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Not Just Treading Water

In Higher Education, Tuition Often Does More than Replace Lost Appropriations

By Neal McCluskey

EXECUTIVE SUMMARY

No one disputes that the sticker price of college—what schools charge, not necessarily what students end up paying—has for decades been rising at a very fast clip. What analysts disagree about is why. There are many possible explanations, but one that has a lot of adherents is that direct public support for colleges and universities, which is determined primarily by state, and to a lesser extent, local governments, has been in considerable decline. Schools have had to raise prices just to stay at level funding.

This explanation has problems. For one, it cannot be applied to private institutions, where prices have risen precipitously over the last 25 years. That said, prices at public four-year institutions and community colleges—especially the former—have risen faster than at private schools. Can these results be explained by declining direct support? As this paper illustrates with breakdowns of appropriation and tuition-and-free revenue for all 50 states, changes to direct subsidies are only part of the explanation, and that part varies from state to state.

In the aggregate, state and local support for higher education has risen over the last 25 years, and "cuts" mainly appear on a per pupil basis because enrollment has increased significantly. Even then, for the average state only around 57 percent of annual increases in per pupil tuition and fee revenue covered per student drops in state and local appropriations—a far cry from the notion that colleges have had to raise prices just to keep their heads above water. And a potentially crucial underlying factor may help to explain the per pupil cuts: state policymakers may constrain appropriation increases because they know that aid to students, primarily through the federal government, allows students to pay more.

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INTRODUCTION

In 2010, total student loan debt surpassed total credit card debt held by Americans. About two years later, total student debt broke the psychologically huge $1 trillion mark. These milestones brought to a boil long-simmering frustration with college price growth that has outstripped normal inflation, household income changes, and even spending-rate increases in the health-care sector.

Something about higher education pricing seems seriously dysfunctional. But what? Theories abound to explain higher education's Rocketeer-like charges, and there are numerous factors at play with different weights and effects, including changing amounts and types of student aid, colleges' for-profit or nonprofit status, schools' geographical locations, colleges' selectivity, and more.

While there are many theories, one variable seems to get special attention: direct subsidies to public institutions. Especially when hypotheses are raised that colleges are revenue maximizers and have—at least in part—been increasing tuition and fees to soak up federal student aid, many college defenders are quick to respond that the primary reason for schools increasing their prices is the need to back-fill state cuts. This is a problematic explanation right off the bat because private institutions have traditionally received little direct state and local subsidization and thus have experienced few "cuts," yet they have experienced major price inflation as well. When it comes to public colleges, where the state funding theory is far more plausible, data published annually by the State Higher Education Executive Officers (SHEEO) can help us to see the effects of declining direct subsidies because SHEEO's data on public appropriations and tuition-and-fee revenue make it possible to examine the 25-year trends in both appropriations to higher education and tuition-and-fee income.

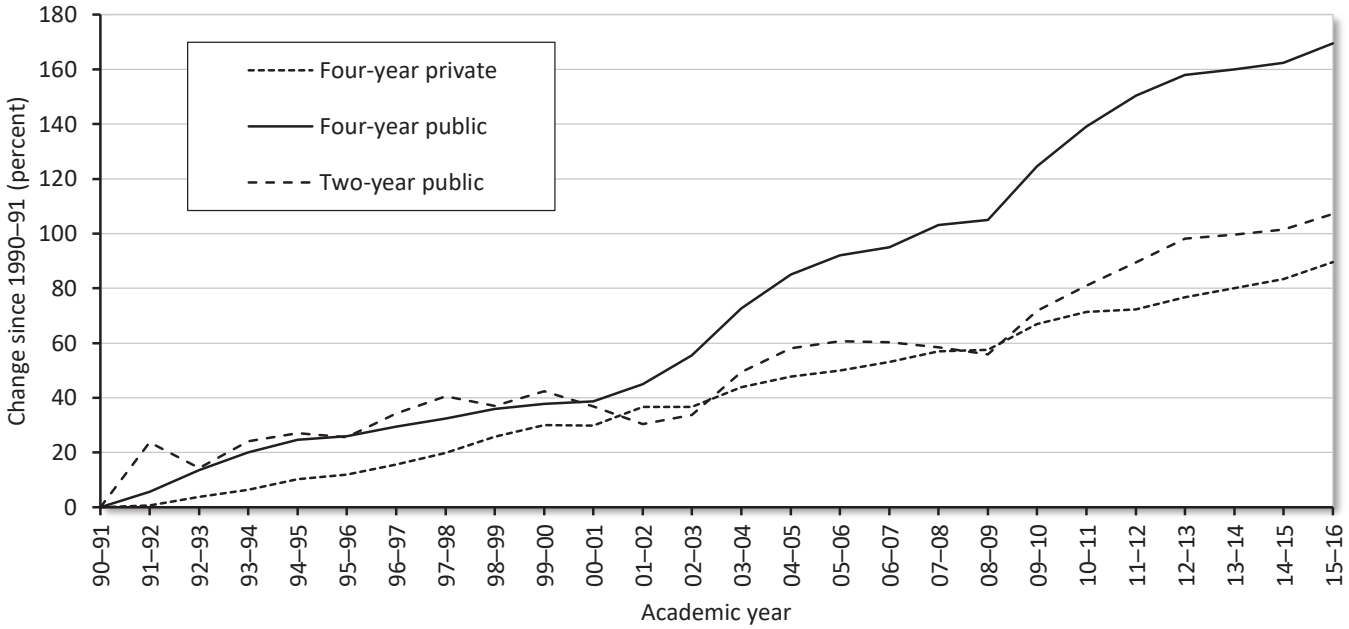
It is important to note that the price index SHEEO uses—its Higher Education Cost Adjustment (HECA)—is based on a fixed mix of white-collar labor costs (75 percent of the calculation) and goods and services (25 percent) and may overstate inflation compared to the more commonly used Consumer Price Index (CPI), which uses prices for a standard "basket" of goods and services facing urban consumers.[1] Some analysts have argued that the difference between inflation adjusted using HECA and CPI is small, but they nonetheless find that HECA likely overstates inflation compared to CPI and, hence, how much funding may have declined over the last 25 years.[2] By primarily using the HECA adjustment, this paper may present a worst-case scenario for public colleges.

THE TRENDS

Two things are fairly clear: Over the past 25 years, the sticker price of a college education has been on a markedly upward arc, and state and local appropriations for public institutions have, on a per full-time-equivalent (FTE) student basis, been on a roughly declining slope. But while prices have increased pretty steadily, per student appropriations have moved up and down in a pattern that tracks more closely with changes in the business cycle: in good economic times, appropriations rise and college enrollment falls; in bad times, the reverse happens. Figure 1 shows the rise in CPI inflation-adjusted prices for four-year public and nonprofit private institutions and for two-year public colleges (better known as community colleges). Specifically, it shows the percentage change in published tuition and fees since the baseline 1990–91 academic year.

All three sectors have seen big sticker price increases over the last 25 years, although they started at different levels, with community college prices tending to be much lower than those of four-year public institutions, and four-year publics—at least for in-state students—starting much lower than those for four-year private schools. It should be noted that schools with on-campus housing often have room and board charges. This paper's focus, however, is on the core higher-education costs to students—tuition and fees—especially

Figure 1
Trends in Published Tuition and Fees (in 2015 dollars)



Source: College Board, *Trends in College Pricing: 2015,* Table 2, https://trends.collegeboard.org/college-pricing/figures-tables/tuition-fees-room-and-board-over-time.

since people need housing and food whether they are in school or not, and many students do not live on campus.

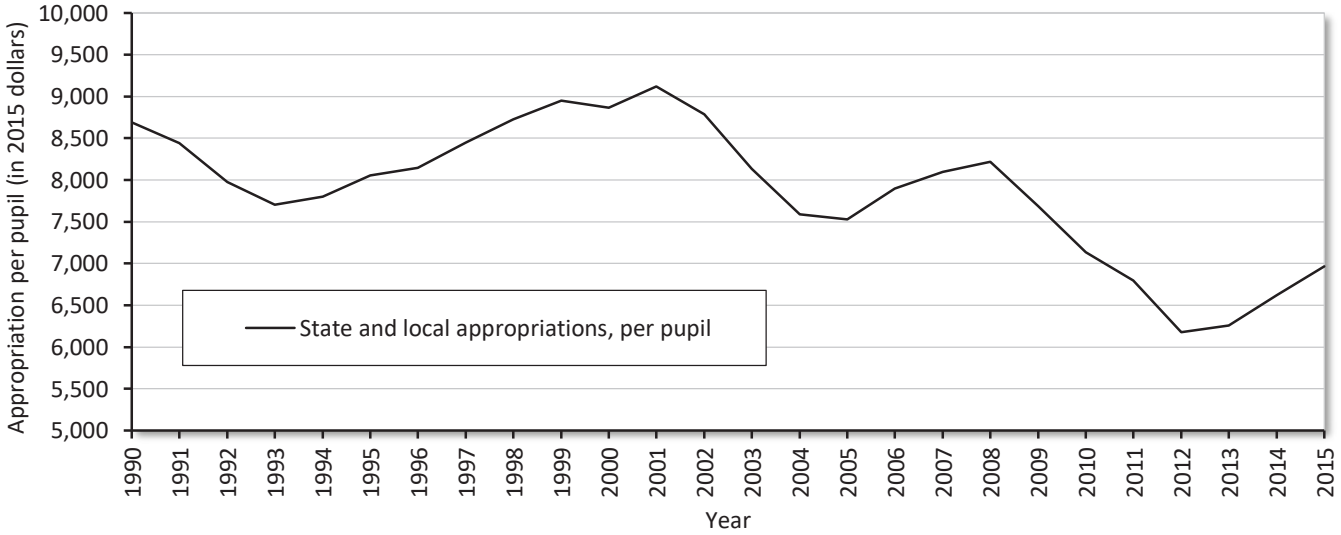
The other very noticeable trend is that while all sectors have experienced major inflation-adjusted price growth, starting around the 2000–01 academic year, inflation in the four-year public sector commenced a steeper increase than in the other two sectors. This suggests that, while all sectors have been marked by steeply ascending prices, there may be something different about public four-year institutions. That attribute may be changes in state funding. Private institutions are far more reliant on private funding, such as tuition and donations, than are public four-year institutions, which receive relatively heavy state funding. For public two-year institutions, local funding sources have played a much more significant role than for four-year public institutions, although community colleges also receive appreciable amounts of state money.[3]

Nationally, as Figure 2 shows, on a per pupil basis there has been a descending trend in inflation-adjusted state and local appropriations to colleges—money used for operating expenses. In 1990, $8,688 was appropriated per pupil, compared to $6,966 in 2015 (both figures are in 2015 dollars). As noted earlier, though, this may be an overstatement of the decline; researcher Andrew Gillen has calculated an appropriation drop of $900 per student using CPI, not the roughly $1,700 drop indicated by using HECA.[4]

Regardless of the adjustment used, the downward trend does not mean that *total* state and local appropriations have been falling. As Figure 3 illustrates, inflation-adjusted revenue from state and local appropriations fluctuated during the period but ultimately stood at $77.6 billion in 2015, versus $67.5 billion in 1990 (in 2015 dollars). Looking at total state and local funding—which includes research, agricultural, and medical support (which SHEEO accounts for separately)—HECA-adjusted spending rose from $81.5 billion to $88.0 billion, and CPI-adjusted spending rose from $74.0 billion to $88.0 billion.[5]

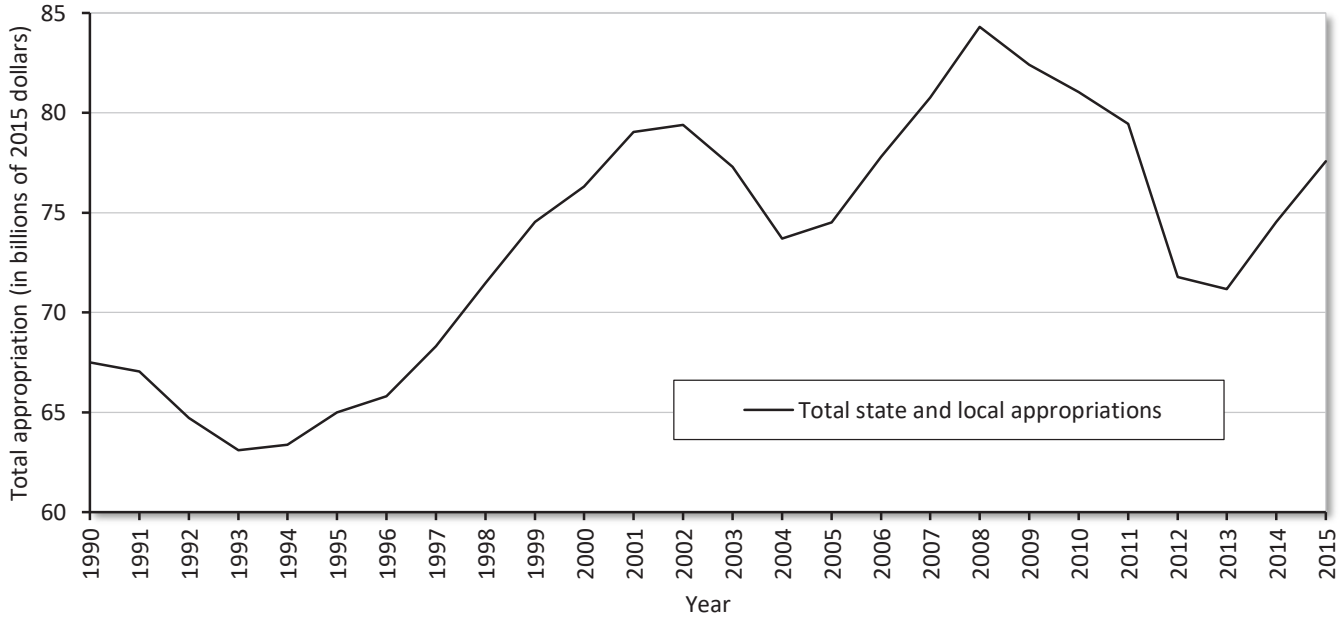
What created a large drop in per pupil appropriations was ballooning FTE enrollment,

Figure 2
National Trend in per Pupil Appropriations (in 2015 dollars)



Source: State Higher Education Executive Officers, "State-by-State Wave Charts (XLS)," *SHEF—State Higher Education Finance FY15*, http://www.sheeo.org/projects/shef-fy15.

Figure 3
Total State and Local Appropriations (in billions of 2015 dollars)



Source: State Higher Education Executive Officers, "State-by-State Wave Charts (XLS)," *SHEF—State Higher Education Finance FY15*, http://www.sheeo.org/projects/shef-fy15.

which rose from 7.8 million to 11.1 million students. How did state and local funding separately fare? Using HECA, total state funding grew from $76 billion to $79 billion, and local funding grew from $5.6 billion to $9.1 billion.[6] This suggests that the higher inflation rate for four-year public colleges than for two-year institutions may have been partially a function of community colleges receiving relatively more of their direct subsidies from local sources.

