56.2
South Carolina	36.1	7,337	16,168	19,697	156.85	53.7
Georgia	32.7	3,632	18,120	17,753	209.80	56.3
U.S. Average	40.6	5,351	19,292	19,200	212.96	43.8

Sources: IPEDS, *Digest of Education Statistics*, Census Bureau, Project on Student Debt, Grapevine Data System at Illinois State University, Bureau of Economic Analysis. CCAP calculations.

TABLE 4
HIGHER EDUCATION STATISTICS FOR THE LARGEST NORTH CAROLINA INSTITUTIONS

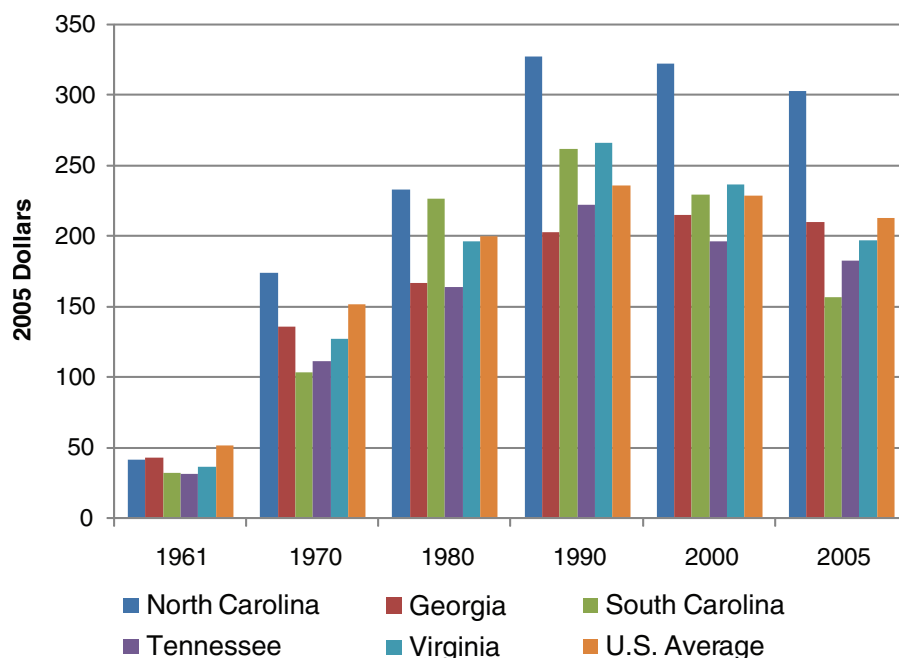
Institution	FTE Undergraduate Enrollment (2005)	Average Tuition (2005)	Percent Increase in Tuition (2000–2005)	Graduation Rate (2005) ^a
Public Institutions				
Appalachian State University	12,357	\$3,280	65%	64.0%
East Carolina University	16,464	3,627	60.7	54.4
North Carolina A&T State University	9,149	3,114	60.6	39.5
North Carolina State University-Raleigh	20,406	4,338	54.2	70.6
University of North Carolina-Chapel Hill	16,195	4,613	70.2	83.8
University of North Carolina-Charlotte	14,612	3,549	66.3	48.7
University of North Carolina-Greensboro	11,186	3,467	50.2	51.0
University of North Carolina-Wilmington	10,046	3,695	56.6	63.5
Private Institutions				
Campbell University Inc	3,736	\$15,746	36.4%	56.8%
Davidson College	1,683	28,667	24.1	86.6
Duke University	6,491	32,409	26.4	93.4
Elon University	4,639	18,949	37.5	76.3
Gardner-Webb University	2,285	16,065	37.8	43.8
Guilford College	2,395	21,640	28.7	N/A
High Point University	2,391	16,760	34.7	45.9
Mount Olive College	2,241	11,800	28.1	23.3
Shaw University	2,377	9,438	27	27.8
Wake Forest University	4,180	30,210	34.8	88.3

Note: a=graduation rate is six-year graduation rate.
Source: IPEDS. CCAP calculations.

The basic statistics shown in tables 3 and 4 will help put the rest of the report in context, though we will review many of them in greater detail in later sections. From table 3, a couple of things stand out. First, North Carolina devotes far more public money to higher education than its neighbors or the average of the nation. This greater spending on higher education does not result in a much greater percentage of the college age population enrolled, which remains below the national average. The average student debt at graduation is lower than in most neighboring states, most likely due to the below average tuition at public schools. While the North Carolina economy grew the most out of any of its neighbors during the last two and a half decades, growth rates were similar for states that spent vastly less on higher education.

The statistics reported for the largest public and private schools in table 4 also reveal a number of points of interest. Public schools tend to be larger and charge less tuition than private schools, though there is considerable variability among these variables even within categories. There does not seem to be too much difference in graduation rates among types of school (public vs. private), but there is enormous variation in this statistic within each category. For example, among private schools, the graduation rates range from 23.3 percent at Mount Olive to 93 percent at Duke. Similarly, at North Carolina A&T the graduation rate is less than one-half of the rate at UNC Chapel Hill. Lastly, although tuition is much lower at public schools compared to private schools, the rate of increase is much faster at public schools.

FIGURE 3
STATE APPROPRIATIONS PER CAPITA DEVOTED TO HIGHER EDUCATION,
NORTH CAROLINA & PEER STATES, 1961–2005



Source: Grapevine Data System at Illinois State University. CCAP calculations.

Background: North Carolina Higher Education Facts and Figures

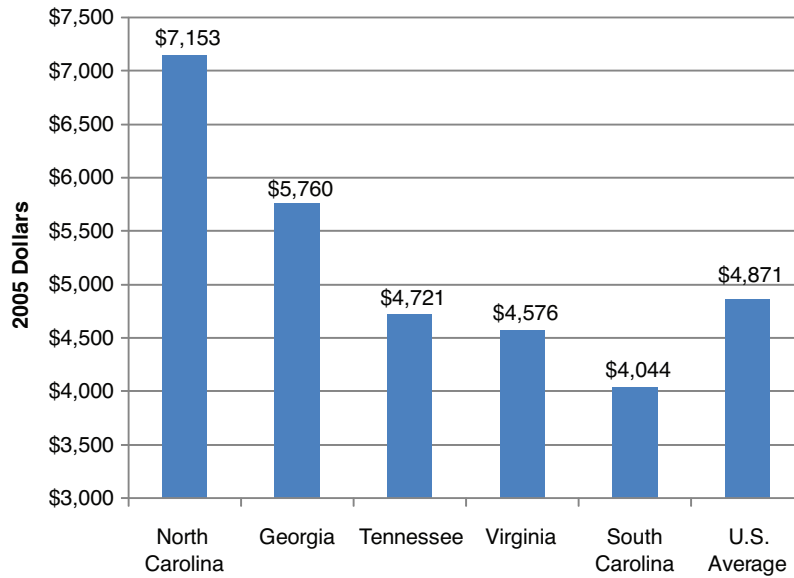
State Appropriations for Higher Education

In regards to higher education, North Carolina is an unusually high spending state by any measure. Figure 3 demonstrates that historically the Tar Heel State has vastly outspent every neighboring state as well as the national average in per capita spending.

The same holds true when we adjust the spending for the number of students in the state. The most common method for doing so is to construct a number referred to as full-time equivalent (FTE) students. This number accounts for the fact that many students attend school only part time. As figure 4 indicates, the same holds true for spending per FTE student. In 2005 North Carolina spent \$7,153 per FTE student, far above the national average of \$4,871. North Carolina spends \$3,109 more than South Carolina, \$2,577 more than Virginia, and \$1,393 more than Georgia—the state that spends the second most of its neighbors.

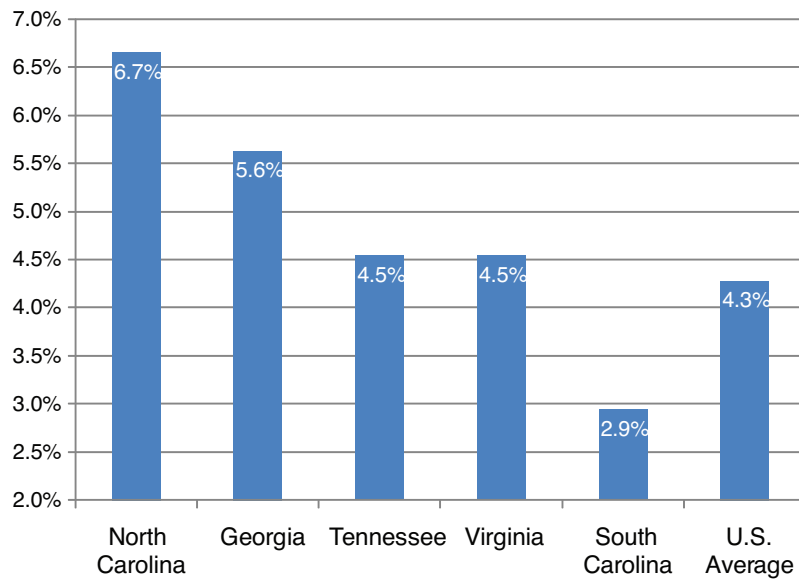
Nationally in 2005, higher education appropriations accounted for 4.3 percent of total state and local expenditures; in North Carolina the figure was 6.7 percent, greatly outpacing both the national average and all neighboring states. Figure 5 illustrates that North Carolina's overall state budget is heavily invested in higher education.

FIGURE 4
STATE APPROPRIATIONS PER FTE STUDENT AT ALL INSTITUTIONS, 2005



Sources: Grapevine Data System at Illinois State University, *Digest of Education Statistics* table 196. CCAP calculations.

FIGURE 5
PERCENTAGE OF TOTAL STATE AND LOCAL APPROPRIATIONS DEVOTED TO HIGHER EDUCATION, NORTH CAROLINA & PEER STATES, 2005



Sources: U.S. Census Bureau, Grapevine Data System at Illinois State University. CCAP calculations.

TABLE 5
APPROPRIATIONS PER \$1,000 PERSONAL INCOME REGRESSION RESULTS
 Dependent Variable: APPROPRIATIONS PER \$1,000 OF PERSONAL INCOME
 Method: Least Squares
 Included observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	14.07472	1.587478	8.866084	0.0000
% Voting Kerry in 2004	-4.476267	3.427777	-1.305880	0.1984
Personal Income per Capita	-0.000155	5.27E-05	-2.949922	0.0051
Percent Private Enrollment	-4.281367	2.199477	-1.946538	0.0580
State & Local Expenditures per Capita	0.000556	0.000155	3.594272	0.0008
Average Public Tuition	-0.000378	0.000171	-2.204292	0.0328
R-squared	0.643492	Mean dependent var		6.828972
Adjusted R-squared	0.602980	S.D. dependent var		2.300084
S.E. of regression	1.449273	Akaike info criterion		3.692167
Sum squared resid	92.41720	Schwarz criterion		3.921610
Log likelihood	-86.30418	F-statistic		15.88388

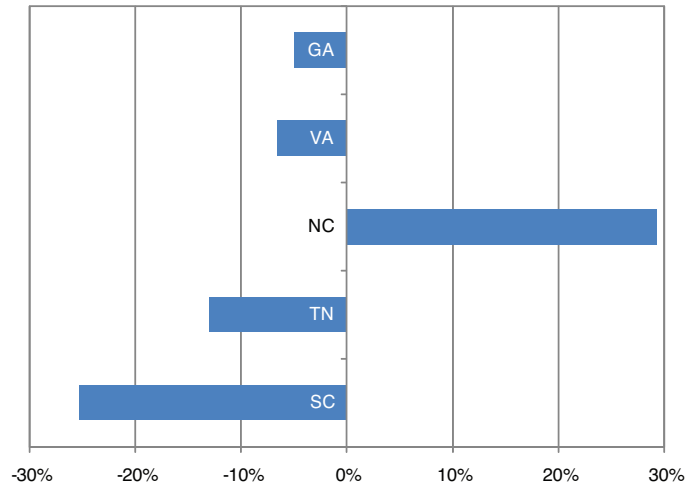
Sources: See text.

One possible explanation for the relatively high investment in higher education in North Carolina is differences in average incomes. It could be that as states get richer, they devote a proportionally smaller (or greater) share of resources to higher education. To test this, we developed a statistical model (using multiple regression analysis) to try to explain interstate variations in state higher education appropriations as a percentage of personal income. Table 5 offers a detailed look at these regression results.⁵ Based on variables in the model, estimates are derived for each state as to the predicted level of state appropriations. It is possible by looking at the residual values (deviation of appropriations from that predicted) to see if the state tends to have a propensity to spend more or less than what national behavioral norms predict. North Carolina's residual reaffirms the notion that it is an unusually high spending state, meaning that its higher levels of spending cannot be explained simply by differences in income. In fact, the state spends 29 percent more per \$1,000 of personal income than we would expect based on all the independent variables. Only two states in the entire nation, New Mexico and Louisiana, had more than predicted spending to a greater extent than North Carolina. Figure 6 illustrates the stark differences among North Carolina and neighboring states which all spend considerably *less* than predicted.

Enrollment Trends

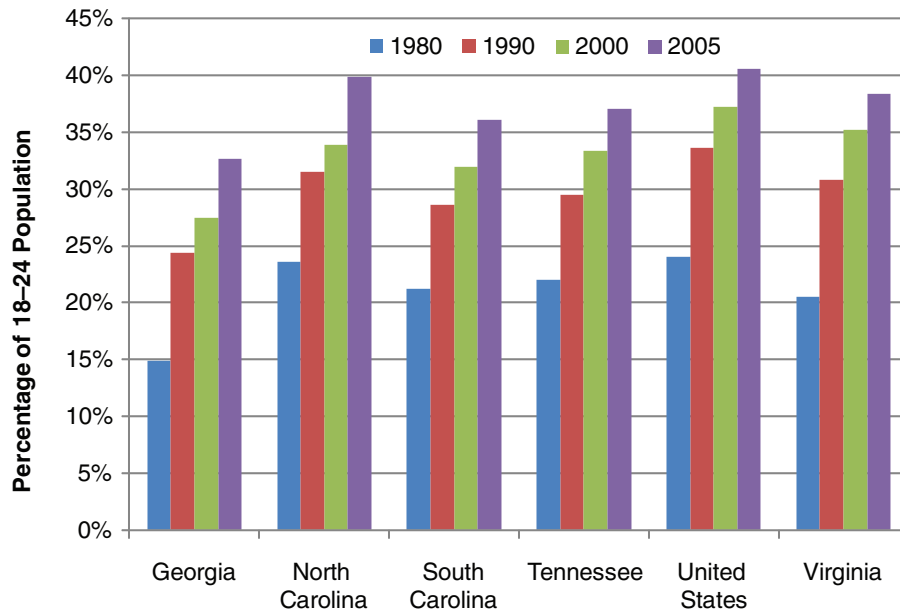
The vastly larger amounts that North Carolina spends on higher education no doubt contribute to the fact that it enrolls more of its 18–24 population than all of its neighbors. However, the state's proportion of the 18–24 population enrolled in higher education is below the national average even though the state spends far above the national average per capita (see figure 7). Furthermore, the growth in the percentage enrolled from 1980 to 2005 in North Carolina lags behind that of Virginia and Georgia, as well as the national average.