What seems likely is that community colleges have kept a fairly small-time, local mission relative to their larger four-year public cousins. Many of the latter seek to compete for full-time students on national or regional stages, requiring greater overall funding. Community colleges, generally, have a unique mission of being relatively low-price avenues to attain postsecondary education on a nonresidential basis. Of course, although two-year public colleges have seen tuition-and-fee increases that are low relative to four-year public institutions, prices have still doubled in real terms over the last 25 years. Their inflation is only somewhat tamer than that at four-year public colleges.

APPROPRIATIONS VERSUS TUITION REVENUE

This returns us to the original question: Are appropriation cuts the main culprits behind escalating college prices? They are, according to Terry Hartle, senior vice president at the American Council on Education, who said in recent congressional testimony:

> The biggest factor driving price increases for most American families is the steep cuts by states in operating support for public higher education. In the last 25 years, states have systematically reduced spending in higher education, resulting in increased tuition at public institutions to offset reduced state revenue.[7]

The American Council on Education is arguably the nation's premier advocacy group for higher education, representing more than 1,700 public and private institutions.[8]

As mentioned, this analysis of direct public subsidies uses data from the 2016 edition of SHEEO's State Higher Education Financing (SHEF) report, which covers the years 1990 to 2015. The appropriations data, importantly, "exclude spending for research, agricultural, and medical education, as well as support for independent institutions or students attending them."[9] Why? "Since funding for medical education and other major noninstructional purposes varies substantially across states, excluding these funding components helps to improve the comparability of state-level data on a per student basis."[10] The tuition-and-fee data are "the gross amount of tuition and fees, less state and institutional financial aid, tuition waivers or discounts, and medical student tuition and fees."[11] SHEEO cautions against making firm declarations when comparing one state to another because states may have different wrinkles in how they spend and account for funding, implying rankings and comparisons should be approached cautiously.[12] Take such an approach to the ranking reported below, which is not the main takeaway from this study but which can, perhaps, give state residents and policymakers a sense of where their state stands on spending and tuition.

What do the data suggest about the relationship between direct subsidies and prices? First, note that this analysis looks at revenue through tuition and fees, not schools' officially stated tuition rates (that is, sticker prices). While prices are obviously connected to revenue, schools do a lot of tuition discounting, so what they charge is not necessarily what they expect to receive from each student. Second, remember that private colleges have seen major price inflation but they have long received little direct state support. Third, recall that total inflation-adjusted state and local operating support has *not* dropped over the last 25 years, as Figure 3 illustrates. Total state support also has not dropped; instead, it has risen by billions of real dollars whether it is adjusted with HECA or CPI, or whether it includes research, agricultural, and medical spending. Indeed, a smoothed trend line shows that total direct public appropriations have risen by roughly $580 million per year over the last quarter-century. Contrary to what Hartle reported to Congress, state governments overall, and in combination with local governments, have not systematically made steep cuts to their direct college subsidies.[13]

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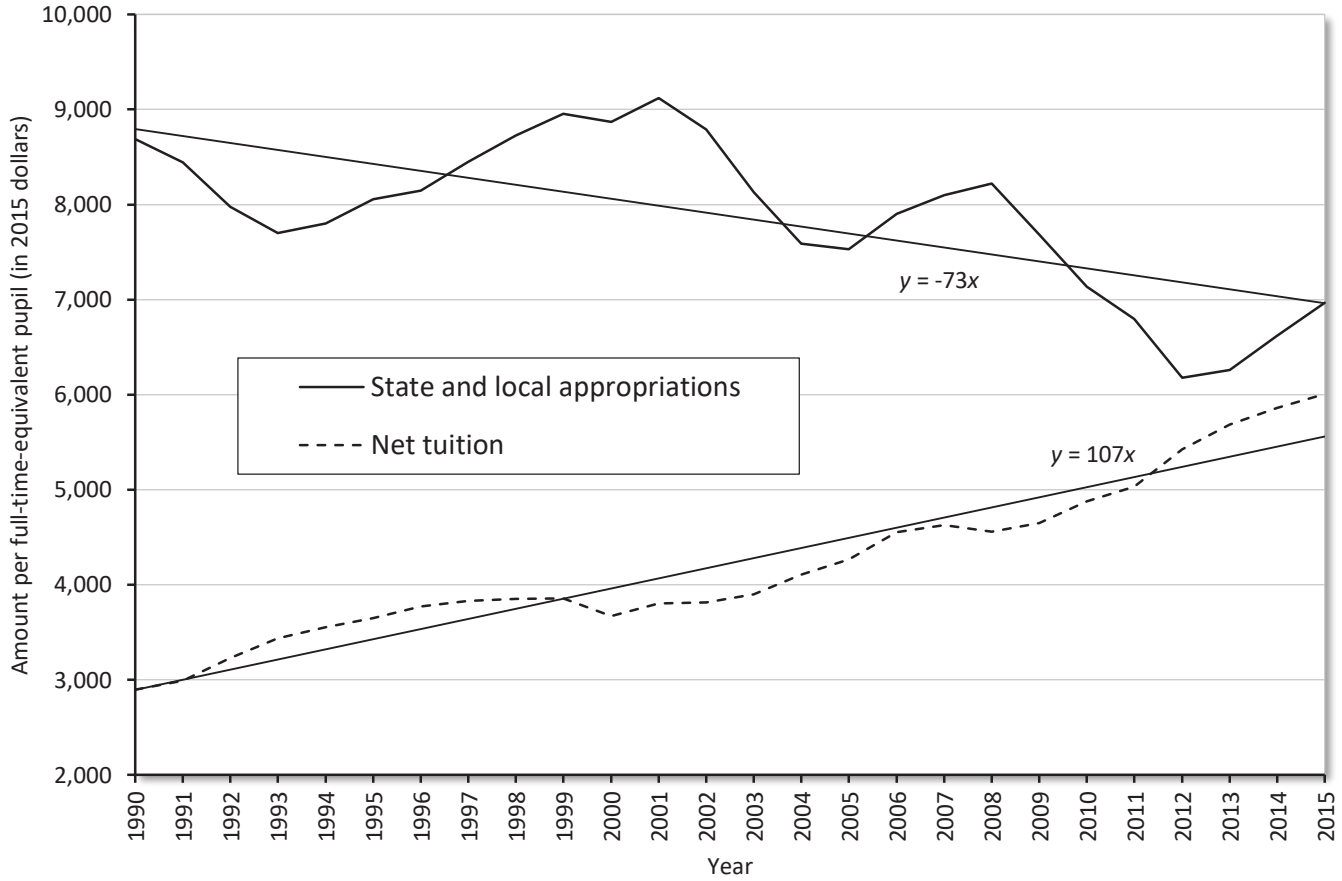
As noted before (and illustrated in Figure 2), where Hartle would be partially correct would be in identifying a drop in operating support on a per pupil basis. Of course, there have been significant fluctuations from year to year, and note that the peak per student operating expenditure was in 2001—roughly the *middle* of the period. A systematic decline, even in per pupil spending, is not supported. Still, in the national aggregate, much of the increased revenue for public institutions coming through tuition and fees seems to have been needed to cover the overall decline, as suggested in Figure 4, which recreates Figure 2 on the top line but adds a linear trend line and data for per pupil tuition-and-fee revenue. Tuition-and-fee revenue increased by about $107 per student, per year, so about 68 percent of the increase would have covered lost state and local appropriations.

Of course, if 68 percent of the tuition-and-fee revenue increase covered losses in state and local funding, that means 32 percent of the increase did more than backfill declining appropriations. And the national aggregate can be deceiving. When broken down by state—and states are typically in charge of four-year public institutions—less than 68 percent of the tuition-and-fee increases appears to cover appropriation losses.

To get our state trends, we fit a linear trend line to both the appropriation and the tuition-and-fee data for each state to provide a general, smoothed estimate of how the two variables have changed over time. As captured in Table 1, the trends can be broken into four

Figure 4
National Trends in per Pupil Appropriations and Tuition-and-Fee Revenue (in 2015 dollars)



Source: State Higher Education Executive Officers, "State-by-State Wave Charts (XLS)," *SHEF—State Higher Education Finance FY15*, http://www.sheeo.org/projects/shef-fy15.

Table 1
Revenue Changes by State

Appropriations increase, tuition and fees increase	Appropriations decrease, tuition and fees increase more
Alaska, Illinois, Kentucky, Nebraska, North Dakota, West Virginia **Average net per student change (per year): $169** **Average total change in revenue (per year): $34,825,412**	Alabama, Arizona, Arkansas, Colorado, Connecticut, Delaware, Hawaii, Indiana, Kansas, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Mexico, New York, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia **Average net per student change (per year): $63** **Average total change in revenue (per year): $43,909,211**
Appropriations decrease, tuition and fees increase less	**Appropriations increase, tuition and fees decrease**
California, Florida, Georgia, Idaho, Iowa, New Jersey, North Carolina, Ohio, Pennsylvania, Washington, Wisconsin **Average net per student change (per year): -$30** **Average total change in revenue (per year): $68,388,733**	Louisiana, Wyoming **Average net per student change (per year): $83** **Average total change in revenue (per year): $15,268,073**

Source: Author groupings using data from State Higher Education Executive Officers, "State-by-State Wave Charts (XLS)," *SHEF—State Higher Education Finance FY15*, http://www.sheeo.org/projects/shef-fy15.

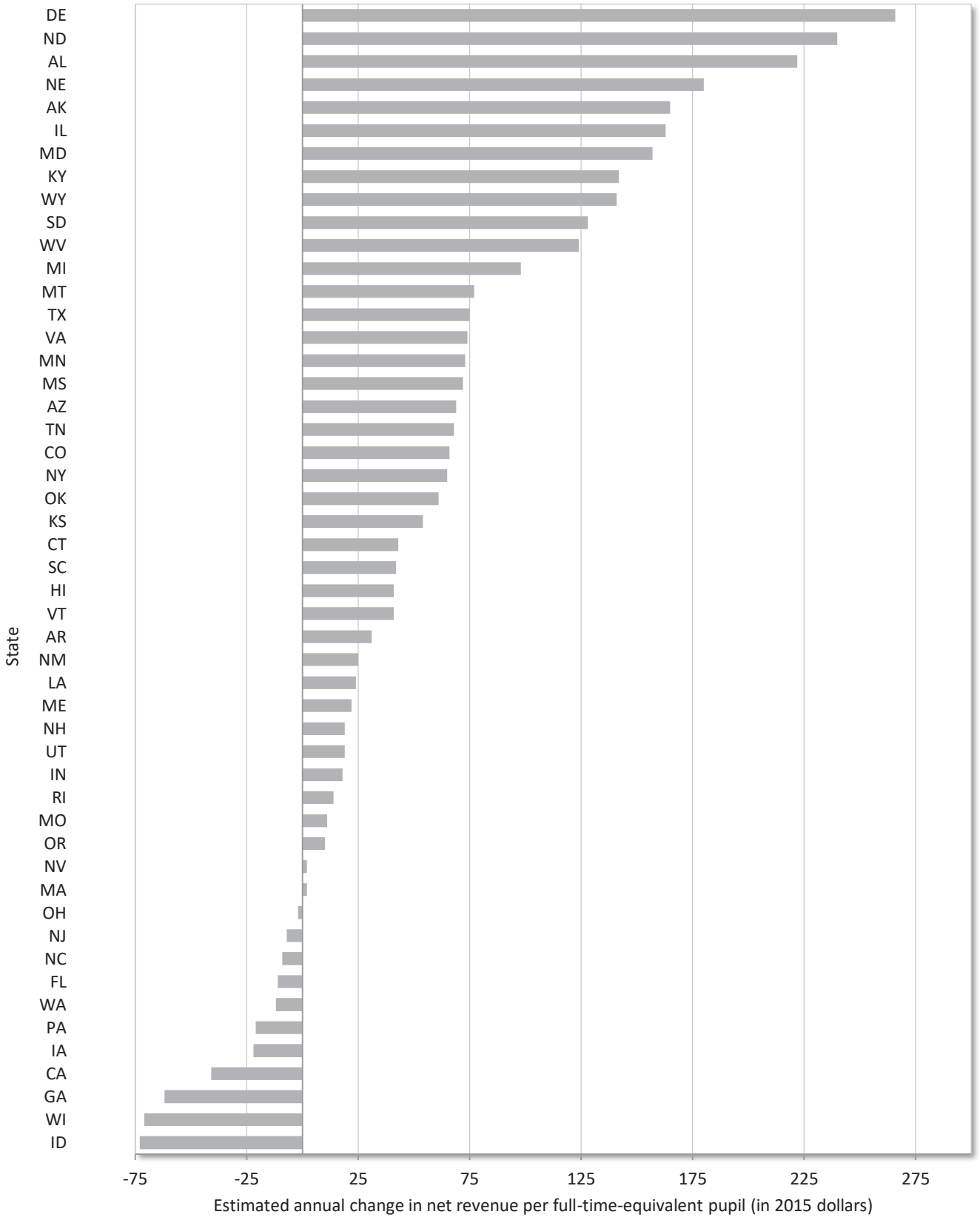
combinations of public appropriations and tuition-and-fee revenue. In addition to showing the general movements of appropriations and tuition and fees, Table 1 displays the average resulting annual net gain or loss in revenue per student for each group, and the average net gain in total revenue.

The large majority of states—31—have seen per student appropriations fall, but their tuition-and-fee revenues have risen at much greater smoothed annual rates, creating an average net change of $63 per student per year. If that seems small, note that this finding is over a 25-year period, and enrollment tended to rise significantly during that time. As a result, average total revenue increases were big for this group: roughly $44 million per state per year.

The next-largest group, encompassing 11 states, saw drops in per student appropriations not equalized by tuition-and-fee revenue increases. This was not the doomsday scenario higher education advocates presumably fear most—decreasing appropriations and falling income through students—but it is the worst scenario that *actually occurred*. Even that, though, requires some perspective: the net loss was only $30 per student per year. Additionally, total revenue actually rose the most for this group, on average by $68 million annually, because of big enrollment increases.

The third-largest grouping of states is the ideal scenario for funding from a school's perspective: both appropriations and tuition-and-fee revenue rising. Six states experienced this, for an average increase of $169 per year. Coupled with enrollment increases, this produced an average revenue boost of $35 million per year.

Figure 5
States by per Pupil Revenue Trend



Source: Author ranking using data from State Higher Education Executive Officers, "State-by-State Wave Charts (XLS)," *SHEF—State Higher Education Finance FY15*, http://www.sheeo.org/projects/shef-fy15.

Finally, only two states, Wyoming and Louisiana, experienced the ideal combination from the vantage point of students: increasing appropriations and declining tuition-and-fee revenue. These relatively small states saw an average revenue increase per student of $83 per year, for an average revenue boost of $15 million per year.

Ranked from biggest net gainer to biggest net loser, Figure 5 shows that Delaware was the top gainer at $266 per student per year and that Idaho came in last, losing $73 per student per year. Even Idaho, though, saw total revenue gains of approximately $8 million per year because of increasing enrollments. Finally, the average state saw roughly 57 percent of per student tuition-and-fee revenue increases cover appropriations decreases.[14] Of course, it is important to keep in mind that many other variables are at play.