FIGURE 6
**PERCENT DIFFERENCE OF PREDICTED AND ACTUAL APPROPRIATIONS
 PER \$1,000 PERSONAL INCOME BASED ON REGRESSION MODELING**



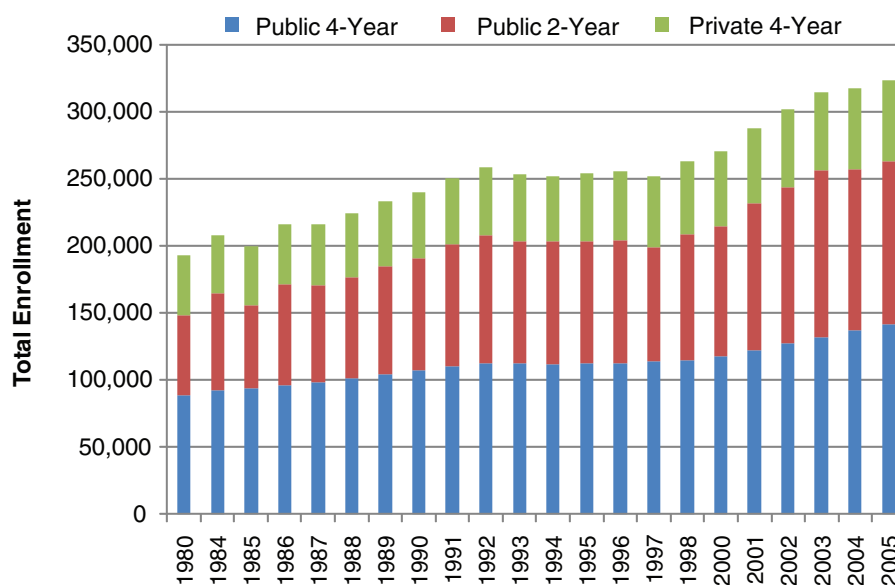
Source: Residual results from table 5 regression equation. For regression data see endnote 5.
 Note: CCAP calculations.

FIGURE 7
**NORTH CAROLINA AND NEIGHBORING STATES:
 UNDERGRADUATE FTE ENROLLMENT PER 18-24 POPULATION**



Sources: IPEDS, U.S. Census Bureau. CCAP calculations.

FIGURE 8
 NORTH CAROLINA FTE UNDERGRADUATE ENROLLMENT BY CONTROL
 AND LEVEL OF INSTITUTION, 1980–2005



Source: IPEDS. CCAP calculations.

Enrollment in North Carolina institutions of higher education has increased by over 66 percent over the last two and a half decades (see figure 8)⁶. In absolute terms the biggest increases came from public two-year schools, whose enrollment jumped from 60,000 in the 1980–1981 school year, to over 120,000 in the 2005–2006 school year. Enrollment at public four-year schools increased by slightly less than 60,000 during this same time period: fewer than 90,000 were enrolled in 1980–1981, and enrollment reached almost 142,000 in 2005–2006. While enrollment jumped by over 100 percent in public two-year schools and by 60 percent in public four-year schools, enrollment increased by only 37 percent at private four-year schools.

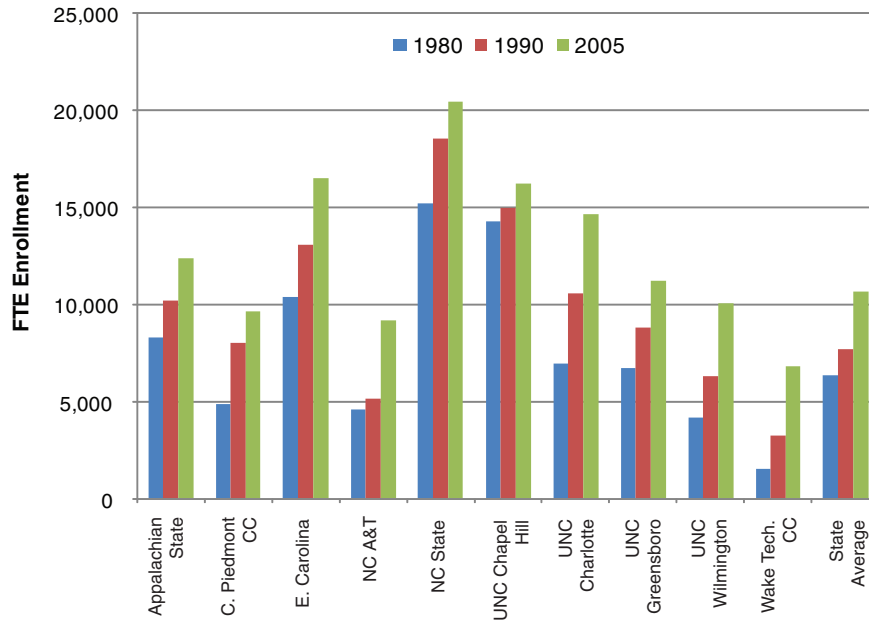
There is, however, considerable variability when looking at the growth of individual schools. For example, UNC Charlotte, UNC Wilmington, and North Carolina A&T have all roughly doubled in size in the last twenty-five years (see figures 9 and 10).

Tuition Trends

There is growing concern over the costs of higher education. One of the main sources of such concern is exploding tuition charges. Figure 11 shows that from 1985 to 2005, tuition at North Carolina 4-year public schools grew 45% more than the national average and 135% more than the state per capita income. At 4-year North Carolina private schools tuition grew 83% more than the national average tuition at 4-year private schools and 123% more than the state per capita income.

FIGURE 9

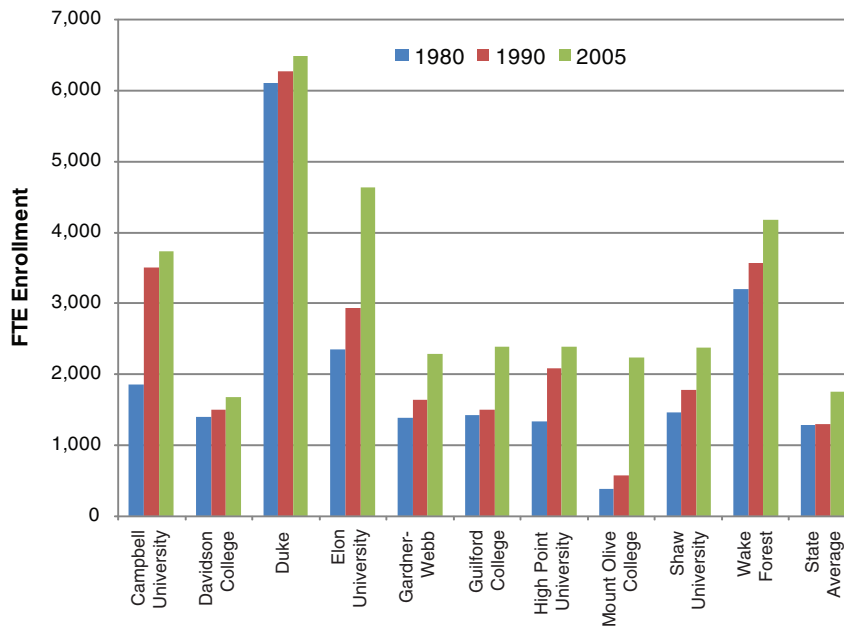
NORTH CAROLINA: FTE UNDERGRADUATE ENROLLMENT FOR THE 10 LARGEST PUBLIC INSTITUTIONS



Source: IPEDS. CCAP calculations.

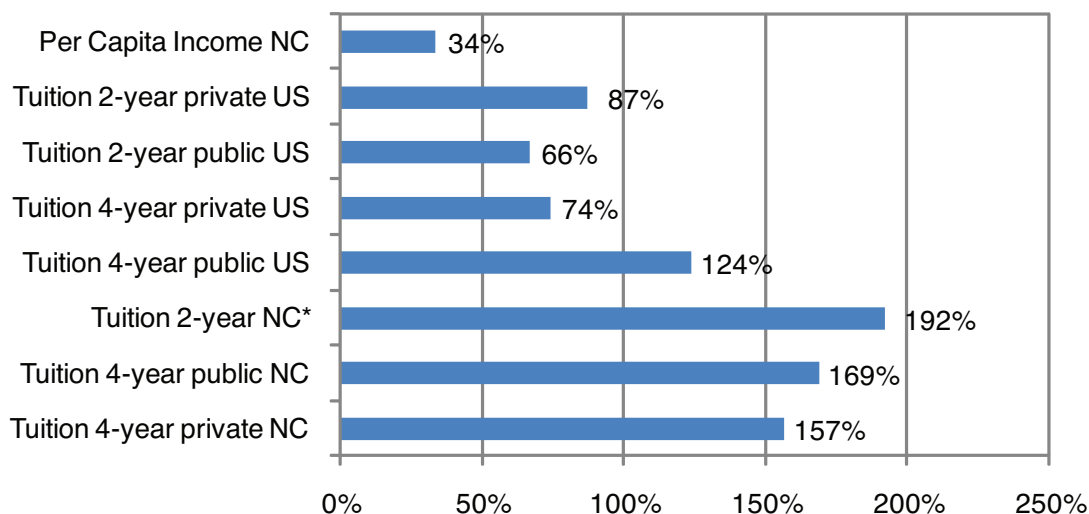
FIGURE 10

NORTH CAROLINA: FTE UNDERGRADUATE ENROLLMENT FOR SELECTED PRIVATE INSTITUTIONS



Source: IPEDS. CCAP calculations.

FIGURE 11
REAL TUITION AND PERSONAL INCOME GROWTH, 1985–2005



Sources: Bureau of Labor Statistics, *Digest of Education Statistics*, IPEDS. CCAP calculations.
Note: *=Tuition growth at 2-year NC schools is from 1989–2005,

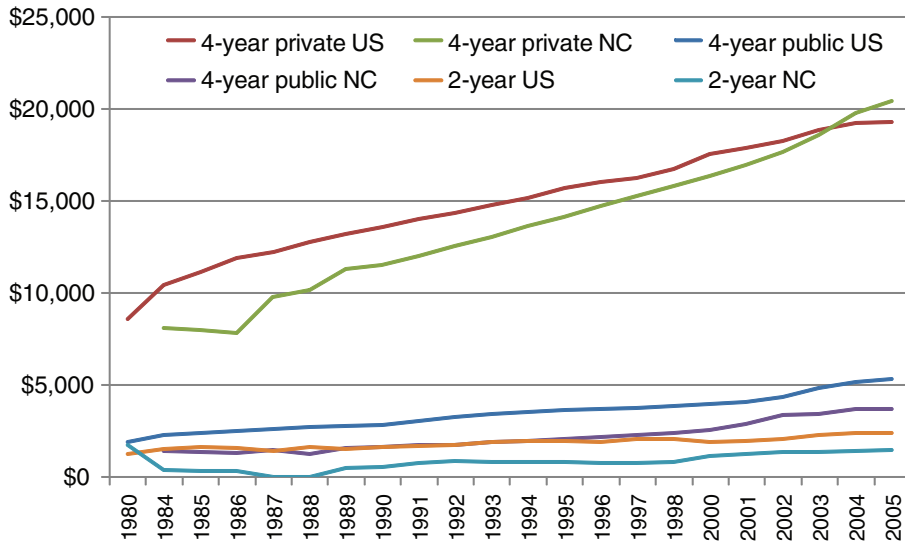
What has Happened to the Costs of Attending College and Why?

The costs of attending an institution of higher education have been exploding across the nation, and North Carolina is no exception. Figure 12 shows the average real (inflation adjusted) tuition and required fees for in state students by year and the level of the school.⁷ From 1984 to 2005, the average cost of attending a four-year private school increased from \$8,100 to \$20,459 (in 2005 dollars). Over the same time span, tuition at four-year public schools increased from \$1,419 to \$3,680. At two-year schools, tuition increased from \$353 to \$1,435.

The ability of North Carolinians to pay for schooling, as measured by the state's per capita income, has not kept up with the increases in tuition, as shown in figure 13. In fact, tuition at four-year schools has doubled as a percentage of per capita income, meaning that the typical resident would need to pay over one-quarter of his or her income per year in tuition. While tuition has increased at two-year schools as well, the cost is still under 5 percent of the state per capita income.

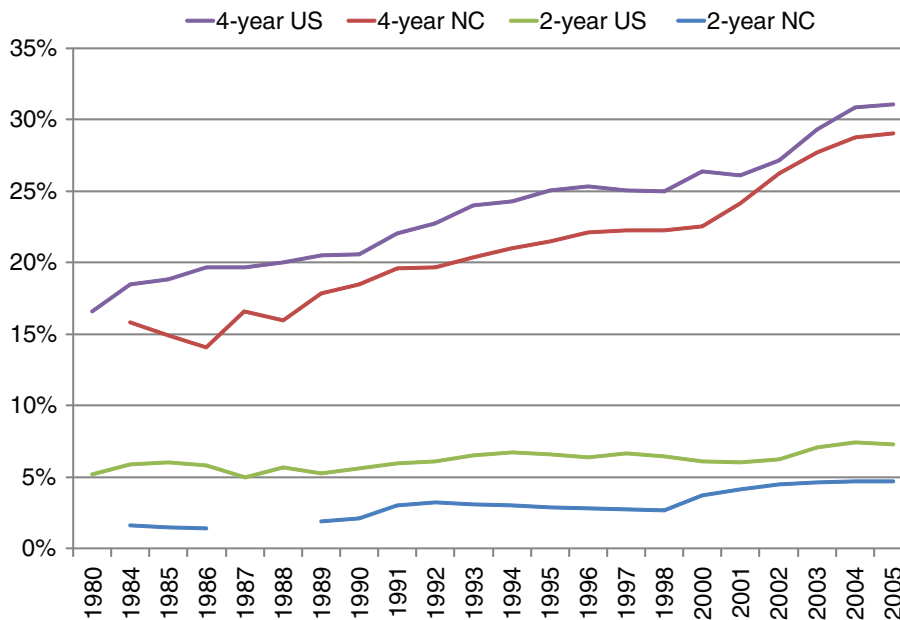
Some people will argue that the financial burden on students and their families is not nearly as bad as these figures suggest, because schools will often provide scholarships and other discounts to students. This is a valid point, but schools are reluctant to release information about the actual average tuition and fees they charge, which is perhaps a sign that their aid packages are not offsetting the tuition increases. Moreover, when students apply to schools, they do not know if they are going to receive any aid at all, or how much. Thus the "sticker price" (stated tuition fee) is potentially a very important factor in deciding where or whether to attend college.

FIGURE 12
AVERAGE TUITION AND FEES, REAL (2005 \$) FTE WEIGHTED



Sources: Bureau of Labor Statistics, *Digest of Education Statistics*, IPEDS. CCAP calculations.

FIGURE 13
AVERAGE TUITION AND FEES BY SCHOOL TYPE, PERCENTAGE OF PER CAPITA INCOME, FTE WEIGHTED, 1980–2005



Sources: Bureau of Labor Statistics, *Digest of Education Statistics*, IPEDS, Bureau of Economic Analysis. CCAP calculations.

In spite of a lack of transparency in the provision of data (not unique to North Carolina schools), we can estimate what we will call the net tuition and required fees. We have constructed two versions of net tuition and fees (for brevity we will just refer to it as net tuition, though it includes required fees). Unfortunately, the federal data source used (the Integrated Postsecondary Education Data System, or IPEDS) only allows for these “net tuitions” to be calculated from 2000 to 2004.

The first net tuition is the figure for schools. It is the most accurate estimate of the true average tuition revenue per student for the school. It is found by subtracting the average amount of institutional aid (scholarships and fellowships) provided by the school from the published tuition (sticker price).

It is important to note that this figure is different from the net tuition *for students*. Aside from knowing how much money schools get per student, we also want to know what students actually pay. To find this figure, what we will refer to as “net tuition for students,” we must also account for state and federal aid. Thus net tuition for students is equal to published tuition minus federal, state, local, and institutional grants. Student loans are not subtracted because students are required to pay them back, something that is not typically required of grants. Net tuition for students is the best estimate of the actual financial burden for students.

There are factors that would tend to bias the figures in either direction. For example, the U.S. Department of Education database does not include private scholarships that the schools do not know about. Thus, we would tend to overestimate the financial burden of students. On the other hand, much of the grant money that is awarded goes toward paying for things other than tuition, many of them valid expenses such as books and transportation costs. This would indicate that we tend to underestimate the actual financial burden on students. While this methodology is obviously not perfect, we believe it is the most accurate estimate possible in the absence of greater disclosure by schools.

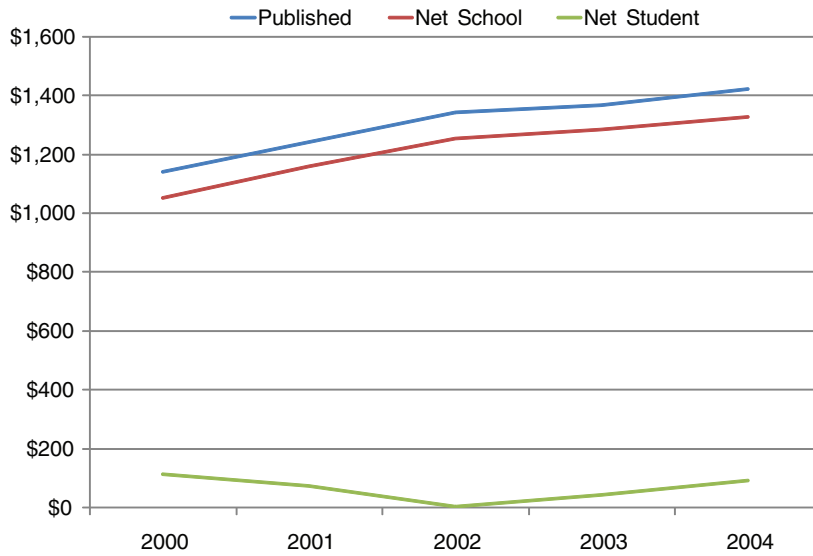
On balance, these numbers almost certainly underestimate both net school and net student tuition. The reason is that these figures do not include room and board charges, even though much of the financial aid that gets awarded goes toward paying for these types of expenses. Ideally, we would be able to separate the aid that goes toward tuition charges and the aid that goes toward everything else; but unfortunately, the available data does not break down financial aid by how it is actually spent. Thus we are making the assumption that all aid is spent on tuition, which will almost certainly result in underestimates of the net school and net student values, since we know that some financial aid is really spent on other things such as room and board or textbooks.

Figures 14, 15, and 16 show published, net school, and net student tuition and required fees in inflation adjusted dollars at two-year, four-year public, and four-year private North Carolina schools, respectively.

At two-year North Carolina schools (see figure 14), published tuition and the net school tuition (tuition revenue per student) track each other very closely, and have both risen by about \$250 from 2000 to 2004. A very different story emerges when we look at what students themselves pay (net student). This amount is virtually the same in 2004 as it was in 2000 (though it did decline from 2000 to 2002 and increased from 2002 to 2004). Not only is it the same, but it is very small, meaning that that typical student at a two-year North Carolina school only pays around \$100 in tuition thanks to generous federal and state grants.⁸

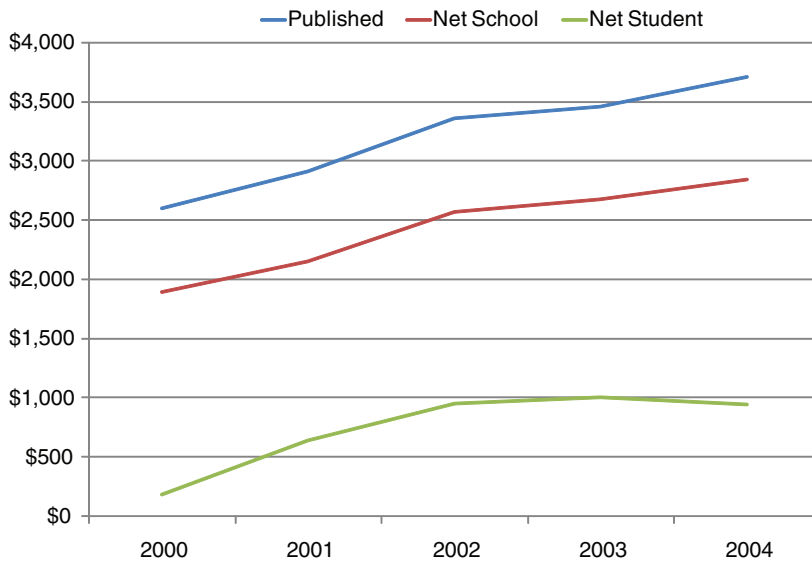
At four-year public schools (see figure 15), published tuition and the net school tuition again track each other, but the gap between them is larger. This means that schools typically get about \$600–\$800 less per student they enroll than is suggested by published tuition rates. It also suggests that schools typically increase financial aid to students at about the same rate that they increase published tuition. The most interesting thing to note is what occurs with net student tuition, or what the students actually pay.

FIGURE 14
REAL (2005 \$) TUITION AT 2-YEAR NC SCHOOLS



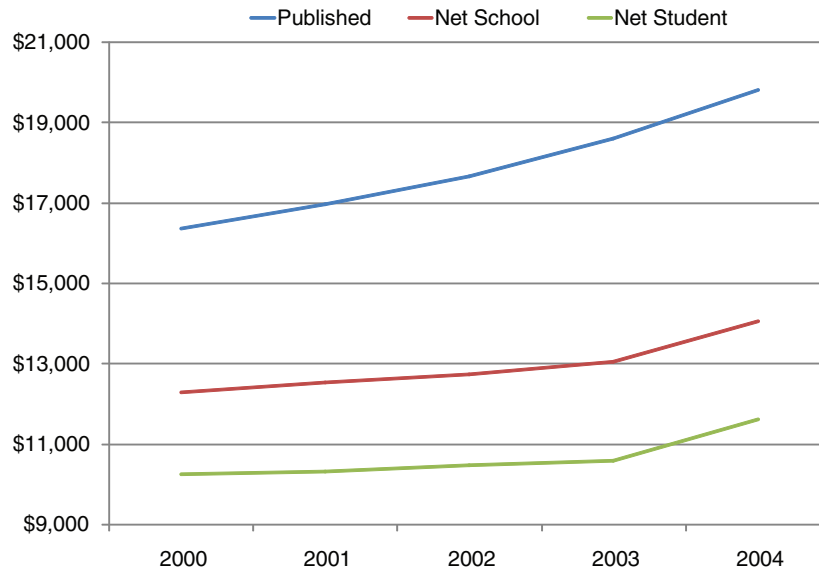
Sources: Bureau of Labor Statistics, IPEDS. CCAP calculations.

FIGURE 15
REAL (2005 \$) TUITION AT 4-YEAR PUBLIC NC SCHOOLS



Sources: Bureau of Labor Statistics, IPEDS. CCAP calculations.

FIGURE 16
REAL (2005 \$) TUITION AT 4-YEAR PRIVATE NC SCHOOLS



Sources: Bureau of Labor Statistics, IPEDS. CCAP calculations.

Starting from a very low base in 2000, this figure increased rapidly through 2002, quadrupling in just two years. Since 2002 however, it has remained virtually unchanged (in inflation adjusted dollars). Note that coinciding with the stop in the growth of net student tuition, both published and net school tuition slowed their growth rate.

From a policy perspective, the interesting thing about figure 15 is that, even with recent increases, the net cost of tuition at four-year public schools is still rather low. Given the fact that at many institutions the overwhelming majority of students are NOT poor (as measured by Pell Grants), a case can be made that North Carolina could be funding a larger proportion of higher education from student fees. This is particularly true if the public good dimension of higher education is modest or even zero.

At four-year private schools (see figure 16), published and net school tuition no longer track each other. Rather it is net school and net student that appear to move together. Schools typically receive between \$4,000 and \$6,000 less than published tuition rates, with students paying \$6,000 to \$8,000 less than published rates, on average. Note that both the amount that students themselves pay (net student in the figure) and the amount that schools receive per student (net school) both appear to be increasing rapidly after 2003. Data for 2005–2008 is not yet available from the Department of Education, but if this trend continued beyond 2004, it could be very harmful to the affordability of higher education at private institutions within North Carolina.

While one might take comfort in the fact that the net tuition for students—the amount they actually pay—only seems to be increasing at four-year private schools and is relatively constant at four-year public and two-year schools, what is shocking is that these numbers are not decreasing. With all of the money being spent by the federal and state government with the intention of making college more affordable,

we would certainly expect them to be decreasing. But, with the exception of two-year schools, the financial burden on students was greater in 2004 than it was in 2000, even after accounting for all of the aid by federal, state, and local governments, and the institutions themselves. In fairness, the burden appears to have ceased *growing* at four-year public schools, though it still remains significantly above where it was in 2000.

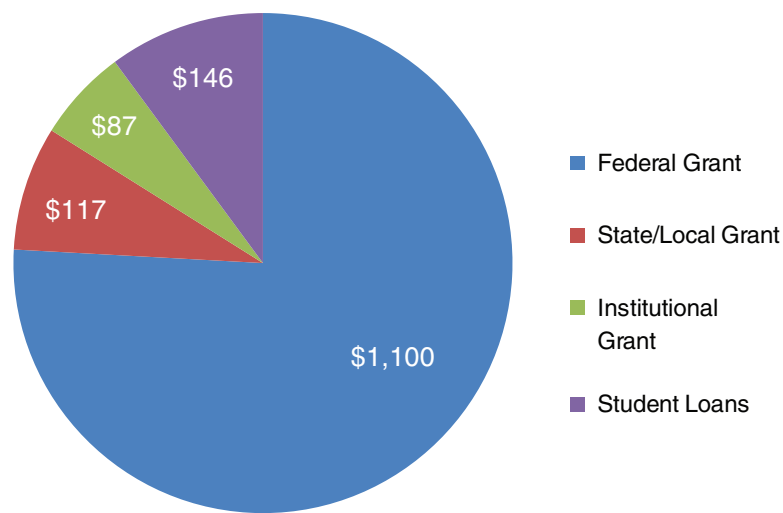
While this information is certainly revealing, a significant drawback is that there is such a lag in the reporting of data. It would be much more useful to know what is happening right now than what happened in 2004, but until there is greater transparency in higher education, we are forced to report these numbers as is. Unless schools decide to make the data available in a timely manner, we have no choice but to assume that relationships between published and net tuition that have been observed in the past hold in the present as well.

How Can Students Afford to Attend?

The previous section showed that published tuition—the “sticker price”—has been increasing rapidly. With more and more students enrolling in college, how can they afford these ever increasing tuition charges?

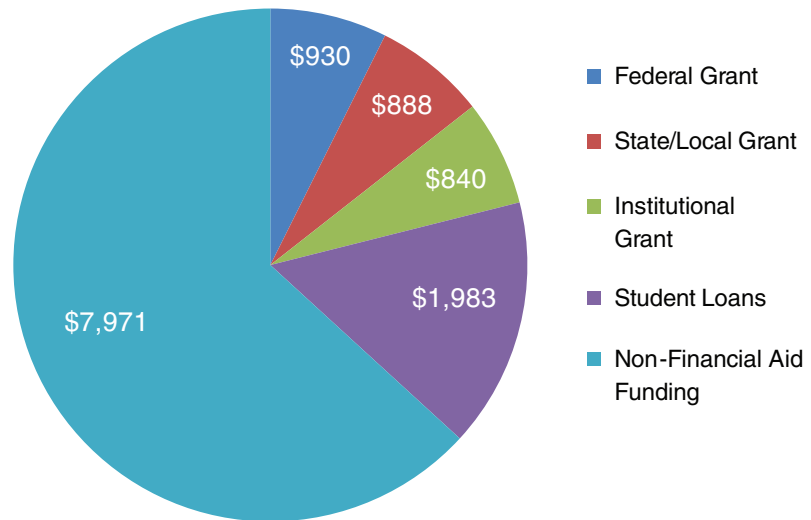
Figures 17, 18, and 19 show where the funding comes from for the average student. For two-year schools, the pie represents the average tuition and required fees at the type of school. At four-year schools, the pie represents the total cost of attendance, which includes tuition, fees, room and board. The slices represent the magnitude of each of the sources of funding. Note that “student loans” only account for the loans that a student takes out through the school’s financial aid office; thus they do not include many of the private student loans that have been getting so much press lately. In addition to out-of-pocket

FIGURE 17
AVERAGE FINANCIAL AID BY SOURCE FOR 2004:
2-YEAR NORTH CAROLINA SCHOOLS, FTE ENROLLMENT WEIGHTED



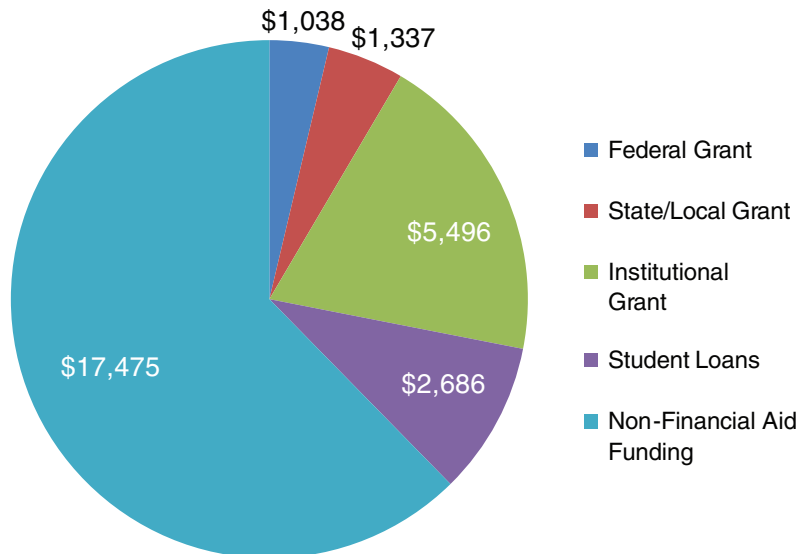
Sources: IPEDS. CCAP calculations.