The appendix includes the results for all states, with graphs for both appropriations versus tuition-and-fee revenue, as well as total revenue changes, all with linear trend lines. Also included is each state's rank in terms of net change. As the raw data show, neither trend actually changes smoothly, but general directions are fairly clear and linear. That said, when examining the charts for each state it appears that the tuition-and-fee lines tend to be smoother than those for appropriations. Perhaps particularly important, we see that during periods of increasing appropriations, many states' schools either did not reduce their revenue from tuition and fees or else the reduction was appreciably smaller than state increases in the schools' appropriations. This suggests that tuition and fees are on a steadier glide path than appropriations, increasing regardless of appropriations, perhaps because some degree of price inflation is always expected by the public and schools can get away with constant increases.

What all this strongly suggests is that yes, public institutions on a *per pupil basis* have likely raised prices in part to make up for lost direct subsidies. But even on a per student basis, they took in much more revenue than what was needed just to make up for lost appropriation dollars. In the aggregate, schools appear to have seen very large net revenue increases.

OTHER POSSIBLE EXPLANATIONS

Cuts in direct public subsidies, at the very least, fail to explain a big part of skyrocketing college prices. What may explain the rest, and perhaps even tuition-and-fee revenue increases that seem to cover appropriation cuts? A few popular explanations may, on their own or in combination, explain much of the increase in prices and income through students. Indeed, probably all of the explanations explored in this paper play parts in college pricing. Each deserves a full treatment but they are only discussed briefly below.

The Cost Disease

One contention is that higher education is a labor-intensive undertaking that cannot achieve cost efficiencies because of its necessary reliance on human provision. This is essentially Baumol's "cost disease," named after economist William Baumol. Using musical performance as an illustration, he and coauthor William G. Bowen argued that, where the production of many things can become more efficient with technology, you cannot replace players in an orchestra with, say, machines, to decrease costs. Musicians must get pay increases to keep them from choosing employment in industries that can pay more because of technologically improving productivity, causing musical performances to become increasingly expensive relative to other parts of the economy.[15]

There is likely truth to this for higher education—it is indeed labor-intensive—but it is limited. For one thing, class sizes could be increased, enabling the same number of professors to reach more students. Similarly, professorial teaching loads—the number of classes taught per professor—could be raised, again making professors more productive, at least when it comes to teaching. Perhaps most powerful, technology enables professors

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in at least some courses to deliver content to, in theory, millions of people via the Internet, although interactive instruction using tests or online discussions would, of course, greatly reduce those numbers. Labor costs can be reduced in higher education—as is, in fact, the case for the performing arts, in which an orchestra performing Beethoven can now be recorded, or broadcast on television, and reach millions of people.[16]

There is, at best, mixed evidence that colleges are trying to increase productivity, especially in the administrative realm. Student-to-faculty ratios have dropped across postsecondary education, from 15.7 full-time-equivalent students per FTE faculty member in 1993 to 14.8 such students per FTE faculty member in 2013. However, student-to-other-staff ratios, which include administrators, have increased slightly from 8.1 students per administrator to 8.7 students per administrator.[17] Since "other staff" are much more numerous than the faculty, who do the central job of teaching, this improved efficiency could provide significant savings.

The trends in instructional and administrative staffing change when one looks not at full-time-*equivalent* employees, but at *actual* full-time workers. Here we see a trend toward beefing up administrative positions while "adjunctifying" teaching. According to federal data, between 1991 and 2011, full-time faculty increased 42 percent nationally, while the ranks of full-time administrators increased 66 percent.[18] Overall, faculty staffing increased faster than administrative, but that was largely a function of hiring many part-time, relatively low-paid, adjunct professors. What this suggests is that labor costs for instruction—the primary purpose of higher education—have been reduced relative to administrative costs, although the ranks of full-time other employees grew more slowly than faculty or administrative staff.

Robert Archibald and David Feldman, economics professors at the College of William and Mary, are proponents of the idea that cost disease is the primary explanation for rapidly increasing college costs and, as a result, prices. In their book *Why Does College Cost So Much?*, they compare college prices to those in industries such as the health care, dentistry, and legal professions to argue that service industries requiring highly educated workers all suffer from cost disease. Unfortunately, they pay insufficient attention to the ability of schools to cut costs. They assert that measures such as increasing class sizes or professors' teaching loads, forgoing equipment a professor might want, or hiring more adjunct professors would be detrimental to quality, although they see a little hope with online course delivery, mainly for introductory courses.[19] They offer little empirical support for these assertions about quality, probably because little exists: there are essentially no broadly agreed-upon metrics of higher education quality, in large part because there is no broadly accepted measure of student learning. That said, measures of time students spend studying, the amount of time they spend on leisure, and even measures of college graduates' literacy, all suggest significant decreases in the efficiency of producing student learning over the last several decades.[20]

It is also worth noting that many of the industries relying on highly educated workers to which Archibald and Feldman compare higher education have either heavy third-party payments—medical and dental insurance—which is what student aid is, or ways to compel use, such as the law. They also have high barriers to entry that often require a lot of expensive education, meaning college price inflation could play a part in fueling their costs. What these things together suggest is that rising prices in these areas may not be a function of requiring highly skilled labor, but of consumers paying for the services with third-party funds or being forced to consume them. Finally, the manifestation of Baumol's disease—labor costs—is the primary component of the HECA adjustment, which is heavily based on labor costs for white-collar workers. So the inflation measure primarily used in this report likely accounts for much of the cost-disease effect.

The Bennett Hypothesis

While it is likely that cost disease and cuts to per pupil public appropriations play parts in college price inflation, logic and empirical evidence suggest that student aid also plays a significant role—perhaps a very large one. On a simplified level, suppose that you had been buying a hot dog every day for one dollar and it is the only food available. Then suppose someone gave you and everyone else a second dollar to pay for a wiener, which your hot dog purveyor and all other frankfurter vendors knew about. Your dealer's incentive would be to charge you two dollars for the dog, and you would be no worse off paying it. You might also be able to demand some nice-to-have features you would not otherwise have been willing to pay for, such as relish and chili topping. You're not much healthier from your dog—you got what you needed before—but the additional dollar gives you the ability to demand more, while your dog dealer and all his competitors can become more profitable without making you or any other frank eater worse off. But with the resulting rising prices the hot dog benefactor has to increase the amount of available aid to keep hot dogs affordable, and so the cycle repeats, creating a price spiral.

This is essentially the "Bennett Hypothesis," made famous in a 1987 *New York Times* op-ed, "Our Greedy Colleges," by then secretary of education William Bennett.[21] In it, Bennett asserted that federal student aid is counterproductive. Giving students more money to pay for college empowers schools—like our hot-dog vendors—to raise their prices.

Archibald and Feldman cast doubt on the Bennett Hypothesis, but do so by alternating between saying that the hypothesis posits that aid *drives* inflation and *enables* it. Those are two different things: "drives" suggests that aid pushes prices higher, while "enables" suggests that it makes it easier for schools to do what they would like to do anyway. Bennett himself used the term "enabled" and explicitly wrote that aid does not cause inflation. (Bennett did not tackle the notion that aid encourages students to demand more stuff.)

In an article intended to counter the Bennett Hypothesis, Archibald and Feldman argue that colleges do not raise prices in response to aid, but instead try to create incoming classes that maximize the combination of student quality and tuition revenue.[22] But colleges do not operate in a vacuum. They often compete for students with other schools, including to a large extent, as at least one study has substantiated, on frills: amenities such as recreation facilities and fancy food.[23]

In fact, Archibald and Feldman, while saying amenities are not a primary cost driver, agree that colleges must supply them because that is what students—who pay for what they want partially through aid—demand.[24] Today, amenities include on-campus water parks and other seemingly frivolous offerings, often at public institutions.[25] And the sizable increase in full-time administrators suggests that students may be demanding something else that is more extensive than amenities: services, such as counseling, special student centers, entertainment, and so on.

Of course, ever-finer amenities and programming that students demand, and all the things professors think are important, cost money. So the total-revenue and student-quality target that Archibald and Feldman contend dictates pricing is likely always moving out, and it is a target that aid enables schools to hit by allowing students to pay more. Aid does this not just by increasing the funds available to many students, but also by enabling schools to move their own aid funds even to high-income students who have good test scores and would improve a class's academic profile.[26] That, in the long run, enables the increase of the sticker price beyond what even many well-to-do students can pay. Archibald and Feldman do not refute this, and seem to accept the need for ever-more revenue as necessary to improve quality.

What does empirical research find about the Bennett Hypothesis? There are big challenges to conducting such studies, and the research provides no definitive proof for the hypothesis. But when coupled with logic,

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and the ever-escalating need for revenue to improve nebulous quality and meet student demands, the case for the Bennett Hypothesis is powerful.

Foremost among the challenges of empirical work is controlling for the effects of many different variables in order to isolate aid, including whether an institution is public or private, for-profit or nonprofit, selective or nonselective; whether the aid is a Pell Grant, loan, or tax credit; and more. Indeed, a National Center for Educational Statistics study that is often cited as refuting the Bennett Hypothesis states that data and numerous other problems mean that ultimately, empirical research can probably neither prove nor disprove the hypothesis.[27]

That said, research has looked at changes such as increases in tuition rates following increases in federal student loan maximums. These sorts of analyses have suggested that increased aid fuels college price inflation even when controlling for public appropriations. Economists Grey Gordon and Aaron Hedlund recently found that the effect of aid swamps any possible effect of public appropriation cuts or cost disease.[28] Currently 13 empirical studies have found that at least some part of student aid is captured by colleges either by charging higher prices or by substituting for other funding, thus failing to fully help the students it was intended to assist.[29]

Finally, state cuts may be, at least in part, enabled by the bountiful availability of federal student aid. Many state policymakers may have concluded that it makes little sense to greatly increase their higher education spending, especially in tough budgetary times, when federal aid can supply the funds. No one would expect policymakers to admit this—who wants to be seen as putting more of the college burden on the backs of the students?—but logic and some empirical research suggest it may be the case.[30] Indeed, SHEEO characterizes state higher education spending as the budgetary "balance wheel," at least in bad economic times, because "higher education funding reductions can be offset…with money from tuition increases."[31] In other words, federal aid may not just cover appropriation cuts after the fact; it may encourage policymakers to cut state and local funding.

Endless Revenue Desire

Aid almost certainly fuels inflation, but something else drives it: colleges—and the people in them—want as much revenue as possible. Access to federal dollars through student grants, loans, and other aid expands what they can grab. It is not that people in colleges are rapaciously greedy; it is that with more money, they can do many things they think are valuable, including starting new academic programs, erecting new buildings, hiring more faculty and administrators, attracting better students, and raising employee pay. Aid can also insulate schools from having to make efficiency-producing but difficult decisions, such as cutting programs that attract few students or moving from face-to-face classes to online offerings that could serve far more students per faculty member. This is consistent with the "revenue theory of costs," enunciated by longtime college president Howard Bowen, which essentially stipulates that colleges will raise every dollar they can and spend every dollar they raise.

Public institutions' prices have probably been less subject to the Bennett Hypothesis than those of private colleges. Public colleges' subsidy comes much more through state and local governments, and those governments often have appreciable say over tuition levels. Still, because public institutions operate within the overall higher education marketplace, they largely face the same competitive and quality pressures as other institutions and hence will, over time, be inclined to take in as much revenue as they can regardless of state funding, including through tuition. They may also indirectly drive prices in other postsecondary sectors, providing things partially through direct subsidies for which other schools have to charge students. The effect of the cost of a new water park at a public university, for instance, is muted because students

pay a relatively low overall price thanks to significant direct public subsidies. A private institution, especially without a sizable endowment, cannot muffle those costs to nearly the same extent.

Bowen's is a relatively simple theory, but also one that makes sense: human beings can always think of things to do with more money, and working at a university does not change that. What is different in higher education from most other industries is that someone other than the customer—who would like to keep as much of her own money as possible—is, to a large degree, paying. Much of the counterbalance to sellers charging high prices is gone.

CONCLUSION

Per pupil state and local appropriations for public higher education have been on a downward trend over the last 25 years, although in most states that trend has been interrupted many times as the business cycle has fluctuated and public revenues and enrollment have risen and fallen. Total state and local spending, however, has been in an upward trend, with levels rising by roughly $585 million per year, although again the trend includes appreciable fluctuations. Ultimately, there has been no massive disinvestment in direct public support for higher education.

Even with rising total appropriations, have declining per pupil allocations necessitated higher college prices? The data suggest that, in the average state, somewhat more than half of increases in public college revenue derived from tuition and fees have covered decreased per pupil appropriations. That may be a straightforward case of aid compensating for appropriation cuts that state and local policymakers would have made regardless of aid. But it is also quite possible that the availability of federal student aid inspired those cuts: state policymakers knew that if they cut appropriations, students—largely through federal aid—could make up the difference.

The potentially deleterious effect of aid does not end with encouraging the substitution of federal for state dollars. Public institutions in most states have increased tuition-and-fee revenue per student either in addition to rising per pupil appropriations (6 states) or faster than appropriations dropped (31 states). In other words, colleges have done more than just make up for lost funding. Ultimately, only 11 states saw tuition-and-fee revenue not rise in excess of appropriations cuts. And much of the reason for decreasing per pupil appropriations was significantly increasing enrollment, as opposed to tight-fisted states. The result was that in no state did public institutions fail to experience overall increases in total revenue from appropriations and tuition and fees, and some increases were quite large. And, of course, state and local funding cuts would have a negligible effect on private institutions, which receive very little direct state and local subsidization and yet have seen major price inflation.

By all indications, the state of higher education financing over the last quarter-century is not how it has been portrayed: institutions treading water just to stay financially afloat as state and local governments have withdrawn their support. Most states have seen their schools do better than that on a per pupil basis, and all have seen significant increases in total revenue. What may well be enabling much of this is federal student aid, and colleges taking not just whatever they need, but whatever they want.

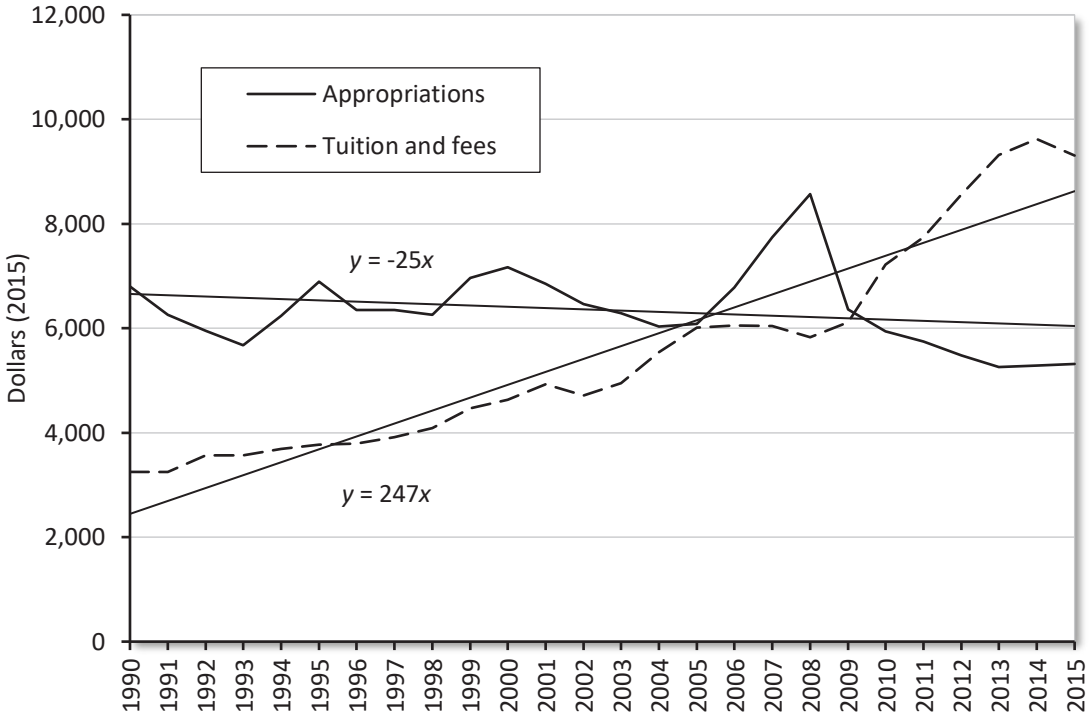
"What is different in higher education from most other industries is that someone other than the customer is, to a large degree, paying."

APPENDIX

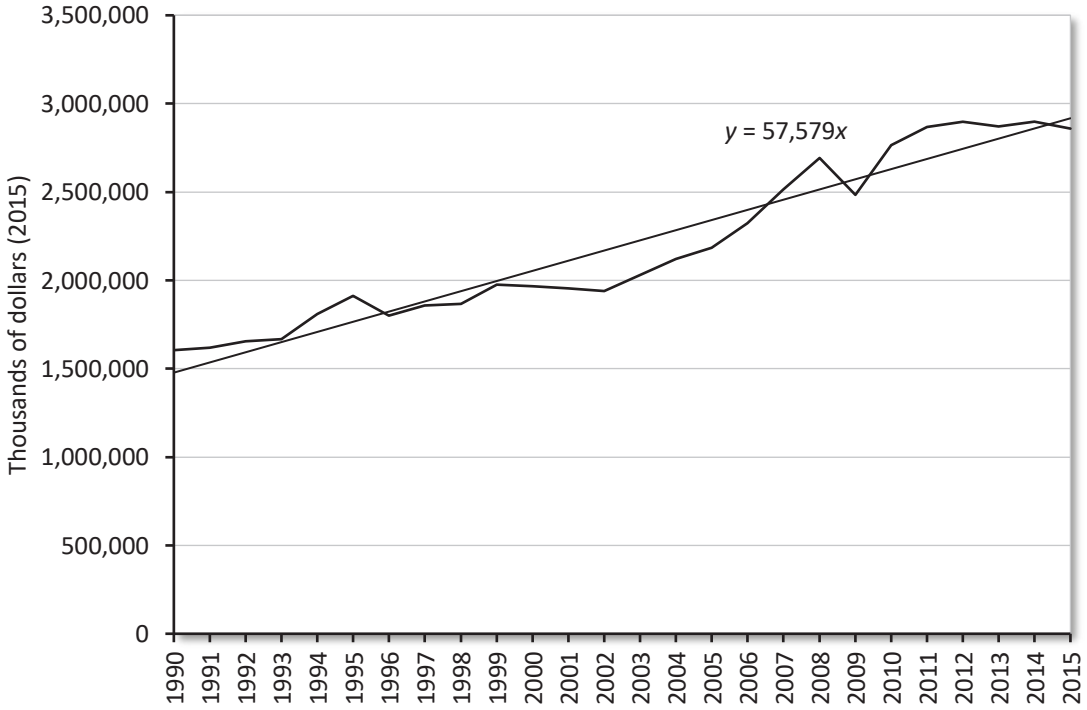
ALABAMA

Net Annual per Pupil Change: $222 Net Change Rank: 3

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



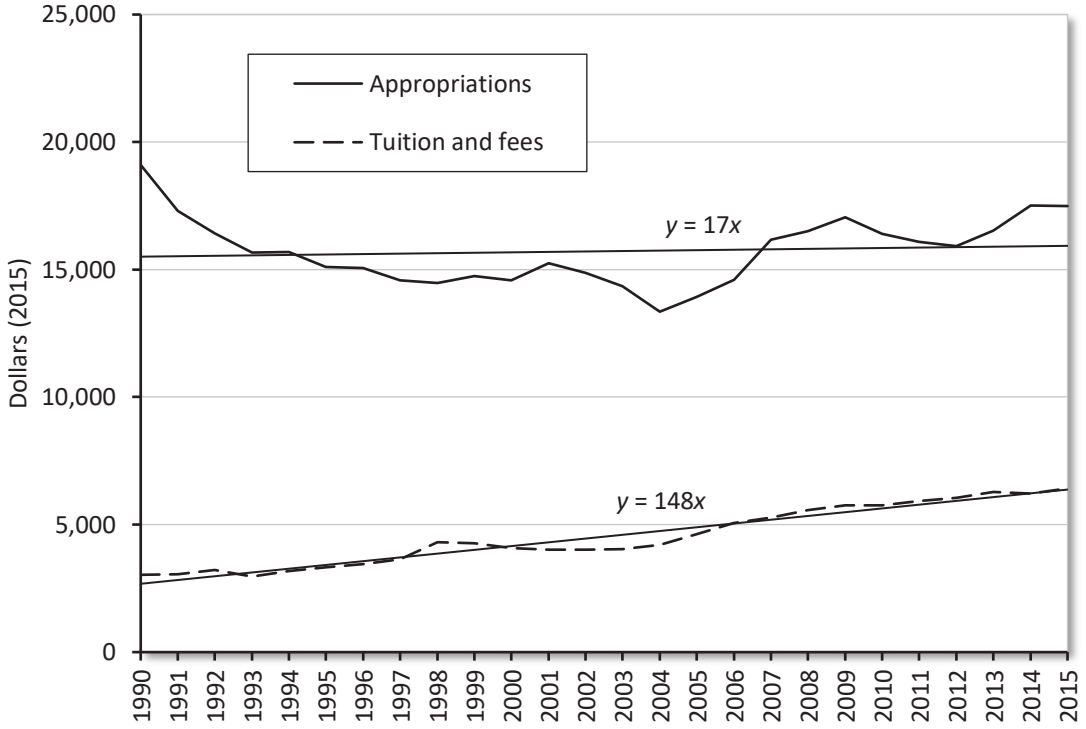
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



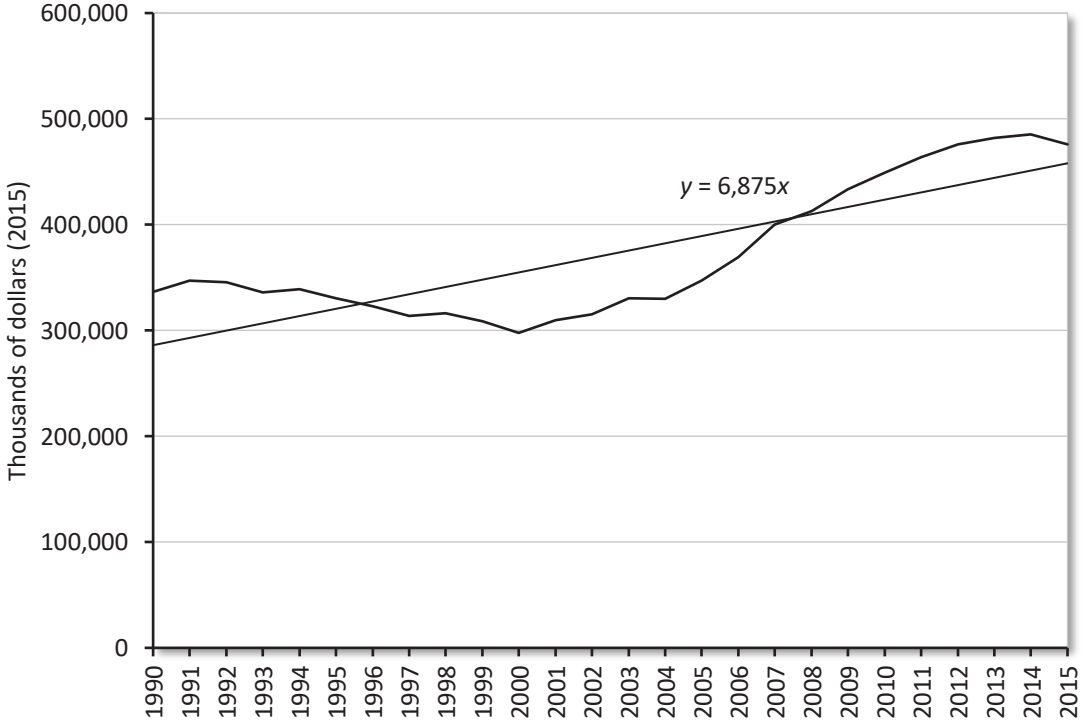
ALASKA

Net Annual per Pupil Change: $165 Net Change Rank: 5

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



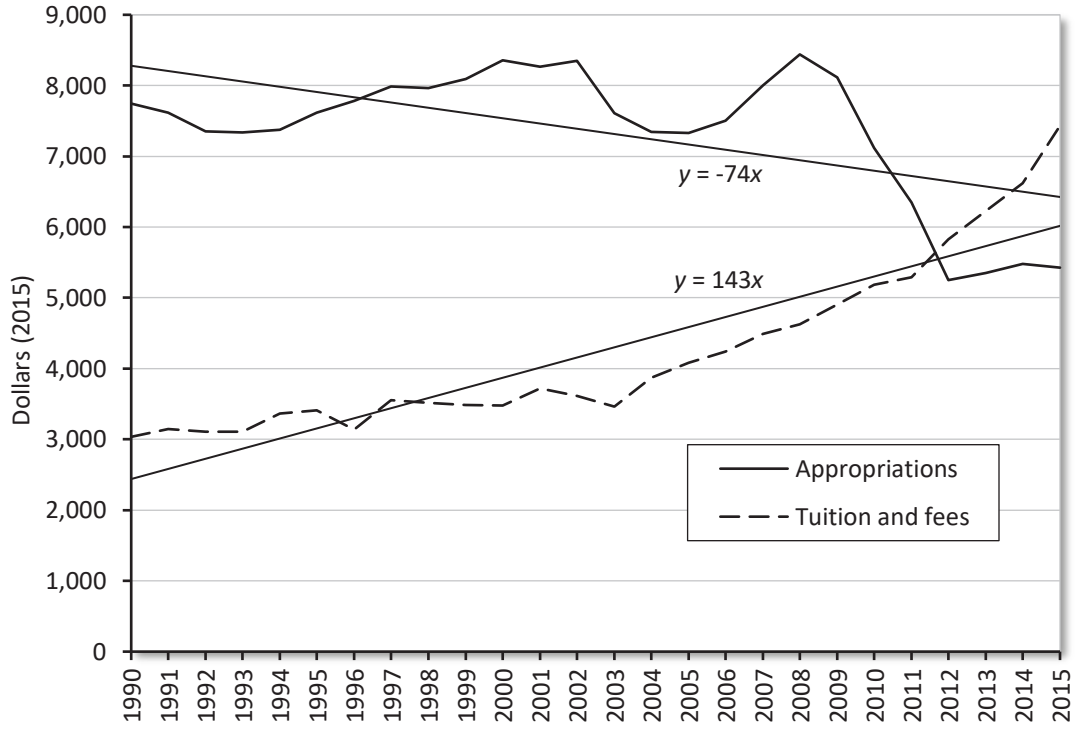
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



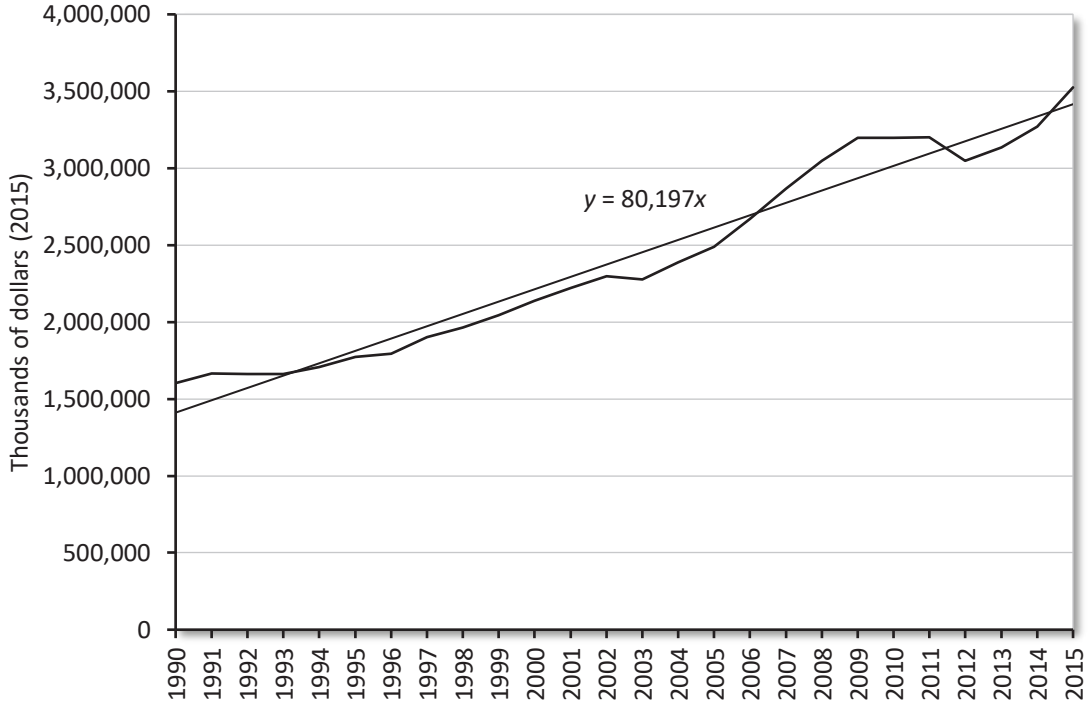
ARIZONA

Net Annual per Pupil Change: $69 Net Change Rank: 18

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



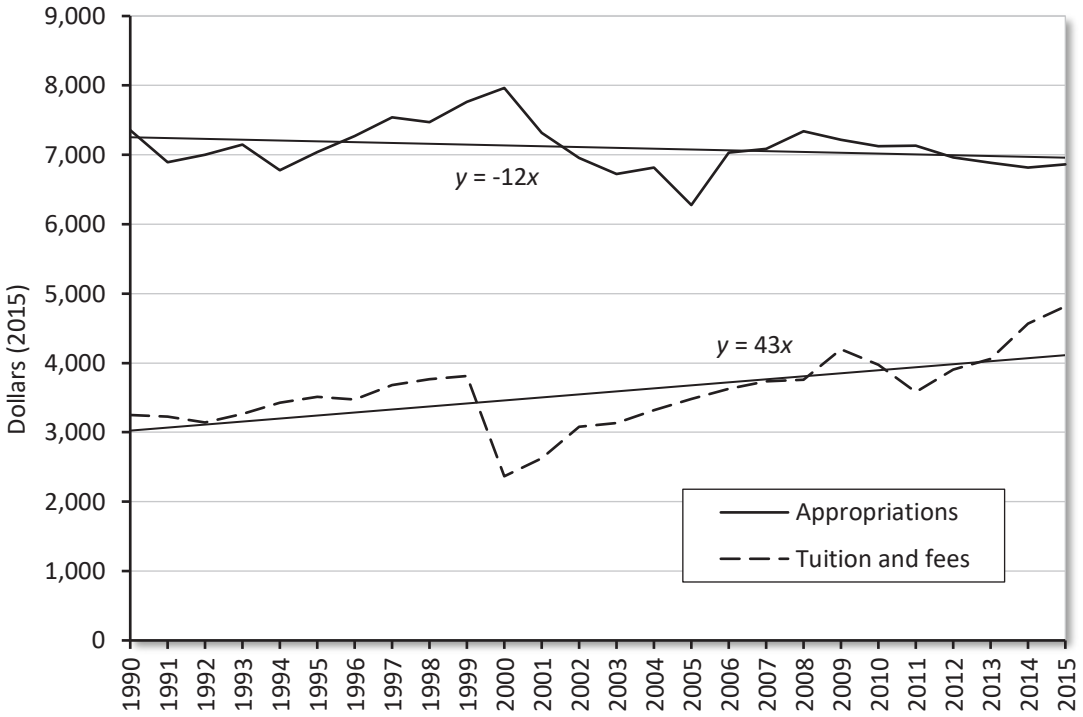
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