FIGURE 18
AVERAGE FINANCIAL AID BY SOURCE FOR 2004:
4-YEAR PUBLIC NORTH CAROLINA SCHOOLS, FTE ENROLLMENT WEIGHTED



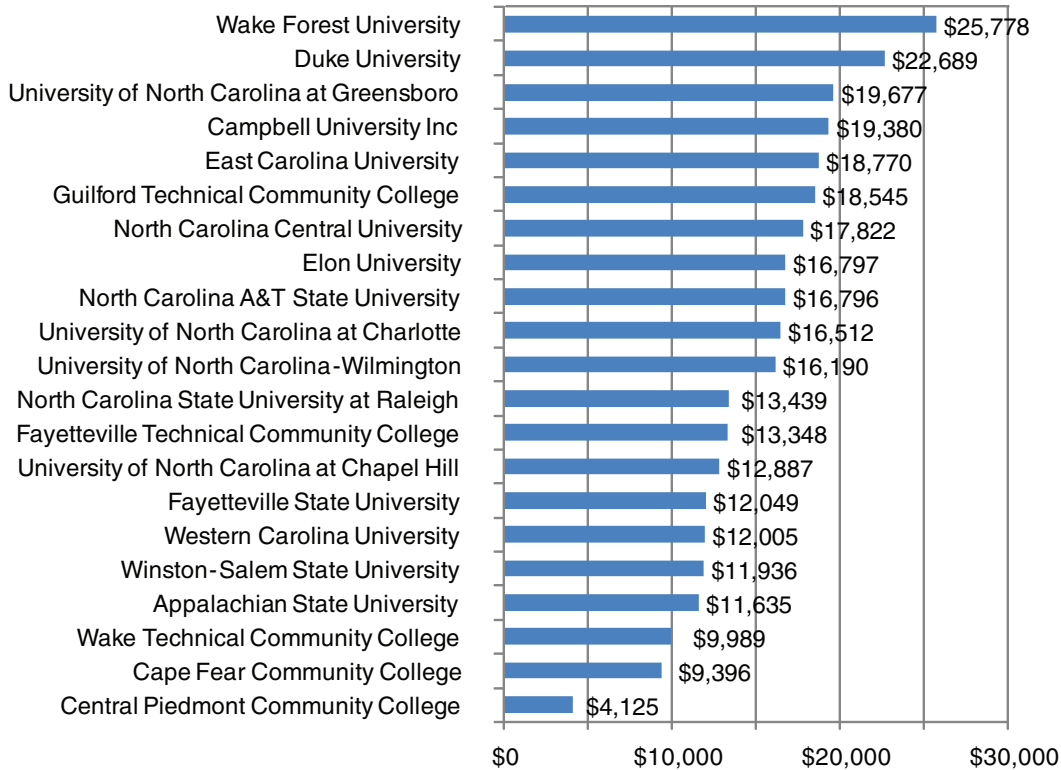
Sources: IPEDS. CCAP calculations.

FIGURE 19
AVERAGE FINANCIAL AID BY SOURCE FOR 2004:
4-YEAR PRIVATE NORTH CAROLINA SCHOOLS, FTE ENROLLMENT WEIGHTED



Sources: IPEDS. CCAP calculations.

FIGURE 20
ESTIMATED DEBT OF THE TYPICAL BORROWER^a



Note: a=assumes the student borrows the average amount each year and graduates in four years.
Source: IPEDS. CCAP Calculations.

payments, the category “non-financial aid funding” includes any outside funds that the school does not know about, such as private scholarships not awarded by or reported to the school.

At two-year schools, federal grants alone cover about 75 percent of the cost of tuition and fees, on average. State/local/institutional grants cover most of the rest. This explains the very low net tuition student figures in the previous section. The grants available to students at two-year schools are large enough and prevalent enough to render the financial burden on students very small. On average North Carolina’s two-year students have a \$72 excess of financial aid beyond tuition and fee costs. This means that the typical student has \$72 left over from their grants and loans after paying tuition and fees. This \$72 could go towards any number of school related expenses, such as books, room and board, or transportation. Note that figure 17 excludes room and board charges. It can be argued that these costs are part of living expenses one would incur if not in college, so they do not represent part of college expenses. However, they are true expenses for college students, and do add to the financial burden of attendance.

At four-year public North Carolina schools, federal, state/local, and institutional grants are of roughly similar size and together account for about a fifth of the total cost of attendance. In addition, students borrow almost \$2,000 in loans, on average, which means that the typical student needed to find \$7,971 outside of normal financial aid packages.

At four-year private North Carolina schools, federal and state/local grants are larger than for students at four-year public schools, but they cover less of the total cost of attendance. Institutional grants are much larger than at public schools, and together with federal/state/local grants cover more than a quarter of total costs. Students took out more in loans, \$2,686, but even so, financial aid packages do not cover as much of the cost (as a percentage) as at public schools. In spite of the much larger financial aid packages, students at private schools need to find much more outside money to cover their education than those at public schools (\$17,475 compared to \$7,971).

Given the increasing importance of student loans, it is quite revealing to examine the student loan debt of students at graduation. Figure 20 is constructed from the reported average student loan taken out by students (not including private loans). It reports the estimated average debt of students that take out student loans, assuming that they take out the average loan each year, and graduate in four years. Keep in mind that the proportion of students taking out loans varies considerably by school, and these calculations are not an average across all students, but an average of those that took out loans. It is interesting to note that despite similar tuition charges at some of the schools, the estimated student debt at graduation is very different. UNC Greensboro students take out about \$3,000 more than students at other UNC campuses, for example.

Where Do Schools Get Their Money?

While much of the commentary in the public focuses on tuition, it turns out that tuition is not a dominant source of revenue for schools in general, and for North Carolina schools in particular. Figure 21 shows the importance of the various sources of revenue. As you can see, North Carolina schools depend much less on tuition for their revenue than do schools in neighboring states and schools across the nation. North Carolina schools receive \$1,853 *more* in total revenue per student than do schools in Virginia (the highest of North Carolina's neighbors, even though they get \$1,140 *less* in tuition revenue per student.

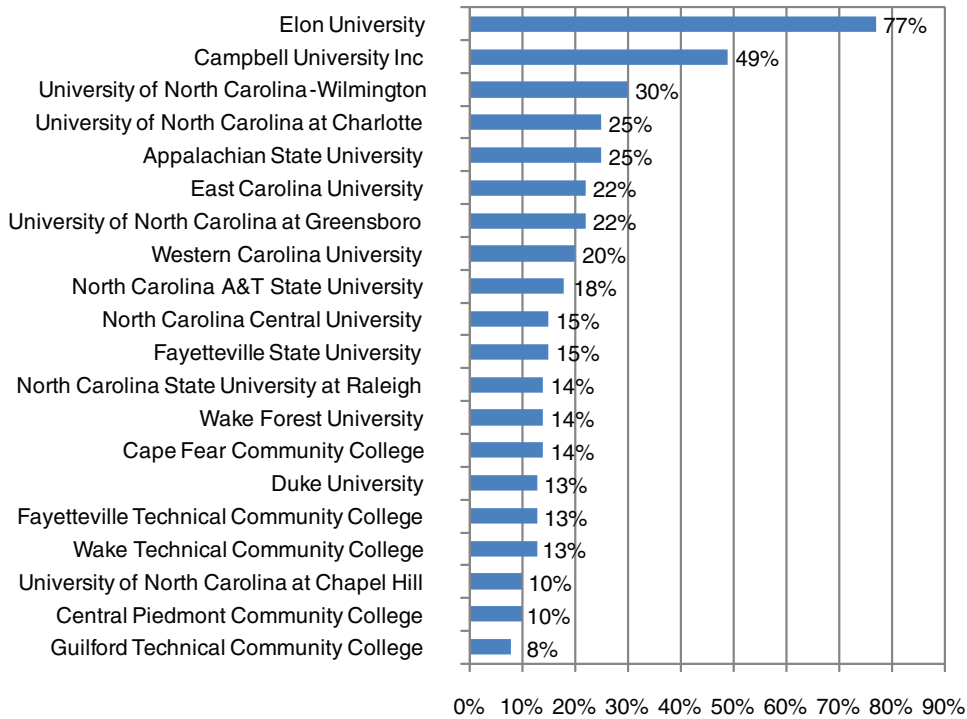
FIGURE 21

REVENUE PER STUDENT BY SOURCE, PUBLIC DEGREE GRANTING INSTITUTIONS, 2003–2004



Source: *Digest of Education Statistics*. CCAP calculations.

FIGURE 22
TUITION AND FEES AS A PERCENTAGE OF CORE REVENUES, 2004



Source: IPEDS. CCAP calculations.

But while North Carolina schools rely less on tuition, they rely more on state appropriations. As figure 21 shows, state appropriations account for \$6,083 (33.6 percent) of total per student revenues, a figure \$2,603 greater than the national average. Furthermore, North Carolina schools depend more heavily upon state appropriations as a source of revenues than do schools in neighboring states, while Georgia, the state with the second highest appropriations per student, spends \$776 less. Whereas nationally the typical state received about 65 cents in tuition revenue in 2004 for every dollar of appropriations, in North Carolina the figure was only about 35 cents.

Looking at the source of revenue for each of the schools separately (see figure 22), it is clear that tuition is not a dominant source of revenue for any of the big schools. UNC Chapel Hill only gets 10 percent of its core revenue (excluding, for example, revenue for commercial and auxiliary enterprises) from tuition. None of the big schools get more than 25 percent. One might ask the question: why do students at UNC Wilmington have to pay three times the proportion of the cost of running the institution relative to UNC Chapel Hill?

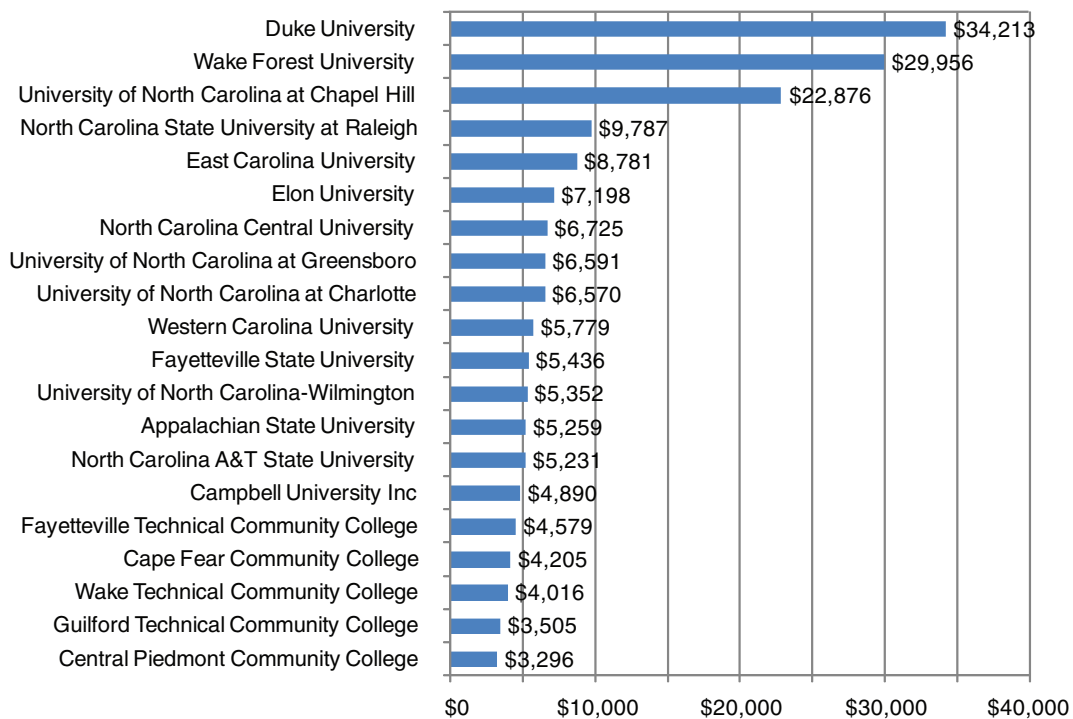
Given the small size of tuition as a percent of revenue at most schools, even large increases in tuition revenue would not have a proportional impact on total revenue. In other words, while changes in tuition can have a dramatic effect on students, they would not have dramatic effects on the overall finances of most of the schools unless the changes were truly substantial in magnitude. Looking at another revenue source, several neighbors and the nation as a whole receive more federal and state grant money than North Carolina does, a subject worth further investigation in subsequent studies of university financing in the Tar Heel State.

What Do Schools Spend the Money On?

Now that we have a sense of the source of funds for schools, we can look at how the money is spent. Instructional costs per student, shown in figure 23, vary widely, ranging from about \$5,000 at Appalachian State to just under \$35,000 at Duke. This is based on self-reported data from the schools to the U.S. Department of Education, and some of the discrepancies between institutions may reflect differences in how certain expenditures are categorized by the institutions themselves. Nonetheless, even with this caveat, the interinstitutional variations in spending are enormous, even if one confines the analysis to public institutions. Does the huge differential between Appalachian State and Duke imply that students get seven times more instruction at Duke? Our opinion is that the answer is probably not. Duke may or may not have smaller class sizes, which would require more instructors, but one thing that Duke definitely has is more distinguished (and costly) professors. It is important to note that they distinguish themselves through their research, not through their teaching. Thus some “instructional costs” likely include research activities, at least those funded by the institution through low teaching loads for faculty (data on faculty teaching loads are not published, to our knowledge, which is another sign of a troubling lack of transparency in the operations of universities).

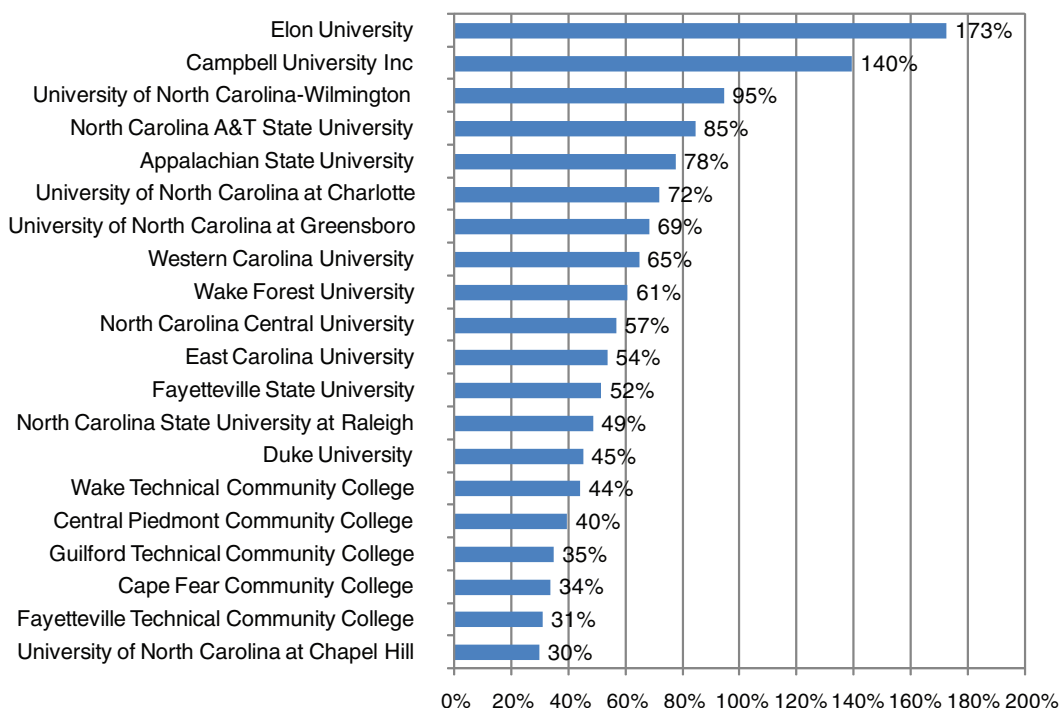
Even more relevant than the Appalachian State/Duke comparison are the differences within the public universities. Why are instructional expenses per student at Chapel Hill nearly *triple* what they are at

FIGURE 23
INSTRUCTIONAL EXPENSES PER STUDENT (FTE), 2004



Source: IPEDS. CCAP calculations.

FIGURE 24
 TUITION AND FEE REVENUE AS A PERCENTAGE OF INSTRUCTIONAL EXPENSES, 2004

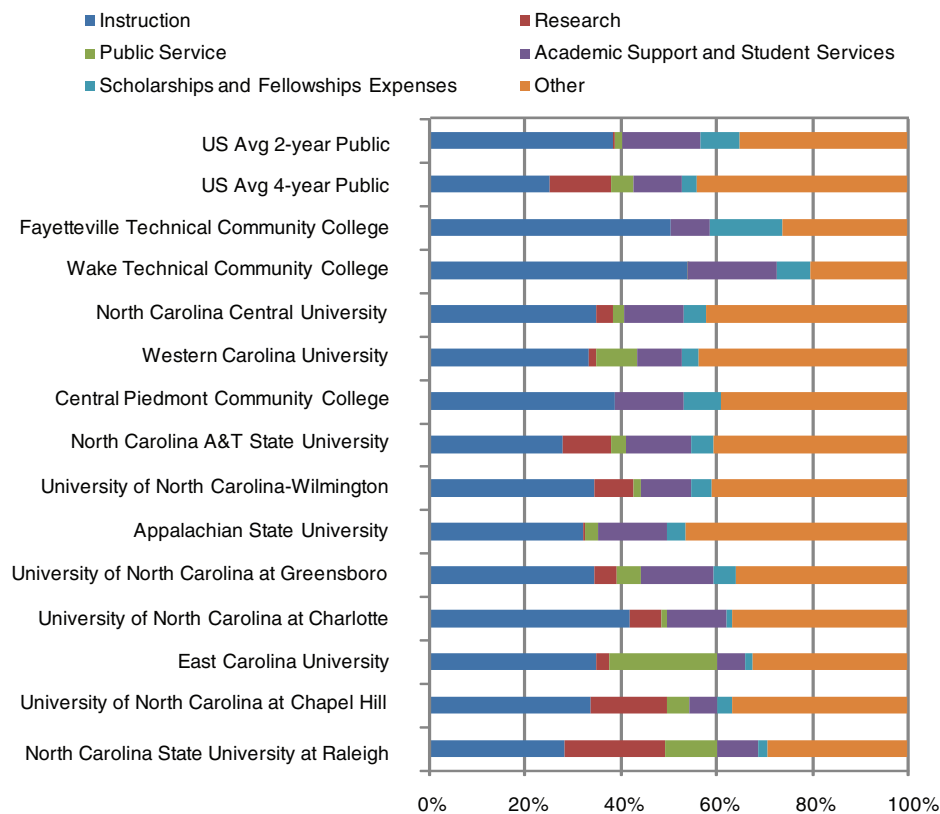


Source: IPEDS. CCAP calculations.

NC State, and more than *quadruple* what they are at Appalachian State? Part of the answer, no doubt, relates to graduate instruction, which is vastly more costly than undergraduate instruction. What does it cost to train a graduate student at Chapel Hill? The available data do not tell us, but it is plausible it exceeds \$50,000 a year. The taxpayers of North Carolina might ask: are we overdoing our subsidization of graduate education, particularly since almost certainly a large portion of graduate students are non-North Carolinians? While graduate education brings prestige and often federal research grants, given the extremely high costs, is *all* of it justifiable on cost-benefit grounds?

We can also examine how much of instructional costs are covered by tuition and fee revenue (see figure 24). Again, one is struck by the vast differences, even at similar schools. Thirty percent of instructional costs are covered by tuition and fee revenue at UNC Chapel Hill, while more than 70 percent is covered at UNC Charlotte. This raises an interesting question: why is instruction largely financed by tuition charges at Charlotte, but not at Chapel Hill? The answer, of course, is that instructional costs are vastly higher at Chapel Hill than at Charlotte, but tuition charges vary far less. It can be argued, we suspect, that at Chapel Hill external grants and gifts along with big state appropriations are used to finance graduate education and research. That is in keeping with the pattern at other major state research universities (e.g., the University of Virginia). Nonetheless, taxpayers, who ultimately fund most of the incremental cost of Chapel Hill, must ask: are we getting our bang for the buck from this expensive research and graduate

FIGURE 25
CORE EXPENDITURES OF NORTH CAROLINA SCHOOLS, FY 2005



Source: IPEDS. CCAP calculations.

education? From private discussions with UNC president Erskine Bowles, we have been impressed that he is not afraid to ask this question and wants some answers. The fact remains, however, that North Carolina spends vastly more on its public universities than most states, and certainly all its peer states—with seemingly little to show for it.

Figure 25 breaks down the expenditures of schools by category. It should be noted that the breakdown between instruction and research is not as clear as one might think. Research refers to “expenses associated with activities specifically organized to produce research outcomes and commissioned by an agency either external to the institution or separately budgeted by an organizational unit within the institution. The category includes institutes and research centers and individual and project research.” What this means is that most professors’ salaries are counted under instruction, even though for many of them, the majority of their time is spent on research. We also need to clarify what falls into the category of “other.” The category includes institutional support, operation and maintenance of plant, depreciation, auxiliary enterprises, hospital services, independent operations, and other expenses deductions.

Unfortunately, many schools, especially private ones, do not report their expenses broken down by category. Nevertheless, we can gain some important insight by examining those that do.

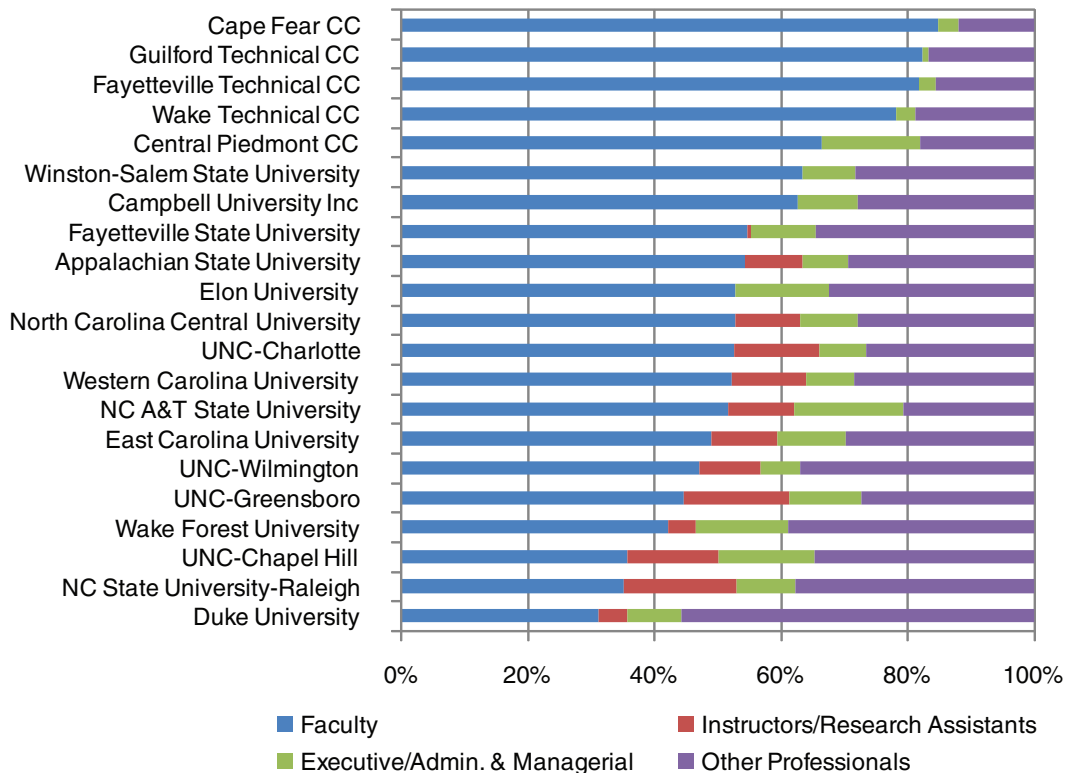
The first thing to note from figure 25 is the shockingly low percent of expenditures that goes toward instruction, especially in light of the fact that much research is counted as instruction. At four-year schools, the figure is usually around 30 percent, and even at two-year schools, the figure is only around 40 percent. Instruction appears to be almost a secondary claimant on scarce resources at many institutions. Another surprising fact is that the other category accounts for so much of spending. At Appalachian State University, almost 50 percent of all spending goes towards “other.” While some spending within this category is certainly wise, 50 percent seems unreasonably high.

It seems clear that institutions of higher education have strayed from their mission, which is to educate students through instruction. Even the best community colleges in this regard only spend half of their funds on their core function. Given this sad state of affairs, it should not be surprising that schools are constantly raising tuition. They are treating their customers as cash cows to fund “auxiliary enterprises” and “independent operations.”

If so Little Money Is Spent on Instruction, Where Is the Rest of It Going?

So if large chunks of money are not going to instruction, where is the money going? One thing we can look at is the proportion of staffing levels by position. Figure 26 shows the staff of schools by position.

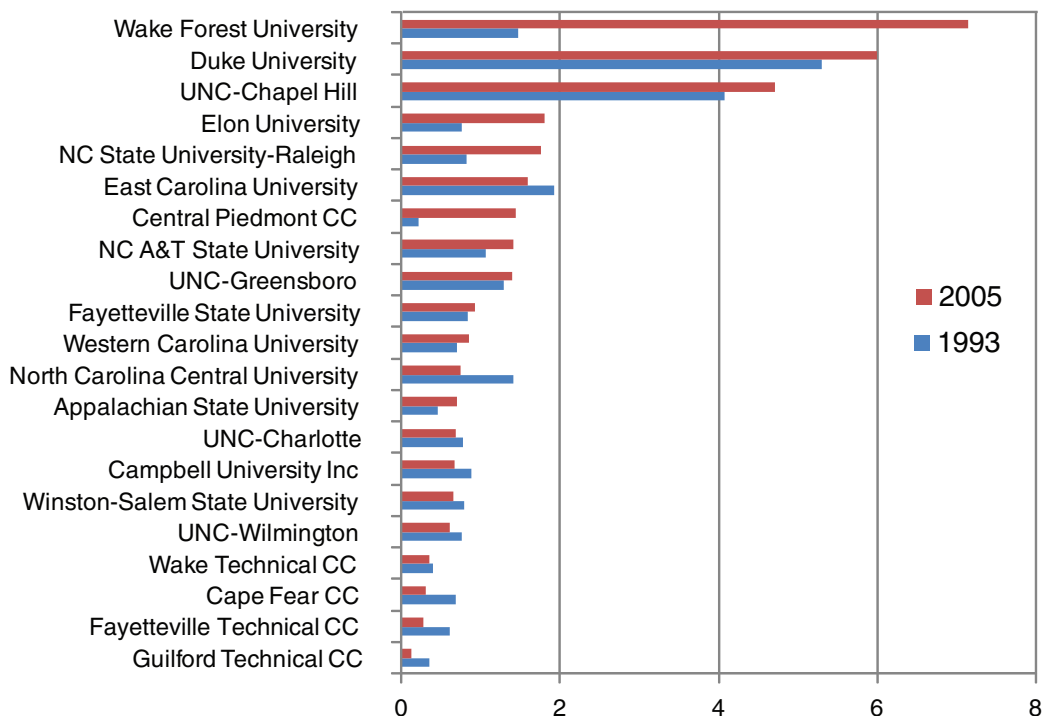
FIGURE 26
STAFF BY POSITION, 2005



Source: IPEDS, CCAP calculations.

FIGURE 27

EXECUTIVE/MANAGERIAL/ADMINISTRATIVE STAFF PER 100 FTE STUDENTS



Source: IPEDS. CCAP calculations.

The “other professionals” category includes nonfaculty professionals, technical, paraprofessional, clerical, secretarial, skilled craftspersons, service, and maintenance staff.

While some caution is warranted in drawing conclusions (medical schools for example require many staff other than faculty), figure 26 clearly shows that faculty are not as dominant among the staff as one might expect. At four-year schools, on average faculty do not make up even 50 percent of the workforce. Two-year schools on the other hand routinely reach 60 percent, and Cape Fear Community College even approaches 85 percent.

Instruction and research assistants make up a sizeable chunk of the labor force at many of the four-year schools. This hints at another trend worthy of noting, which is the increasing tendency for classes to be taught by assistants rather than by faculty.

Another point to emphasize is that the category of executive/administrative/managerial staff is surprisingly large. The change in executive/managerial/administrative staff per 100 FTE students from 1993 to 2005 is shown above in figure 27. At a majority of schools the presence of such staff significantly increased. The administrative staffs and their growth tended to be particularly large at some private schools such as Wake Forest. However, administrative staffs have grown significantly at some state schools, such as UNC Chapel Hill and North Carolina State. The salaries of these added staff members are quite expensive, which further drives up university costs. Yet, a formidable number of schools expe-

rienced a reduction in the size of executive and administrative staff, many of them community colleges. North Carolina's other schools should take note of these cost cutting measures and increased efficiency. Recently, UNC-system president Erskine Bowles has made cutting back on unnecessary staff a priority. Unfortunately, the U.S. Department of Education database does not allow us to provide timely analysis of these efforts, as 2005 is the most recent data available. Moreover, some possible differences in how schools define administrative staff suggest that these data should be interpreted with some caution.