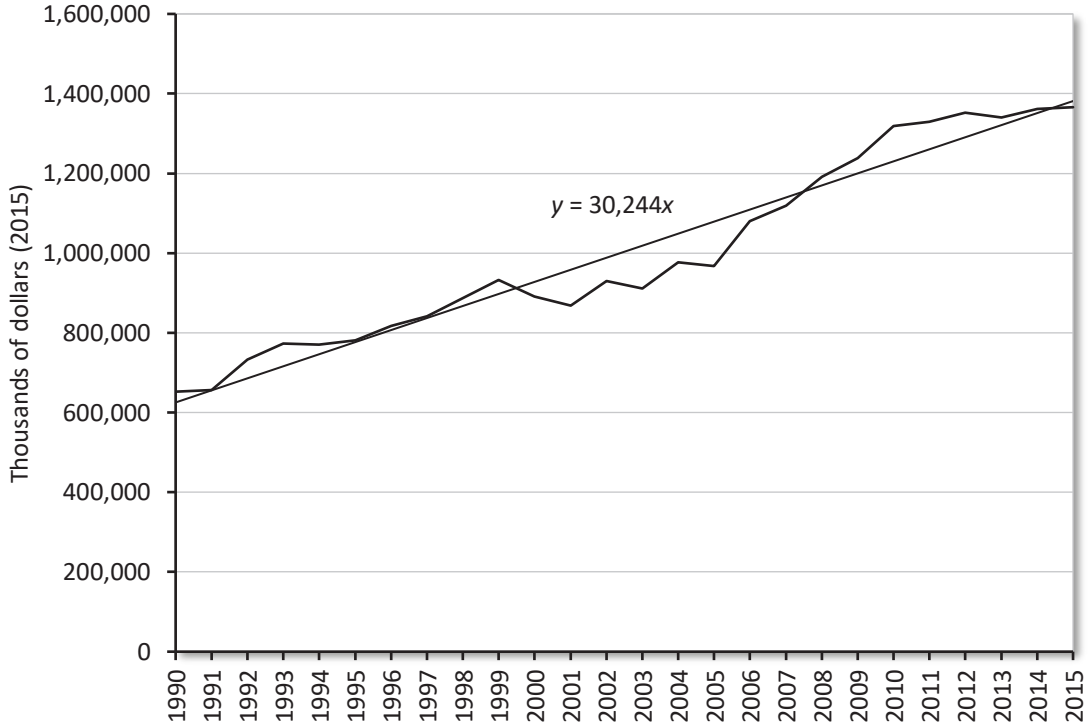
ARKANSAS

Net Annual per Pupil Change: $31 Net Change Rank: 28

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



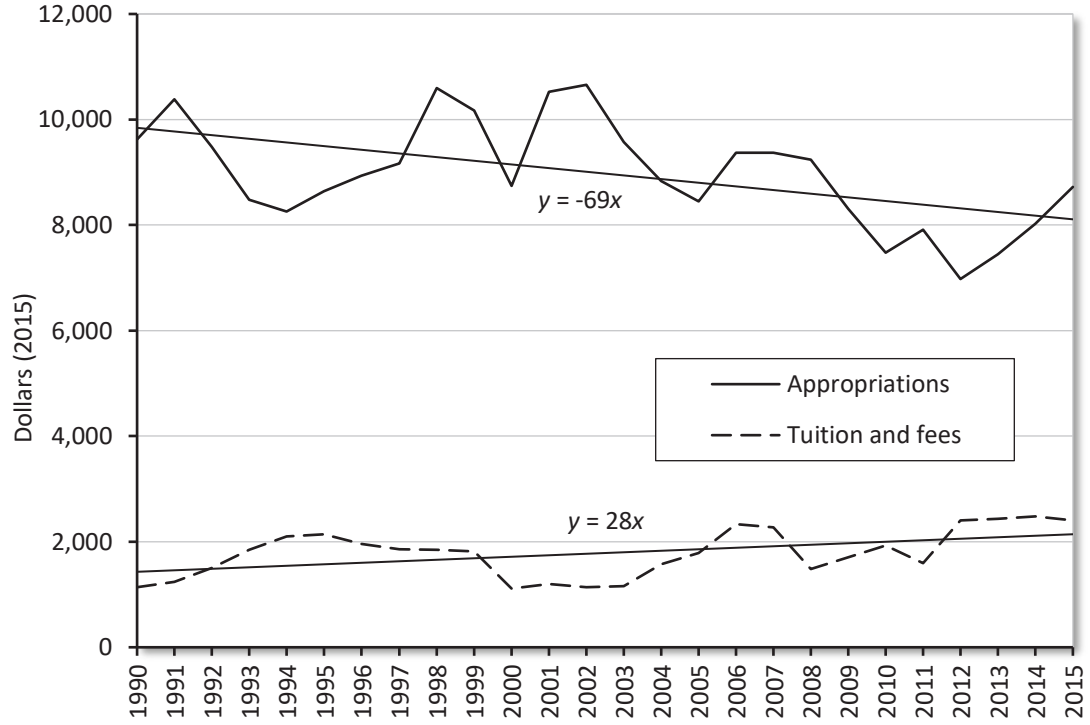
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



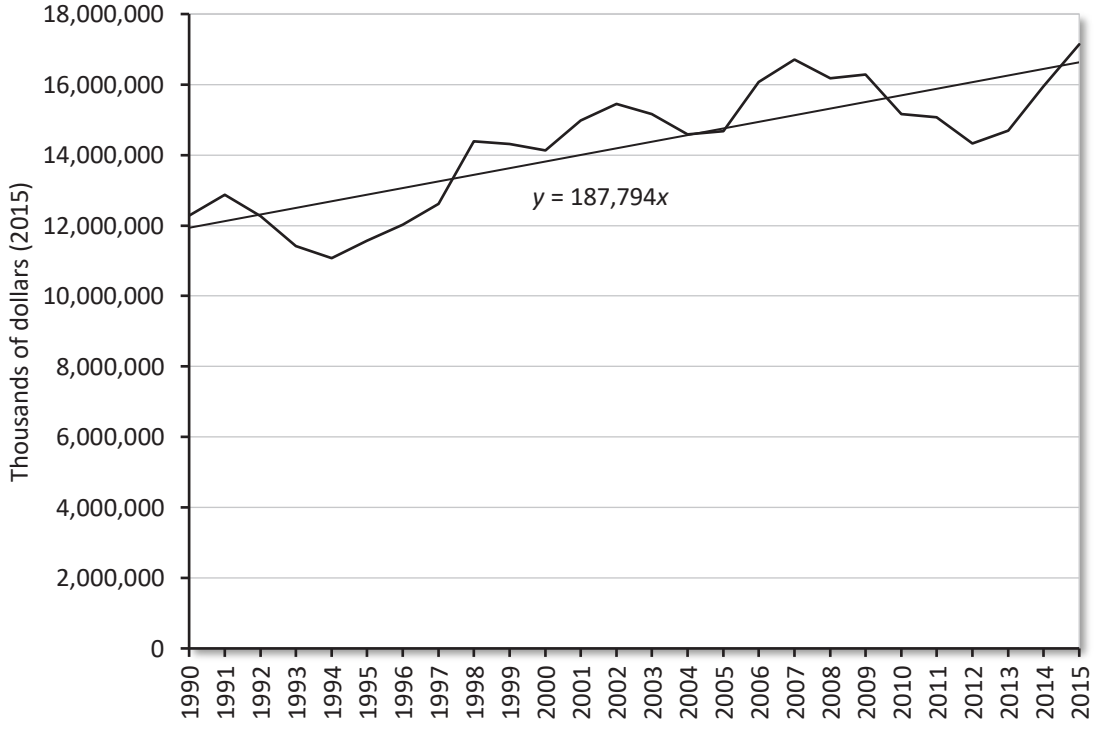
CALIFORNIA

Net Annual per Pupil Change: -$41 Net Change Rank: 47

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



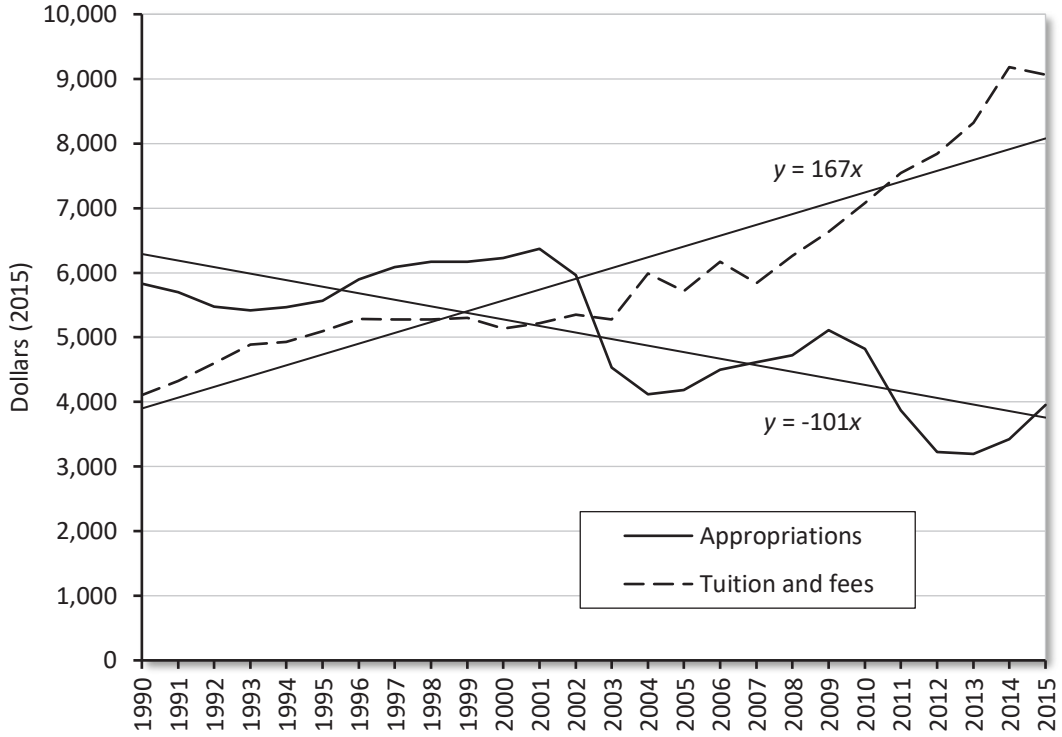
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



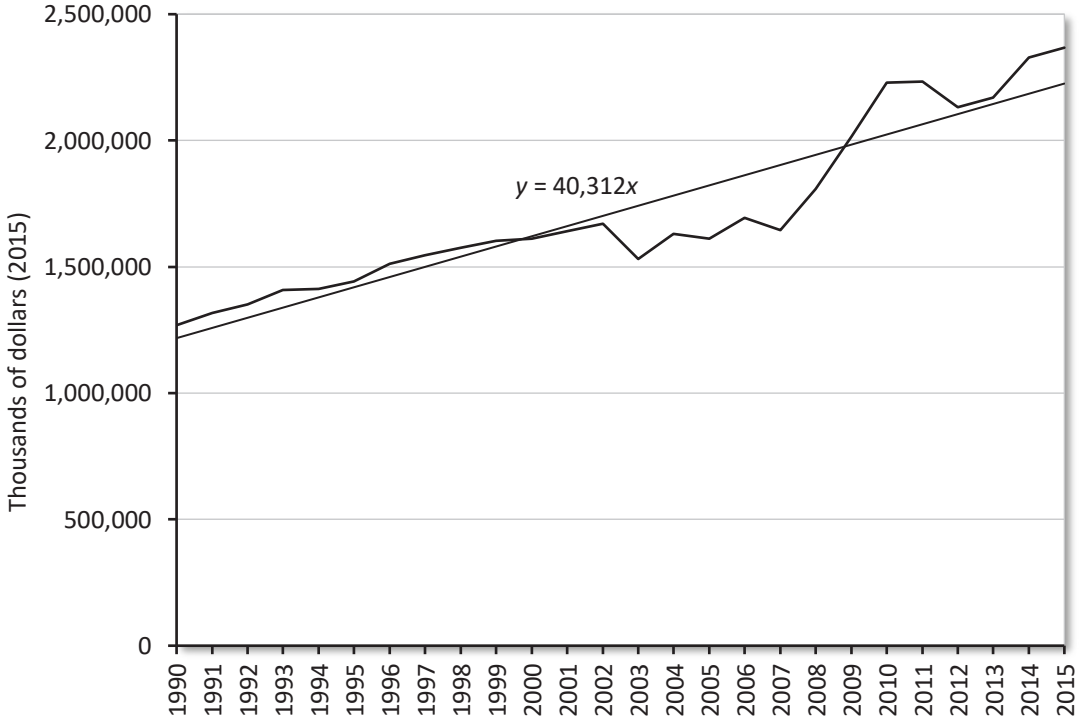
COLORADO

Net Annual per Pupil Change: $66 Net Change Rank: 20

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



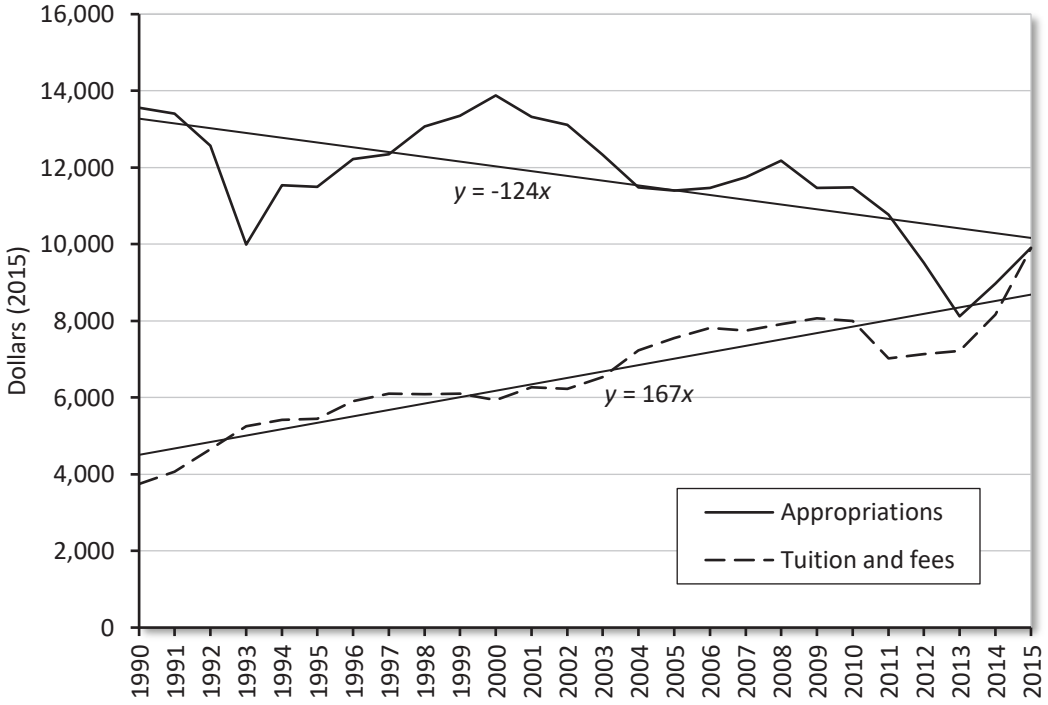
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