It is interesting to compare the enrollment trends with the change in the number of executive/managerial/administrative staff per student over the last decade. As was noted earlier, the largest increase in enrollment occurred at two-year schools. Thus, enrollment is increasing faster at those schools which appear to be cutting back on administrative staffing levels per student. Why is it that there are over seven times more administrative staff per student at UNC Chapel Hill than at Cape Fear Community College? And why have administrative staffing levels increased rapidly at UNC Chapel Hill while those same staffing levels have *decreased* at Cape Fear? It's certainly not due to rapid increases in enrollment because while undergraduate enrollment at UNC Chapel Hill increased by only 8 percent from 1992 to 2005, enrollment increased by 97 percent at Cape Fear during this same time period. Even considering only universities, why are three times the number of administrative and executive staff members required at UNC Chapel Hill than at East Carolina? Again, we note that while these staffing levels *decreased* at East Carolina, its enrollment increased by almost 20 percent, much faster than at UNC Chapel Hill. Based on these data, those schools which are experiencing greater productivity for their executive/managerial/administrative staff are the schools which are increasingly educating more and more students.

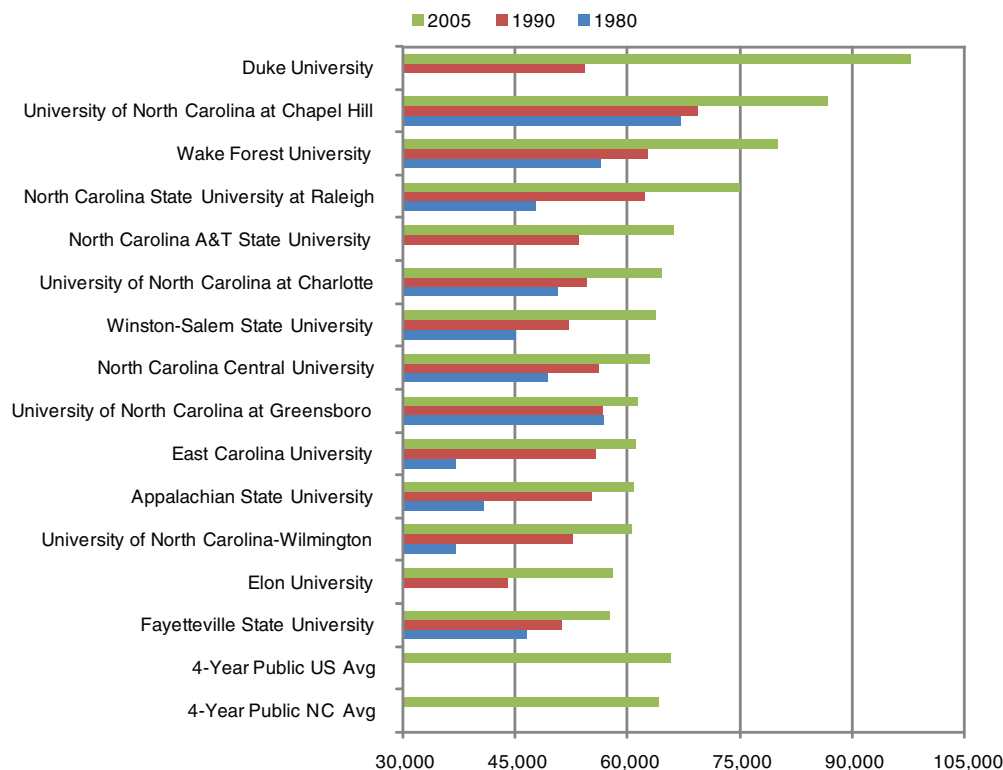
Faculty Salaries

Figure 28 shows that faculty salaries have experienced substantial increases during the past twenty-five years. Most schools follow this trend of increasing salaries, although there are exceptions such as Campbell University, which actually saw a decrease in average faculty salary. For those schools where it has grown, the rate of growth has varied significantly. With the exception of UNC Chapel Hill, Wake Forest, and NC State, all of the schools listed below had average faculty salaries at or below \$57,000 in 1990; and by 2005 UNC Chapel Hill, Wake, Duke, and NC State had average salaries greater than \$75,000. Only a few schools saw growth in faculty salaries over 20 percent from 1990 to 2005, most notably Duke, which had an 80 percent increase and an average salary of over \$95,000 in 2005. On the other hand, the average salary at Wake Forest grew only 27 percent during that same period; the average salary was \$80,000 at Wake in 2005. Average faculty salary at UNC Chapel Hill jumped nearly 25 percent during this period.

The salaries at public North Carolina universities have increased by an average of over 15 percent from 1990 to 2005. Figure 29 shows that for most schools, FTE faculty per student was relatively constant, with some going up slightly and some down slightly between 1993 and 2005 (the biggest exception being Wake Forest, which drastically reduced the number of faculty per student. It is interesting to note that both Duke and Wake Forest have reduced their faculty per student while increasing their executives/administrators per student. It is hard to see how this reprioritization can lead to a better education for students). While faculty salaries have not increased dramatically, and are not out of line with rising professional salaries in general, combined with the rising fringe benefit expenses, they suggest that faculty costs per student have probably risen around 25 percent on average.

Furthermore, a recent North Carolina compensation study published by the John William Pope Center for Higher Education Policy notes that teaching loads of tenure and tenure track faculty have fallen over time.⁹ All this combined suggests that faculty are being paid more to provide less instruction. Rather

FIGURE 28
AVERAGE FACULTY SALARY, REAL (2005 \$), 9/10 MONTH CONTRACTS



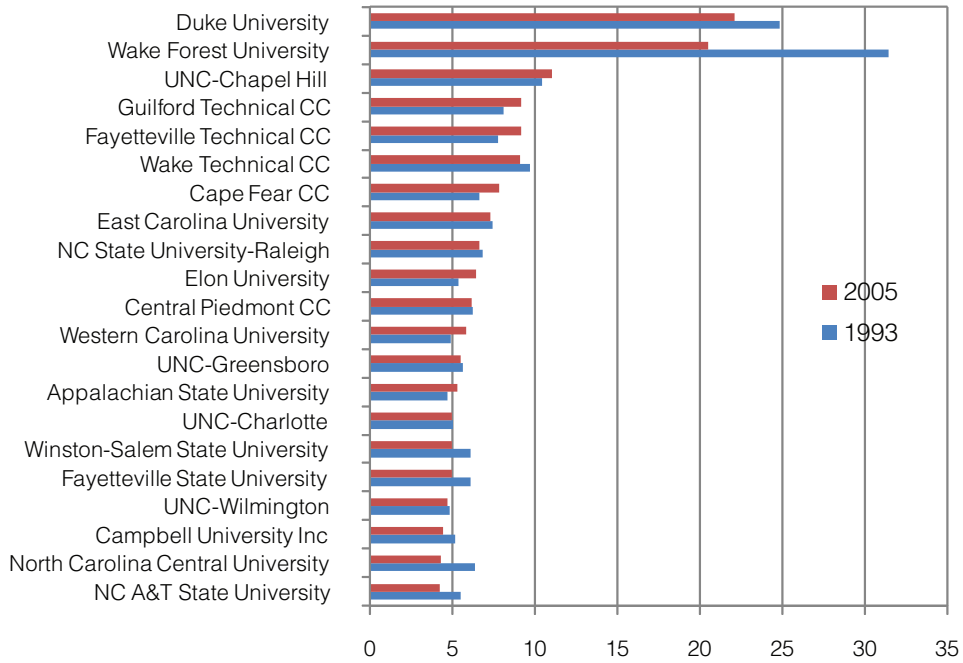
Source: IPEDS. CCAP calculations.

than “doing more with less”—the hallmark of productivity advance—North Carolina faculty seem to be “doing less with more.”

The fall in the productivity of faculty (with respect to teaching), combined with higher salaries, is certainly one reason that tuition has been increasing but cannot explain much of the explosion in tuition by itself. From 1990 to 2005 tuition increases of 167 percent at two-year schools, 110 percent at four-year public schools, and 77 percent at four-year private schools have greatly outpaced increases in faculty salaries.

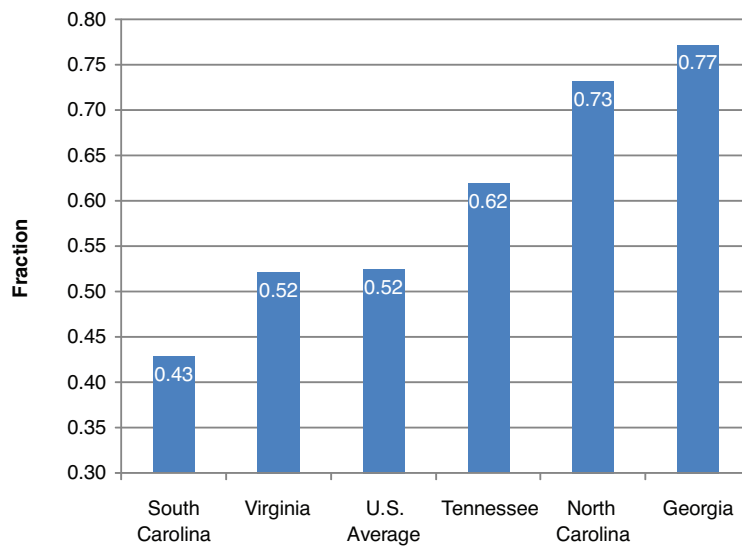
Since the cost of a university education for students comes largely in the form of tuition, one would expect that student tuition dollars should largely be spent to pay the salaries of faculty members actually teaching them. After all, universities have a number of revenue sources besides tuition that help finance other areas such as new buildings, sponsored research, etc. However, an interesting exercise is to observe the actual ratio of a school’s tuition revenue to faculty salary outlays. Evidence shows that faculty salaries are only a modest expense of tuition revenues. During the 2004–2005 school year, nationwide the salaries of full-time faculty accounted for only 52 cents of every tuition dollar at public schools, and only roughly 26 cents per tuition dollar at private schools. Figures 30 and 31 show that North Carolina has been somewhat more diligent in spending student tuition on faculty salaries than both the national average and most neighboring states. Yet, per dollar of tuition revenue, 27 cents at public and 69 cents at private institutions are used for something other than paying the professors that teach.

FIGURE 29
FTE FACULTY PER 100 FTE STUDENTS



Source: IPEDS. CCAP calculations.

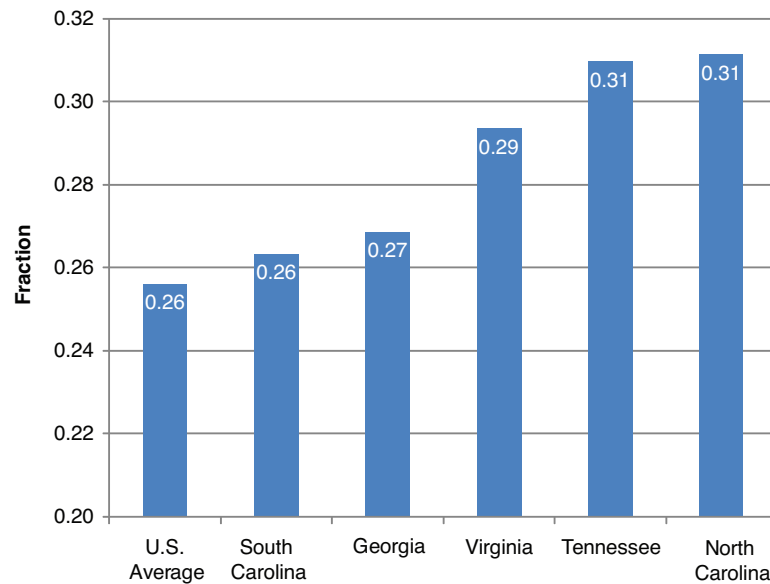
FIGURE 30
RATIO OF FACULTY SALARY TO DOLLAR OF TUITION REVENUE FOR PUBLIC 4-YEAR INSTITUTIONS:
NORTH CAROLINA AND NEIGHBORING STATES (2004–2005 SCHOOL YEAR) WEIGHTED AVERAGE



Source: IPEDS. CCAP calculations.

FIGURE 31

**RATIO OF FACULTY SALARY TO DOLLAR OF TUITION REVENUE FOR PRIVATE 4-YEAR INSTITUTIONS:
NORTH CAROLINA AND NEIGHBORING STATES (2004–2005 SCHOOL YEAR) WEIGHTED AVERAGE**



Source: IPEDS, CCAP calculations.

A recent publication in the *Daily Tar Heel* indicates UNC Chapel Hill plans to increase tuition for non-resident students with the bulk of that new revenue going to fund faculty salaries.¹⁰ Our own regression equation (table 6) is consistent with the notion that nationwide higher tuition leads to increased professor salaries.¹¹ Every one dollar increase in average tuition corresponds to a *two* dollar increase in full professor salaries at public institutions. While other variables certainly play significant roles—namely school size and state political composition—in explaining professor salaries, it appears that economic rent seeking is at work.

UNC Chapel Hill is attempting to augment faculty salaries to the 80th percentile level of peer institutions. The Pope Center study indicates that the university's faculty are already competitive with peer institutions and warns that such action would be costly and ill-advised. Likewise, residuals from the above regression equation show that North Carolina public school professors make the greatest amount above predicted figures of any neighboring state with average salaries more than \$4,200 above predicted values. Overall, North Carolina's average full professor compensation of \$108,127 is second among neighbors only to Virginia at \$109,000 a year in 2005. Clearly, North Carolina's faculty are not underpaid.

Does the State Get Its Money's Worth out of Its Appropriations?

State Attainment and Effectiveness of Appropriations

With such enormous spending levels one would expect North Carolina's population at large to be highly educated. However this is certainly not the case. The proportion of a state's twenty-five year old+ population possessing at least a bachelor's degree is commonly referred to as a state's educational attainment

TABLE 6
PROFESSOR SALARY REGRESSION RESULTS
 Dependent Variable: FULL PROFESSOR SALARY (PUBLIC)
 Method: Least Squares
 Sample: 150
 Included observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	26075.59	16082.87	1.621327	0.1128
Average Public Tuition	2.011977	0.981492	2.049917	0.0470
State Appropriations per FTE	1.462817	0.516790	2.830584	0.0072
Personal Income RPC	0.621130	0.389430	1.594971	0.1186
% Union Membership	-45976.21	27799.67	-1.653840	0.1060
FTE Students	0.058081	0.012164	4.774992	0.0000
Student-Faculty Ratio	931.7130	573.2044	1.625446	0.1119
% Private Enrollment	-13900.79	12191.17	-1.140234	0.2610
% Voting for Kerry	47208.80	21916.64	2.154016	0.0373
Pell Grant Dollars per FTE	-6.354957	3.689424	-1.722479	0.0927
R-squared	0.705111	Mean dependent var		96998.22
Adjusted R-squared	0.638761	S.D. dependent var		13212.94
S.E. of regression	7941.400	Akaike info criterion		20.97442
Sum squared resid	2.52E+09	Schwarz criterion		21.35683
Log likelihood	-514.3606	F-statistic		10.62713

Source: Residual results from table 5 regression equation.

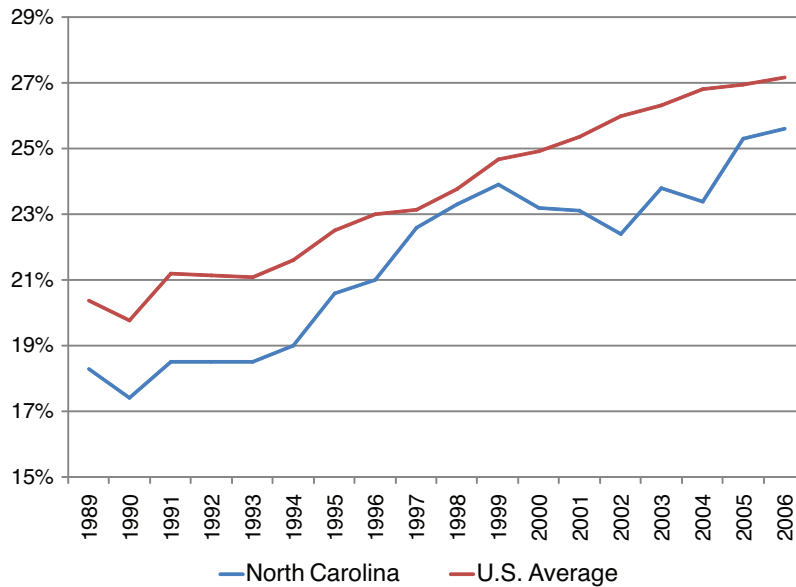
rate. In 2006, only one in four North Carolinian adults possessed college degrees, falling noticeably (slightly more than one standard deviation) below the national average of 27.2 percent. Furthermore, North Carolina’s attainment rates have lagged behind the national average every year dating back to 1989 (see figure 32), and even back to 1960 for *every* year data are available. It must be considered too that the national average is an embarrassing statistic in itself. Among peer states, the Tar Heel State has historically had only average attainment rates in comparison, and in 2004 had the *lowest* of any neighbor before rebounding slightly in 2005 and 2006.

A relatively *uneducated* population despite such a massive investment in higher education suggests great inefficiencies and wasted resources in the system. To measure the effectiveness of a state’s appropriations in maintaining a high educational attainment level among its population, we have calculated a statistic called the “Appropriations Effectiveness Ratio.” This is an index figure calculated by dividing a state’s attainment rate by the amount of state appropriations per capita devoted to higher education. It is then indexed around a national average of 100. As is evident from figure 33, North Carolina’s index score of just below 85 again falls well below the national average and every peer state. This score of 85 means that North Carolina spends \$10.64 per capita on higher education for each 1 percent of its population possessing a bachelor’s degree, whereas neighbors Virginia and Georgia spend only \$6.64 and \$6.61, respectively, to accomplish the same thing.¹²

North Carolina's Higher Education System

FIGURE 32

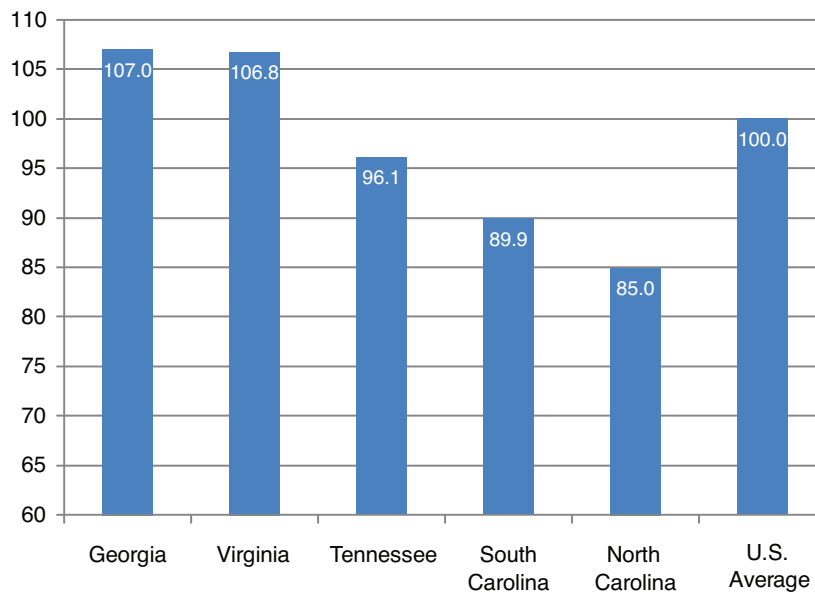
NORTH CAROLINA VS. U.S. AVERAGE: EDUCATIONAL ATTAINMENT, 1989–2006



Source: U.S. Census Bureau. CCAP calculations.

FIGURE 33

NORTH CAROLINA & PEER STATES, APPROPRIATIONS EFFECTIVENESS INDEX, 2006



Sources: Grapevine Data System at Illinois State University, U.S. Census Bureau. CCAP calculations.

TABLE 7
**NORTH CAROLINA: 6-YEAR GRADUATION RATES OF
 SELECTED PUBLIC AND PRIVATE INSTITUTIONS COMPARED TO
 STATE AND NATIONAL AVERAGES (2005)**

Selected Public Institutions	2005	Selected Private Institutions	2005
Appalachian State University	64.0%	Campbell University Inc	56.8%
East Carolina University	54.4%	Davidson College	86.6%
North Carolina A&T State University	39.5%	Duke University	93.4%
North Carolina State University-Raleigh	70.6%	Elon University	76.3%
University of North Carolina-Chapel Hill	83.8%	Gardner-Webb University	43.8%
University of North Carolina-Charlotte	48.7%	Guilford College	N/A
University of North Carolina-Greensboro	51.0%	High Point University	45.9%
University of North Carolina-Wilmington	63.5%	Mount Olive College	23.3%
		Shaw University	27.8%
		Wake Forest University	88.3%
State average^a		50.3%	
U.S. average^b		52.9%	

Notes: a=State average derived from sample of forty-nine public and private institutions in the state. b=U.S. average derived from sample of 1,464 public and private institutions.

Source: The Education Trust College Results Online. CCAP calculations.

One of the reasons for such poor attainment is undoubtedly the terrible graduation rates at most schools. North Carolina’s average is less than the national average, which itself is frightfully low—and that allows students six years to graduate from a four-year college. Overall, only about one-half of North Carolina students actually graduate from college. This suggests that vast resources are being wasted trying to educate people who are unwilling or unable to grasp the opportunity of college. The sharp variation in graduation rates suggests the cost effectiveness of schools cannot be ascertained by looking at per student spending data alone—the inputs into learning (cost of schooling) have to be related to outputs (whether students graduate, and ideally what they learned).

Fifteen Ways to Reduce Spending on Higher Education in North Carolina

This report has suggested that North Carolina spends a lot on higher education, and that its spending is high relative to its own past and relative to most other states in the Union. North Carolina spends a lot but does not get even an average proportion of college graduates among the adult population as a consequence of its high public spending.

What we have not yet done, however, is delineate some ways which can be used to reduce per student expenditure without reducing educational quality. In other words, we have said productivity is lagging, but have not had specific suggestions how that might change. We remedy that omission below by listing fifteen ideas for reducing the cost to society of North Carolina higher education.

1. Stop increasing institutional subsidies—indeed begin reducing them.

We have argued strongly that the alleged externalities justifying public subsidies for universities are far smaller than is usually claimed. Similarly, the notion that public subsidies promote economic equality is likewise questionable. The most lavish subsidies per student are concentrated on schools, most notably UNC Chapel Hill and NC State, with comparatively small populations of lower income students. Thus the benefits to taxpayers of the large and growing subsidies to state universities are somewhat dubious, and probably less compelling than providing for other public needs—or even tax relief to North Carolina taxpayers.

As with health care, a major reason for the cost explosion in higher education is that third parties—such as the State of North Carolina—pay many of the bills. When someone other than the consumer or producer is providing funds to maintain an operation, there are few if any incentives for the primary parties to want to conserve resources or even improve quality. The non-profit nature of most higher education adds to the problem—there is no “bottom line” that provides goals for providers to achieve.

As other public needs grow, in particular medical care for the aging and indigent, the pressures on state government budgets will accelerate as well. North Carolina is not a low tax state, and raising taxes to fund a relatively inefficient higher education sector is not a recipe for economic success. Hence natural tendencies are at work to reduce the higher education share of state budgets; we think this is a good, not bad, thing.

2. Move to funding students rather than institutions.

There is considerable evidence that when states give money to universities, they use a large portion of the funds for purposes other than those that the policymakers assume the funds will promote. This report has documented this with respect to North Carolina. In particular, the leading *raison d'être* of most state universities is providing postsecondary training to young residents of the state. In a model where tuition levels are relatively high but where the state provides financial assistance in the form of vouchers or scholarships to students, schools are likely to be far more student-oriented. The bias in favor of research and against teaching which prevails in most four-year universities is likely to be modestly reduced. Schools that are tuition driven will try harder to please their clientele—or lose revenues.

Vouchers can be tailored to meet social objectives. They can be made progressive, as once proposed by Robert Reich.¹³ Students from higher income families would receive small or even no vouchers, whereas those from low income families would receive generous scholarships that would lower the cost of college to levels at or below those under the current system. Done appropriately, the progressive voucher approach can lower state outlays for higher education while expanding student access.

Vouchers can also be made performance-based. They can be cut off after four years of full-time study—providing enormous incentives for students to finish school in a timely fashion. They can be enhanced for superior academic performance. Student subsidies can be made proportionate to the expected gains the students are receiving from the education.

3. Provide market incentives to increase utilization of facilities and equipment.

University physical facilities are typically far less utilized than similar facilities in the for-profit sector (either education or non-education-related). For example, classroom buildings seldom operate at more than 25 percent of capacity in the summer months, or at other vacation periods (breaks at Christmas or in the spring). At many campuses, the facilities are only modestly used on Fridays, early in the morning, or in the evening. As a consequence, the capital costs to universities are higher than they could be with greater facility utilization.

Universities should be encouraged to charge various campus units for use of space. For example, suppose UNC Chapel Hill gives its various units an additional \$40 million a year in budget funds, but makes them pay rent on those facilities—rent that based on previous usage would total \$45 million. Then the central administration would charge high rental charges for use of classrooms from 9 a.m. to 4 p.m. on Mondays through Thursdays, but low rents for use at other times. Large offices with nice views would pay higher rents than small inside offices without windows. Units would have to rent space more in non-prime times to stay within the \$40 million of rental funds. Units insisting on providing prime time classes exclusively would have to reduce spending on something else. Units willing to teach lots of off-hours and summer classes could actually make money on the deal—paying less out in rent than the rental allocation. Of course, experience over time would force some fine-tuning in rents, but the idea would provide incentives to use facilities more efficiently. The same could be done with dormitory facilities—charge lower rents for use in summer months than during the year.

4. *Align tuition charges more closely with demand and supply conditions.*

There is always an issue whether state university tuition rates should be set centrally or by leaders at each individual institution. In principle, we favor the latter approach as the demand for and cost of education varies significantly from campus to campus. Beyond that, however, the same thing applies within campuses. A strong case can be made to have differential tuition charges for each college within universities or, more radically, even for each course selected by students. It would cost less to take large lecture classes taught by assistant professors than small senior or graduate seminars taught by senior (and expensive) faculty.

In a free market economy, the price on engineering education would almost certainly be more than that of getting a degree in English. On the supply side, the cost of offering courses in English is relatively low—professors are relatively cheap, and there is virtually no supplemental high cost equipment needed to carry out instruction. Engineering, by contrast, is more costly. Professors are higher paid. There are substantial equipment requirements. On the demand side, since engineers command greater salaries than English majors, we would expect demand to be more robust for engineers. For engineers, demand is high and supply is low at any given price—factors that lead to high equilibrium prices (where demand and supply are equal). For English majors, supply is high but demand is somewhat lower—factors leading to relatively low equilibrium prices. To try to get some of the efficiency that market signals send, universities might well increase tuition for engineering students, but lower it for English majors.

Of special importance, graduate tuition fees should rise relative to undergraduate ones, since in virtually every discipline the costs of offering graduate instruction is higher—classes are smaller and professors tend to be the most highly paid. The heavy subsidization of graduate education that currently occurs would become more transparent in a system of pricing services more in keeping with market forces.

5. *Increase the proportion of students attending community colleges.*

A significant reduction in per student costs in North Carolina could be obtained by simply increasing the portion of students attending two-year as opposed to four-year schools. Costs are dramatically lower per student in the two year institutions, and an increase in the relative importance of two year schools would dramatically reduce costs.

This can be illustrated by a little hypothetical but realistic example. Suppose it costs \$10,000 per student to educate community college attendees, but \$20,000 to educate students at four-year institutions. Suppose originally one-third of students attended two-year institutions, and two-thirds attended four-year institutions. Suppose over the course of a few years, the ratio became one-half of students attending each

type of institution. For every six students, originally it cost \$100,000 to educate them (\$20,000 the two two-year students, \$80,000 the four four-year ones), or an average of \$16,667 per student. After the shift in enrollment, it costs \$90,000 to educate the same students—\$30,000 the three in two-year institutions, and \$60,000 the three in four-year schools. Average aggregate per student costs fall 10 percent, to \$15,000 per student.

To some extent, the shift towards two-year schools is already occurring in North Carolina, but it could be expanded dramatically. The case for doing so is enhanced by the high attrition rates among entering students at all types of institutions, as outlined above. Lots of students go to expensive four-year schools and then quit or flunk out. There is abundant evidence that things like high school grades and college examination scores (ACT or SAT) are good predictors of college success. Why not force students of low predicted success to attend two-year schools—or to pay a higher tuition if they insist on attending four-year schools—and then make it easy for them to transfer to four-year colleges after two years if they have done an acceptable job academically? The mechanics of freezing four-year undergraduate enrollment are easy: simply refuse state subsidies for more than the current level of enrolled students, forcing increases in enrollment to show up in the two-year institutions.

6. *Make it easy and not-costly to transfer between North Carolina public institutions.*

Following from the previous point, students correctly perceive that it is costly to transfer from college A to college B. Typically, the second institution denies credit for some of the work taken at the first school—prolonging the student's education and increasing the cost of a degree. Often the reasons for the denial of credit have little true academic rationale. For example, institution A might require students to take a course in American history as part of its general education requirement, while institution B requires a course in ethics. A student transferring from A to B must now take ethics, even though she has a superior background in American history. Both subjects are solid, legitimate parts of a general education curriculum, but a student is, in effect, penalized by the non-conformity of the curriculums of the two schools. New Jersey recently required state schools to accept all courses with passing grades from other state institutions—period. There are some arguments against this, but on the whole we should be promoting greater mobility of students. Greater mobility, in turn, should lead to higher ultimate graduation rates and greater competition between institutions—all good.

There are various ways other than a legislative edict similar to New Jersey's to address this problem. Schools could work together on a common core curriculum, or at least on a list of courses that are acceptable as replacements for required core courses. Schools could move to a common numbering system—elementary microeconomic theory will be called Economics 1 at all schools, for example.