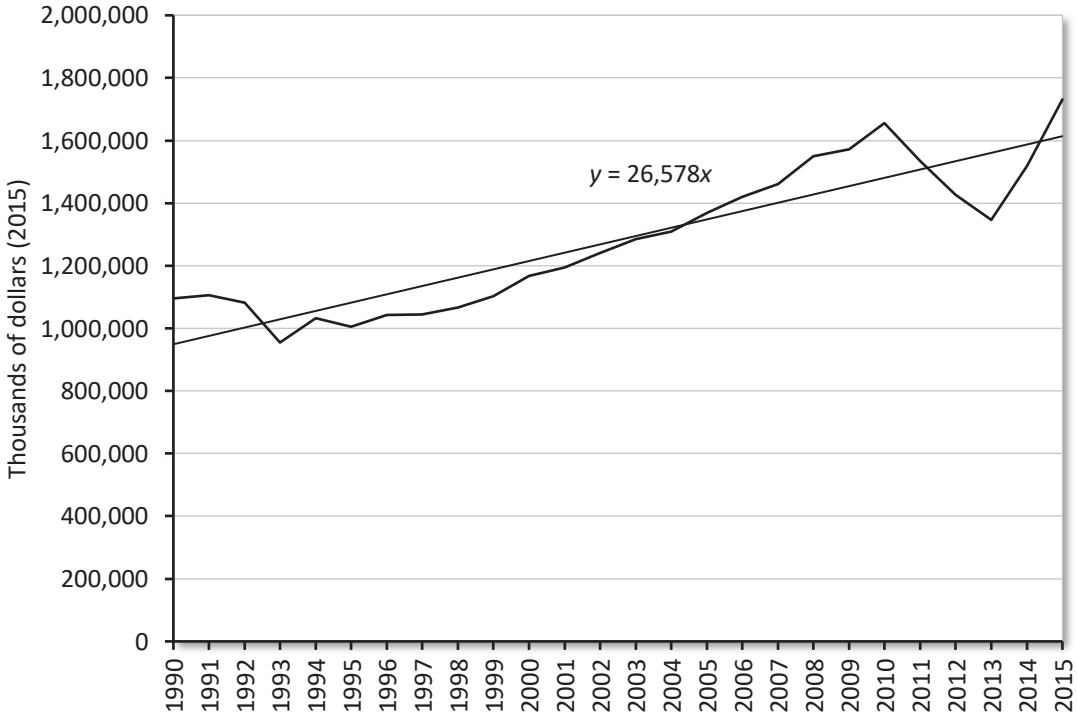
CONNECTICUT

Net Annual per Pupil Change: $43 Net Change Rank: 24

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



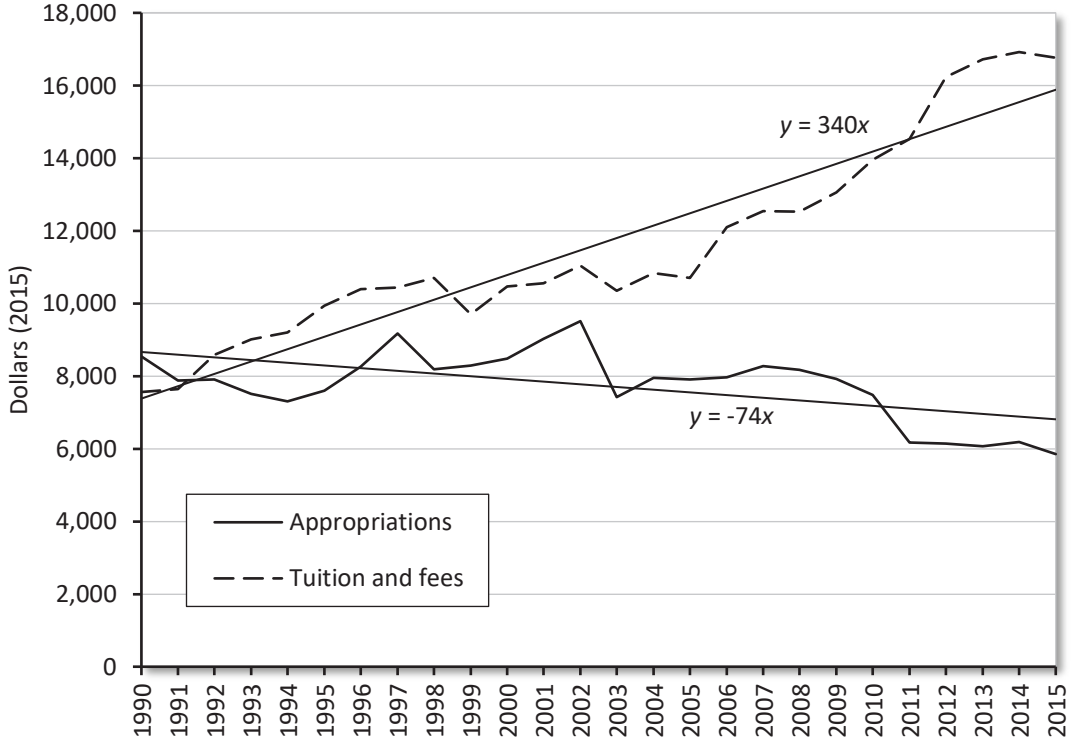
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



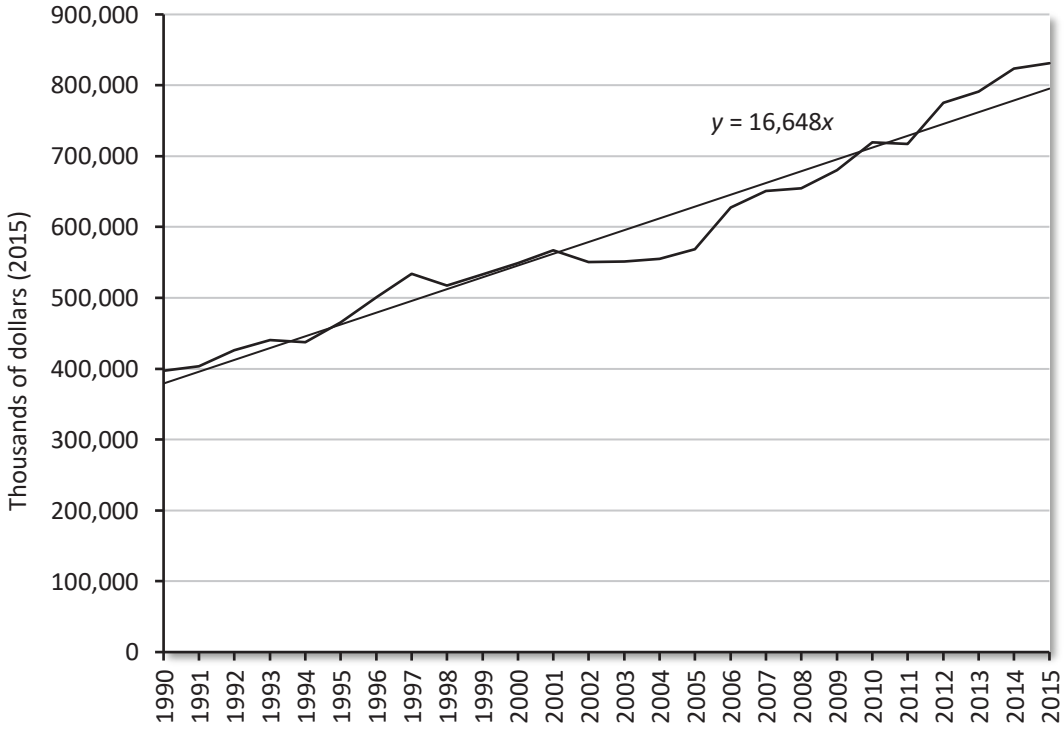
DELAWARE

Net Annual per Pupil Change: $266 Net Change Rank: 1

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



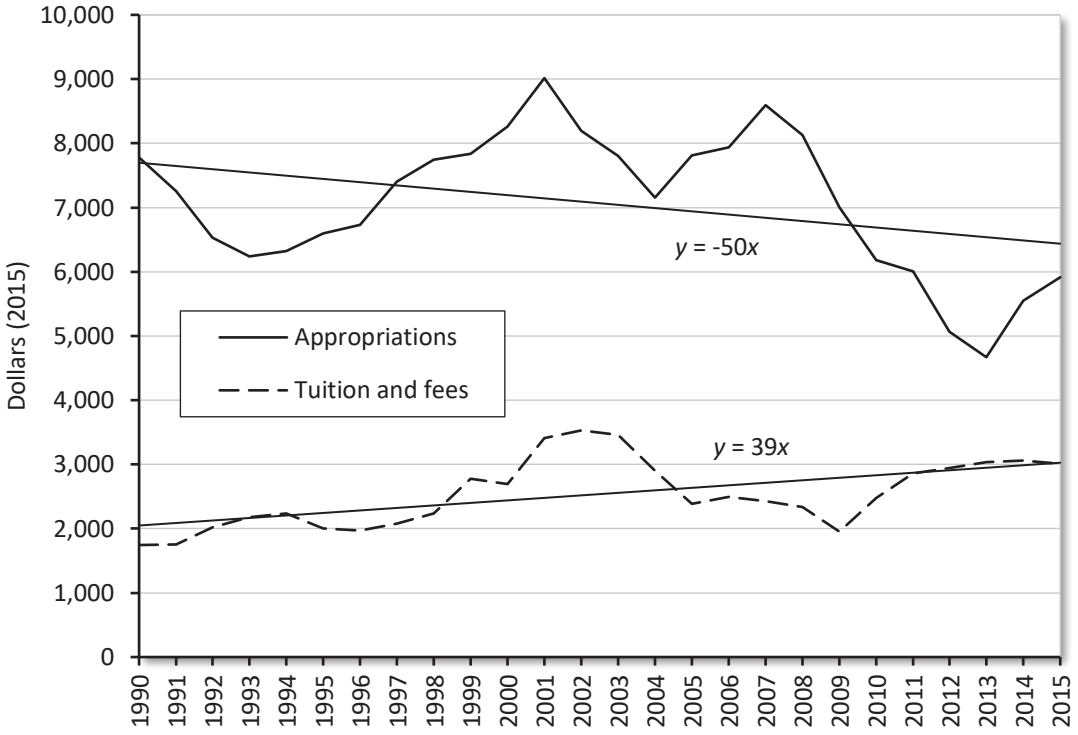
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



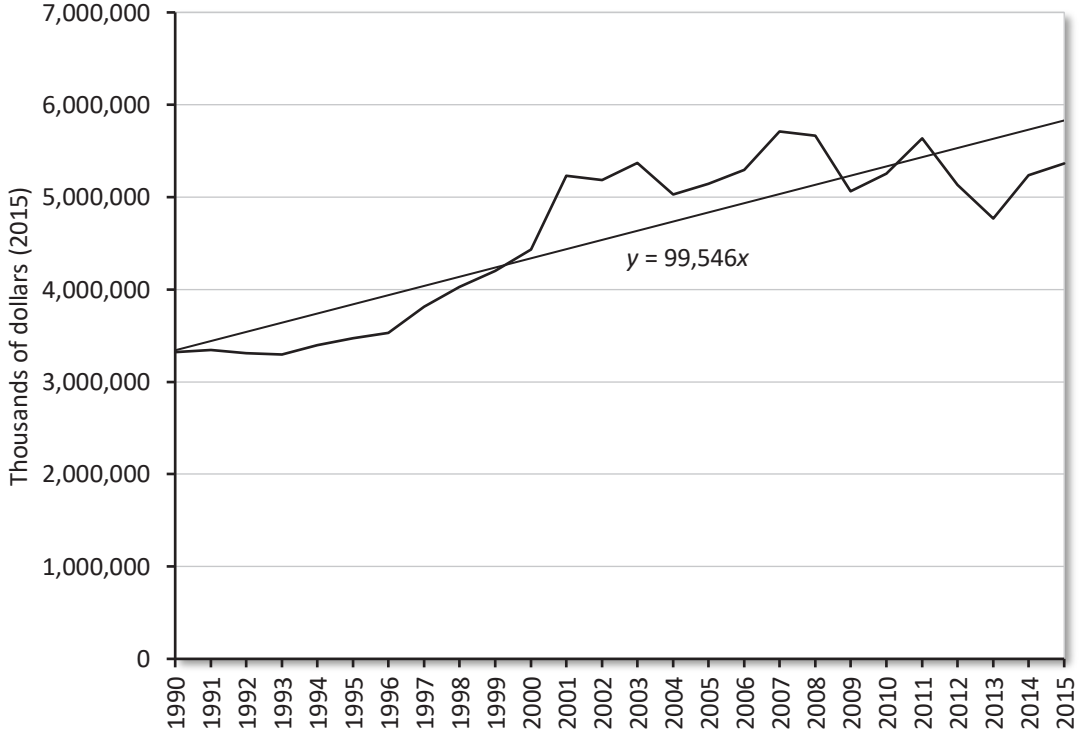
FLORIDA

Net Annual per Pupil Change: -$11 Net Change Rank: 43

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



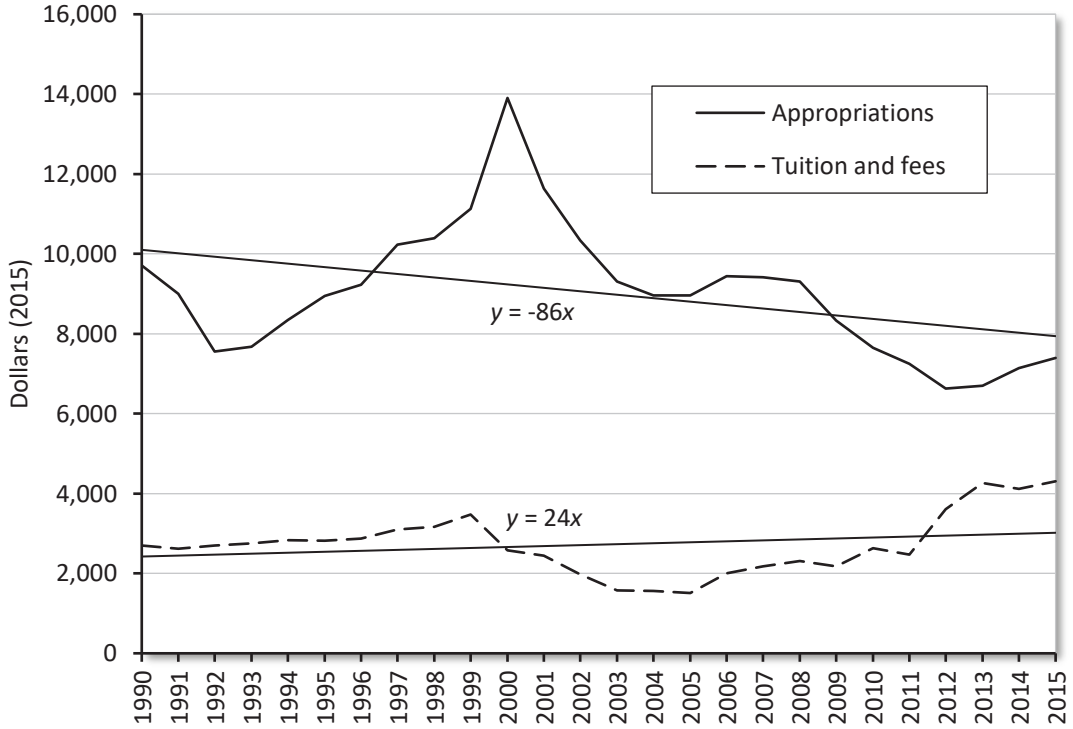
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



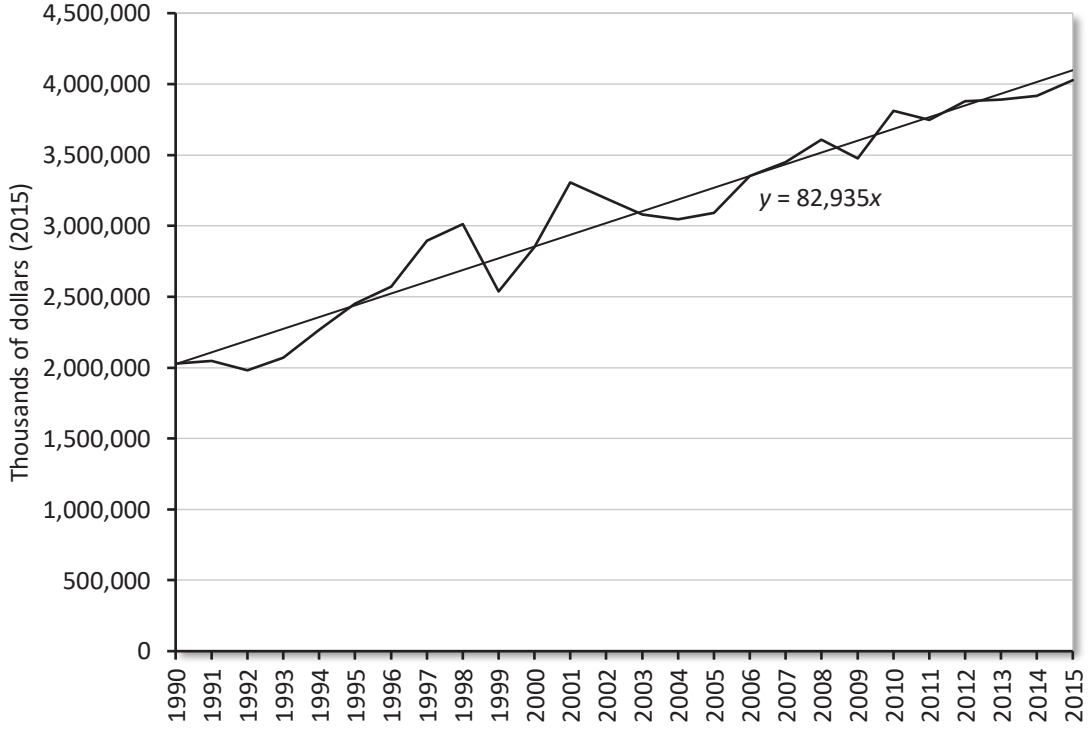
GEORGIA

Net Annual per Pupil Change: -$62 Net Change Rank: 48

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



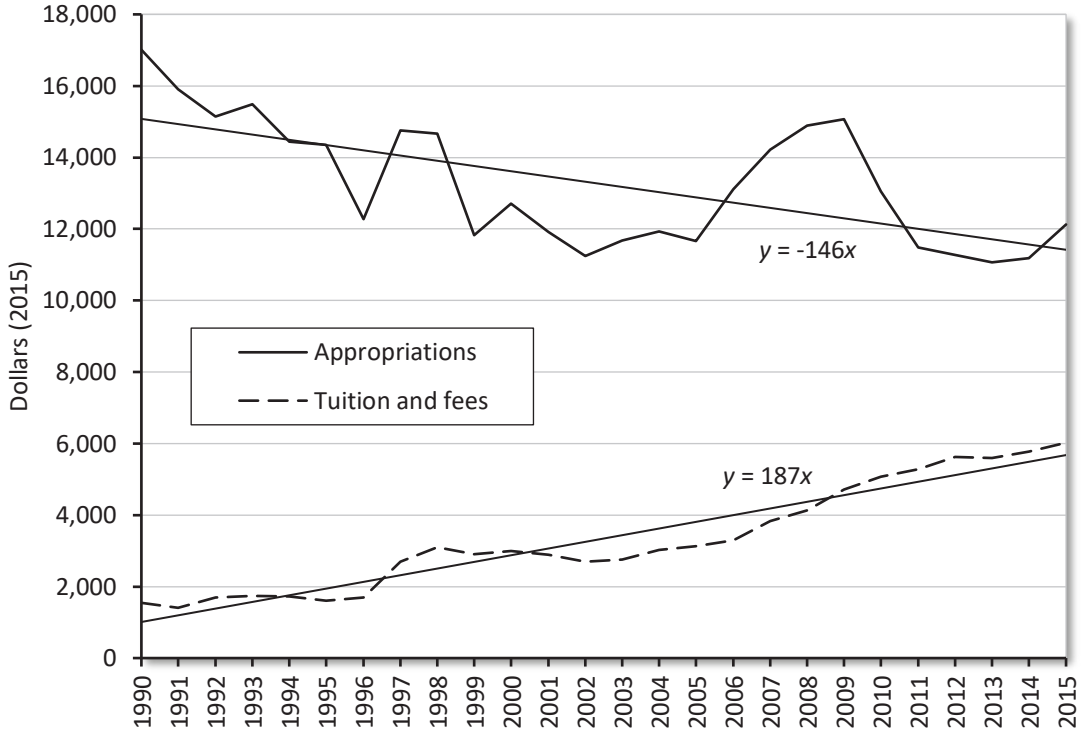
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



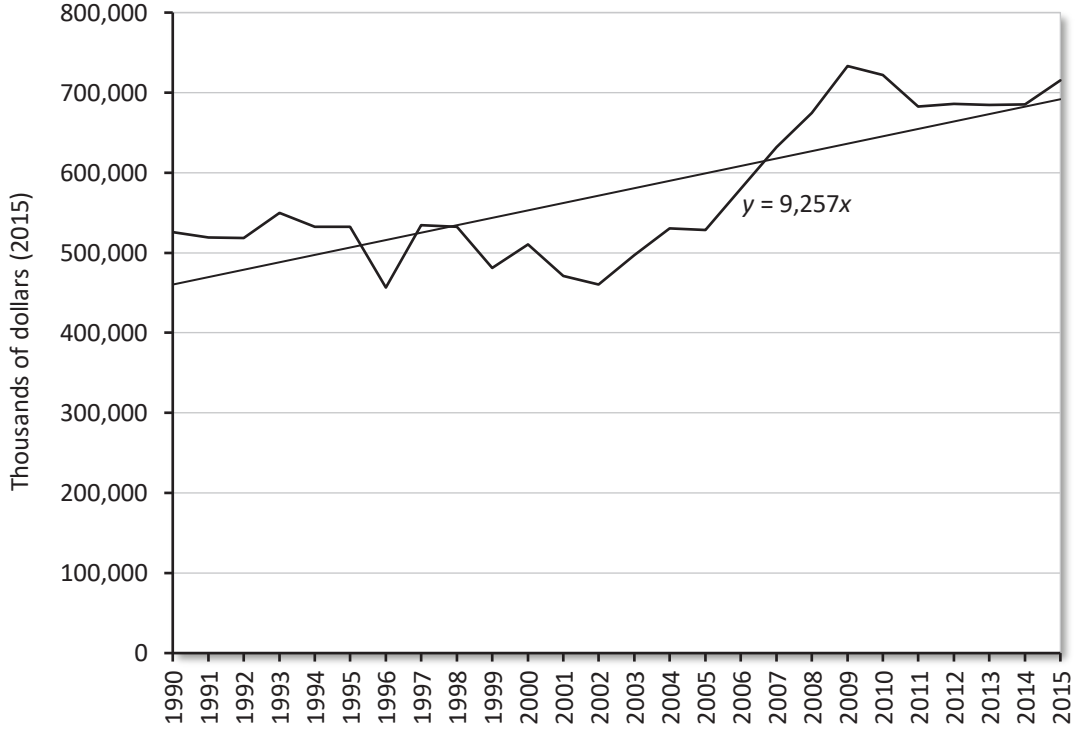
HAWAII

Net Annual per Pupil Change: $41 Net Change Rank: Tied 26

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



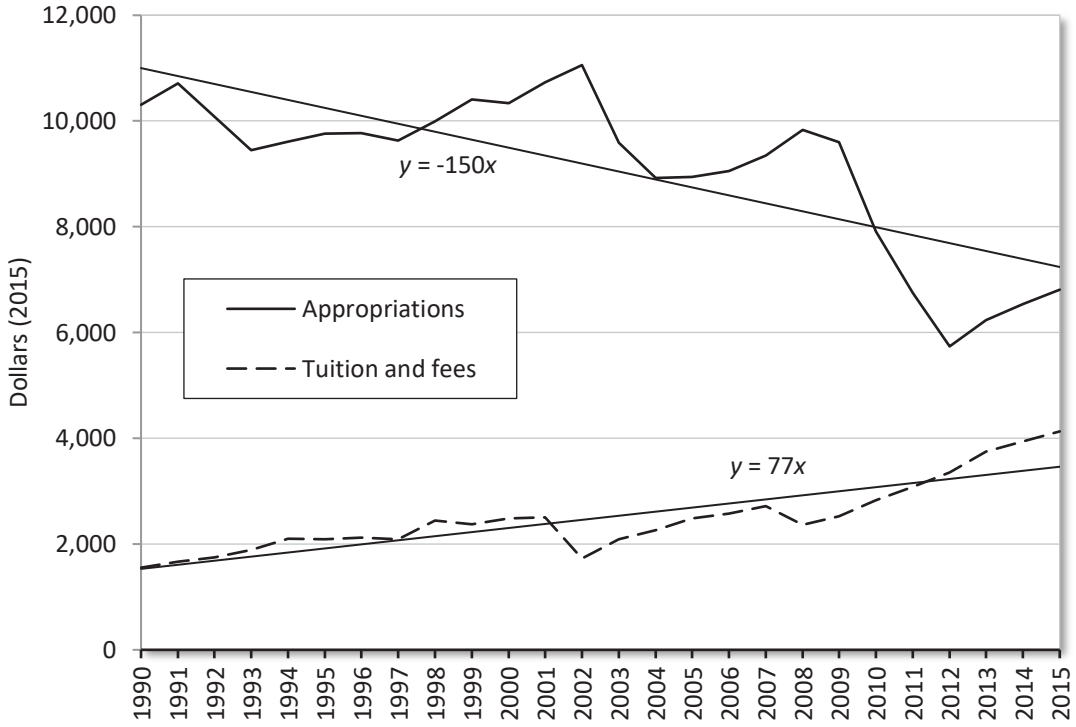
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