We are aware that institutions typically resist this recommendation on the ground it infringes on institutional autonomy, and leads to over-centralization of curricular decisions. These claims have some validity. Selective institutions like UNC Chapel Hill might think it cheapens their degree if they have to accept two years of credit from two-year schools which teach courses that are less rigorous and use less demanding standards to measure performance. And probably some limits need to be placed on transfer of credit to deal with the most egregious possible problems. For example, courses that are remedial in nature and essentially offer material taught in high school should not be subject to transfer or credit (or, we would argue, award of initial credit in the first place). If a student transfers from Education at one school to Engineering at another (which, to be sure, is highly unusual), it is not unreasonable for the second institution to require a bevy of math and science courses traditionally required of all engineering students. Having said all of that, however, there should be a bias in the direction of accepting credit, a

policy of liberal transfer, and an acute awareness of the costs that institutional rules have on desirable educational objectives, such as timely finishing of degrees and the promotion of both competition and cooperation between institutions.

7. *Provide incentives to both students and institutions for timely degree completion.*

North Carolina has relatively large college enrollments, but a relatively low proportion of adults with college degrees. One factor is high attrition—college dropout rates. Earlier, we suggested that with student vouchers incentives could be provided for good performance, and vouchers could be withdrawn after, say, four years of full-time attendance. Similarly, institutional subsidies should be cut off for all students with greater than four-year attendance.

The problem also exists at two-year colleges and in graduate schools. The long time required to complete a PhD degree is a national scandal. Harvard dramatically reduced the time for humanities students receiving a PhD by simply penalizing departments with large numbers of PhD candidates of eight, nine, ten, or even more years standing. At the state level, subsidies should be withdrawn for PhD candidates after no more than four years. Charging higher tuition for fifth or sixth year students is another option—these students tend to take large numbers of moderately costly advanced classes.

8. *Promote good high school students taking college courses for concurrent credit.*

The Advanced Placement (AP) program is an excellent opportunity for North Carolinians to take high school courses for college credit, and participation in AP courses should, in general, be encouraged for high school students with reasonably high probabilities for success in AP classes. Beyond that, however, an expanded opportunity for good high school students to take actual college courses during their junior and senior years in high school would potentially save dramatically on college costs, not only to the student, but to the taxpayer as well. Some states (Ohio is an excellent example) have generally reported above average college level performance from the thousands of students who annually take college courses while in high school. Incentives need to be placed on colleges to admit such students, and also high schools should not be allowed to impede such dual enrollments either directly or through other sanctions.

9. *Encourage schools to get out of nonacademic activities.*

Universities and colleges are created to promote the production and dissemination of knowledge and ideas. Yet many schools devote vast resources and energies into doing other things—offering housing services, feeding thousands of students, entertaining the community in various ways, etc. As a rule, most of these activities can and are often provided in highly efficient manners by private providers. It is particularly inappropriate to subsidize these activities from general university funds, or, vice versa, to force students to pay high room and board charges and use surpluses to fund academic programs.

Universities can divest themselves of these programs in a variety of ways. For example, they can sell or engage in long-term lease arrangements with respect to dormitories or contract out food services to private providers. Some activities, of course, have both an entertainment and educational value—music and theater concerts may help students in those areas learn and mature, but also be a revenue source. Intercollegiate athletics are the most controversial area. This study is not the venue to evaluate the efficacy of these programs in detail. It is very difficult to justify on any externality grounds, however, taking funds provided by tuition or taxpayer support and diverting them into intercollegiate athletic programs, and limits on such subsidization may be justified.

Universities should be encouraged to get out of the delivery business in a variety of areas not mentioned above—building maintenance is a good example. Although it is an academic activity, some schools are achieving savings by contracting out remedial education courses to for-profit providers of educational services.

10. *Reevaluate institutional research, leading to higher teaching loads.*

Although good statistics do not exist, over time teaching loads have declined in American higher education. The justification for the decline is usually to allow faculty more time to conduct research. There is no doubt that, in principle, doing research is good. Society advances through new discoveries, new ideas, and even new forms of creative endeavor. Yet research has its costs as well as benefits, and a close scrutiny of much institutionally funded research would show that costs often exceed benefits.

For faculty members, they can demonstrate to the broader national and international community competence through research—tangible publications that demonstrate a desire and an ability to extend our frontiers of knowledge. By contrast, knowledge about teaching competence is localized—there is not much interinstitutional discussion of teaching effectiveness. Hence careers are advanced, and, above all, tenure is gained, by “doing” research. Institutions have lowered teaching loads at great cost. The social goals of affordable instruction are being thwarted by the personal goals of university staff to promote career advancement via lower teaching loads.

The typical professor in the social sciences, humanities, and applied vocational disciplines (education, business, communications, etc.) publishes perhaps one paper a year in a fashion where there are, perhaps, 100 readers. Or, she gives a paper in a session of a professional association attended by, perhaps, fifteen or twenty persons. The vast majority of papers have a very limited audience and deal with esoteric intellectual points of little relevance to the real world. This is no doubt less true in the sciences, but even here there are diminishing returns to research investments.

We are dubious of legislative mandates of, say, a nine-hour teaching load for all faculty. Nobel Prize-winning researchers should not have to teach a lot and perhaps even nothing at all. Similarly, others have a talent for administration that should lead them to teach relatively little. A one-size-fits-all statutory teaching mandate is not advisable. At the same time, there is nothing inappropriate about providing incentives to schools to teach more. It might even be acceptable to say to the non-research-oriented schools that make up the bulk of the state's higher education system: the average teaching load of full-time faculty with tenure shall be eight (or nine or ten) hours a week or more, and hefty fines (reduced subsidies) will be imposed on those failing to meet the teaching constraint. Institutions, then, can devise their own methods of meeting the mandate.

11. *Reduce administrative staff.*

The evidence is conclusive that there has been a growth in noninstructional professional type employees in universities—many of whom could be called, roughly, “administrators.” The number of vice presidents, vice provosts, diversity coordinators, public relations specialists, etc., has soared, growing far faster than enrollments. These persons often perform usual functions, but they are tangential to the institutional mission of instruction and research. Corporate America in the 1970s and early 1980s fought growing international competition by downsizing administrative staffs, becoming leaner. Often excessive bureaucracies slow decision-making and are less innovative and successful.

Again, a one-size-fits-all state-directive mandate is probably not wise. But perhaps state incentive payments could induce greater effort to pare administrative costs—even including bonuses to top university officials who demonstrate they can cut administrative costs without impairing the effectiveness of operations.

12. *Reevaluate use of very long-term employment contracts.*

We often read of long-term contracts of coaches or even university presidents that have to be abrogated because of personnel changes. The same thing occurs at a vastly larger level with tenured professors. The issuance of lifetime employment contracts is costly financially. The present value of a lifetime of salary payments and benefits to a newly tenured professor often is in the millions of dollars. Beyond that, tenured faculty often successfully resist needed changes. Often, changing enrollment needs mean a school has too many professors of classics or European intellectual history, but not enough professors with an interest in nanotechnology.

Schools are already hiring a larger proportion of non-tenured faculty, using adjunct instructors and graduate students as well. Whether that is a healthy trend is debatable, but it is propelled by the relatively high cost of tenure track faculty. Tenure does serve an important function—protecting faculty from retribution for their beliefs or their writings. But there are alternative means of offering that protection. Since tenure imposes costs, perhaps faculty demanding tenure should have to pay for it out of a fringe benefit budget of fixed size provided each teaching employee.

Again, a law abolishing tenure statewide would be highly ill advised. Some faculty members probably already sacrifice some income for the job security that tenure provides—and that is fine. Other faculty are able to provide a diversity of viewpoints about the human condition because of the protection tenure affords. Nonetheless, perhaps institutions should be incentivized to reduce the proportion of instructional resources going to tenure track faculty.

13. *Do more centralization of library facilities.*

Many research institutions spend 5 percent or so of their budget on library resources. In the age of the Internet, going to the library to look in books and magazines has become dramatically less necessary. It is increasingly uneconomic for fifteen libraries in a state to buy a given \$50 or \$75 book, or even subscribe to a journal for \$150 a year. The Google digitalization project and cooperative ventures like JSTOR have already had revolutionary potential impact for lowering costs for publications. Libraries are already becoming giant Barnes & Noble/Starbuck type places, with lots of comfortable chairs and computer stations to work, but not a place one goes to derive information uniquely available at that site. Regional libraries serving multiple state universities are probably a good compromise between a radical abandonment of library services and the maintenance of the status quo.

14. *Do more central contracting of purchases.*

Often schools can derive meaningful savings by jointly purchasing standardized products needed in large quantity such as computers, toilet paper, and chalk, to cite three examples. Schools should be encouraged to work with others to facilitate joint purchases. However, a costly and vast centralized purchasing bureaucracy would probably raise—not lower—costs, and should be avoided. There are limits to the economies of large scale purchasing.

15. *Eliminate costly duplication of programs.*

There are often three history PhD programs located within fifty miles of one another where market forces demand no more than one or certainly two. Institutional pride leads to a proliferation of courses and programs that sometimes is hard to justify on any rational cost-benefit grounds. It is probably not wise, in general, for a central administrative authority to forbid college A from offering major B, but it is not

inappropriate for the state to declare that it is only going to provide subsidies for students studying a given subject at no more than three schools, and for a competition to ensue to determine which schools can offer the program.

Care must be exercised here. One of the strengths of both the North Carolinian and American system of higher education is a diversity of offering and competition for students. Too much “coordination” of programs can stifle that. Yet when third parties (the state) are paying a lot of the bills, it can demand limits of the offerings of some expensive services. It is legitimate and proper for central coordinating bodies to limit state support in areas where widespread duplication of curricular offerings adds to costs.

It should be stated that progress has been already made in dealing with some of the suggestions cited above. We are heartened, for example, over some moves made by Erskine Bowles with regards to paring administrative costs. Yet more can be done. North Carolina has a relatively high cost system of higher education, heavily financed by taxpayers. Reforms are necessary, and the points above are examples of areas where cost reductions can be made.

Conclusions

North Carolina cares about its young people and their future. This manifests itself in a large degree of public support for its system of higher education. But merely spending money is not enough—the question arises: is North Carolina getting good value for its public expenditures? This study presents evidence that is in some ways rather disturbing. North Carolina spends a lot on colleges, but gets relatively small portions of adult college graduates. Moreover, the evidence suggests costs are rising rather significantly over time. Staffs are increasing faster than student enrollments. For all the concerns about inadequate state support heard from university leaders, the evidence shows North Carolina treats higher education more generously than most of its neighbors or other American states, while it may get less in results.

One of the more common explanations given for tuition hikes lately is that there is not enough government support for higher education, so schools are forced to raise tuition to make up for the revenue shortfall caused by stingy state legislatures. This explanation can certainly not hold. Real and real per capita appropriations for higher education in North Carolina are at or near their all time highs, and are significantly higher than the appropriations of its neighbors. While they did dip slightly in the mid 2000s, they have certainly not been falling lately, and therefore cannot account for higher tuition rates. Recent efforts by UNC to limit tuition hikes when the state legislature generously funds higher education are welcomed, and we encourage more such actions.

Have relatively high appropriations in the Tar Heel State led to relatively low costs for students? Not really. Published tuition charges have risen sharply at North Carolina institutions. Even once we account for all of the federal, state, local, and institutional grants provided to students, the average financial burden (the net student tuition) has increased in both four-year public and four-year private schools, and has remained constant at two-year schools. Combined with the fact that spending at schools in North Carolina tends to be higher than in other states, this indicates that the relatively high levels of state appropriations in North Carolina have not served primarily to reduce student costs, but rather to increase spending levels at institutions in the state.

More attention needs to be placed on making higher education less of a burden on both taxpayers and consumers. This paper suggests a number of areas where cost reductions often are possible. Higher education currently lacks the incentives or motivation to make the vigorous changes needed to make higher education a positive force for change and progress in the Tar Heel State.

Notes

1. The problems facing North Carolina, of course, are not unique to the Tar Heel State. They are discussed extensively in the report of the Spellings Commission. See the Secretary of Education's Commission on the Future of Higher Education, *A Test of Leadership: Charting the Future of U.S. Higher Education* (Washington, DC: U.S. Department of Education, 2006), available at www.ed.gov/about/bdscomm/list/hiedfuture/index.html.

2. All data in this paragraph were obtained at http://colleges.usnews.rankingsandreviews.com/usnews/edu/college/rankings/rankindex_brief.php.

3. All data in this paragraph were taken from Intercollegiate Studies Institute's National Civic Literacy Board, *Failing Our Students, Failing America* (Wilmington, Delaware: Intercollegiate Studies Institute, 2007).

4. We have examined this issue extremely thoroughly, with increasingly sophisticated models using panel data with well over 1,000 observations. Most of the variables in the model are nonuniversity determinants of growth added for control purposes—e.g. the results also show that tax burdens and unionization are negatively associated with growth. Variables come from a variety of data sources, most notably the Bureau of Economic Analysis, the Grapevine Data System at Illinois State University, and the U.S. Census Bureau.

5. Dependent variable data from the Grapevine Data System and the Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce. Independent variables come largely from the U.S. Census Bureau and NCES.

6. Note that in this and other figures that use IPEDS data, the years are not continuous. Specifically, the years 1981–1983 and 1999 are not included.

7. Note that figures are “FTE weighted.” This means that each school's figures are weighted by the proportion of full-time equivalent students at the school in the fall of 2005. Thus the number reported is the weighted average, fixing the proportion of students at each school at its 2005 level.

8. The trends in North Carolina are rather typical of those nationally. See the College Board, *Trends in College Pricing: 2007* and the companion publication, *Trends in Student Aid: 2007*. Both are accessible through the College Board web site at <http://www.collegeboard.com>.

9. Jon Sanders, “Faculty Compensation in the University of North Carolina System: How UNC Schools Compare with Their National Peers,” (study, John William Pope Center for Higher Education Policy, May 2007).

10. Eric Johnson, “Tuition Hikes Likely to Pass BOG,” *Daily Tar Heel*, November 20, 2007, available at <http://media.www.dailytarheel.com/media/storage/paper885/news/2007/11/20/University/Tuition.Hikes.Likely.To.Pass.Bog-3111764.shtml>.

11. Regression results for inter-state variations among full professor salaries at public four-year universities. Dependent variable data from the *Digest of Education Statistics* (table 244). Data for independent control variables is from a variety of sources, notably the Grapevine Data System, the Bureau of Economic Analysis, the *Digest of Education Statistics*, Postsecondary Education Opportunity, and the U.S. Census Bureau.

12. More sophisticated regression results not included here account for other variables in addition to appropriations such as personal income growth, migration rates, poverty levels, and household composition. In this analysis North Carolina nearly meets predicted attainment rates, but still lags behind the national average.

13. Robert Reich, “The Case for Progressive Vouchers,” *Wall Street Journal*, September 6, 2000.