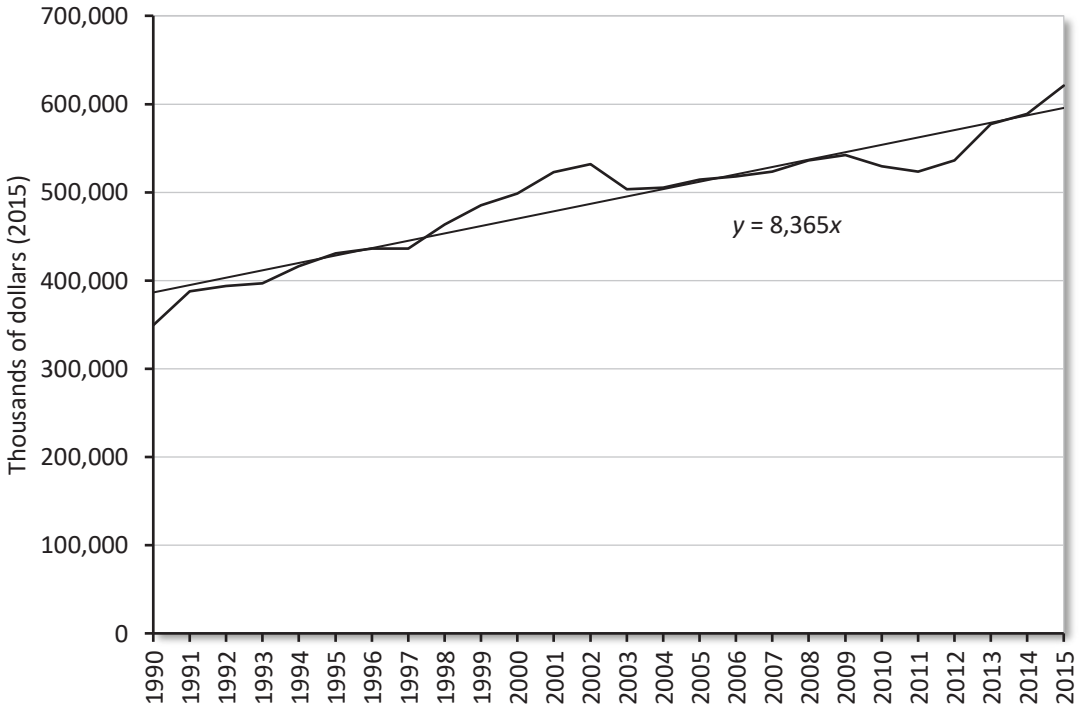
IDAHO

Net Annual per Pupil Change: -$73 Net Change Rank: 50

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



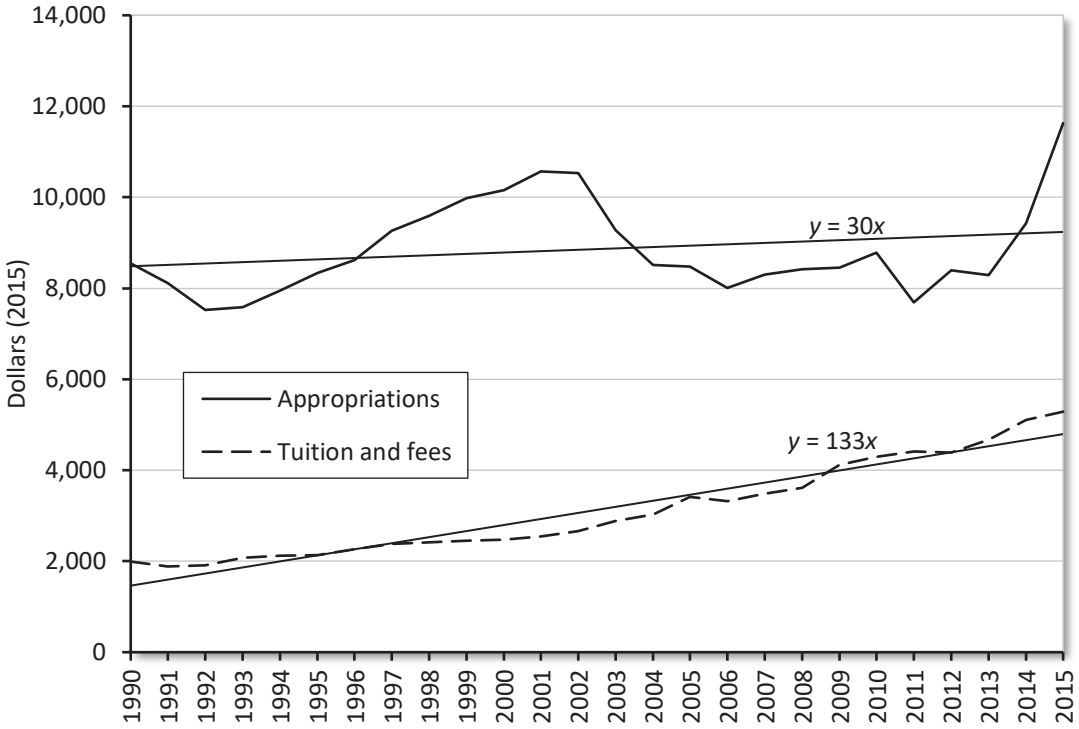
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



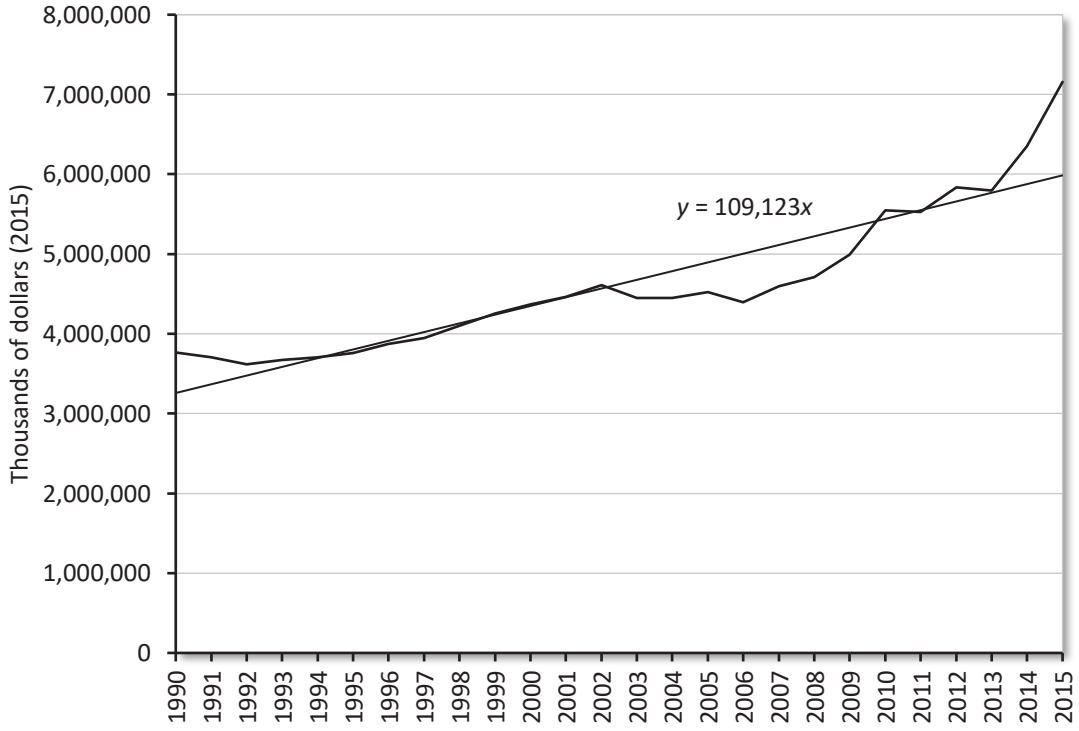
ILLINOIS

Net Annual per Pupil Change: $163 Net Change Rank: 6

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



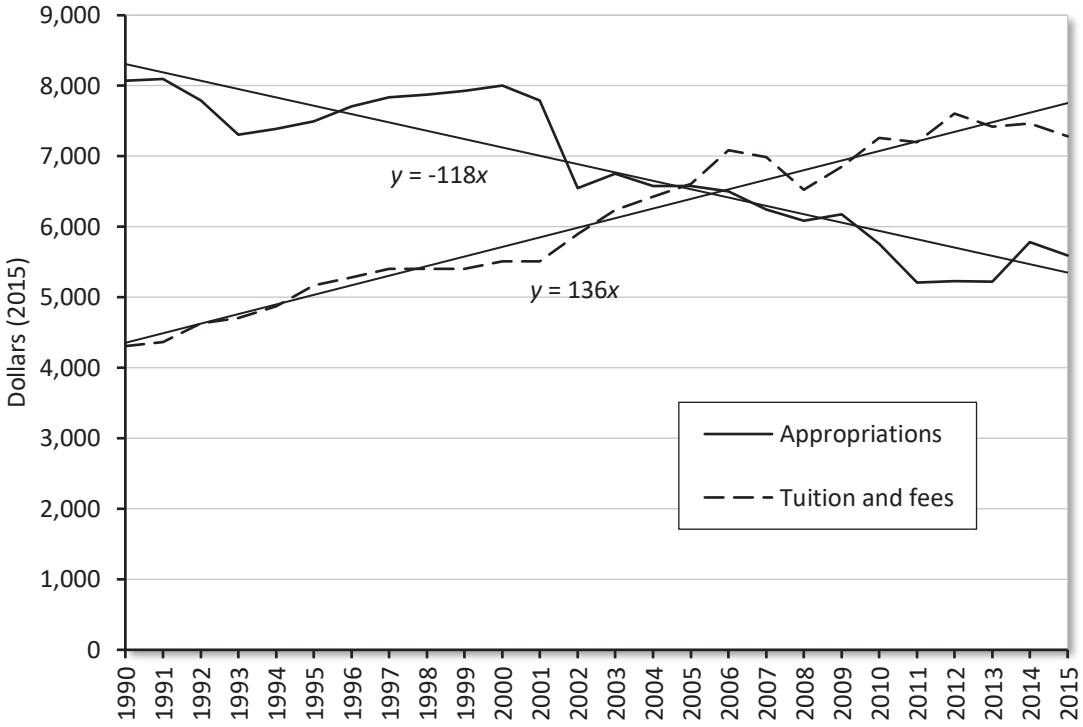
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



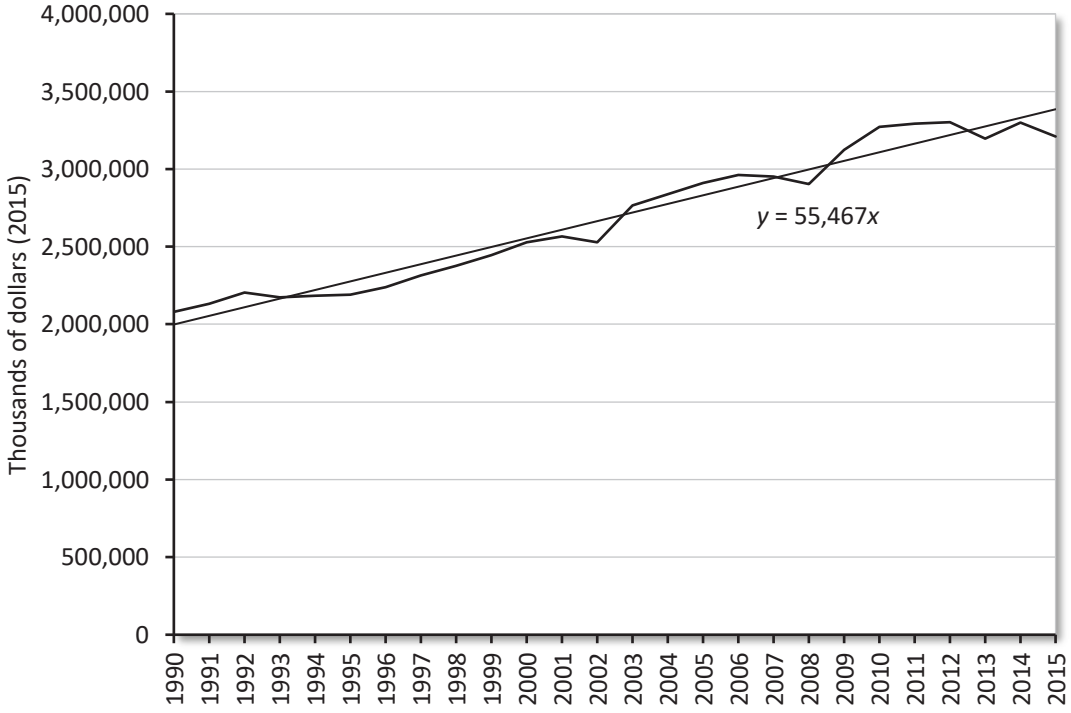
INDIANA

Net Annual per Pupil Change: $18 Net Change Rank: 34

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



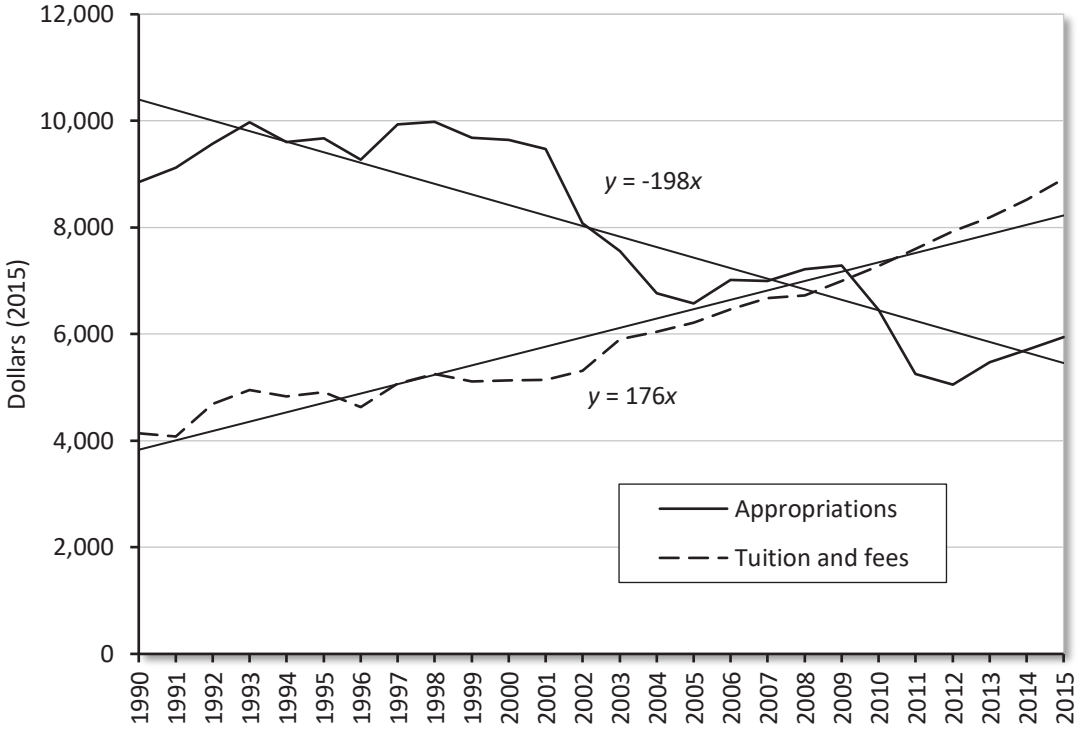
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



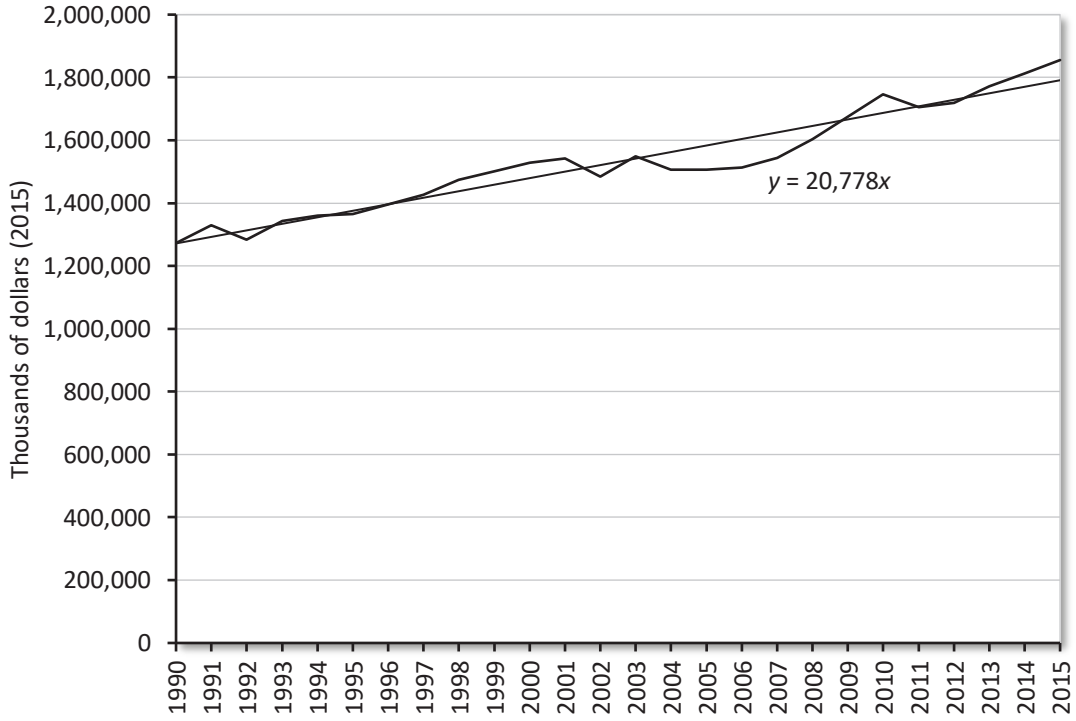
IOWA

Net Annual per Pupil Change: -$22 Net Change Rank: 46

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



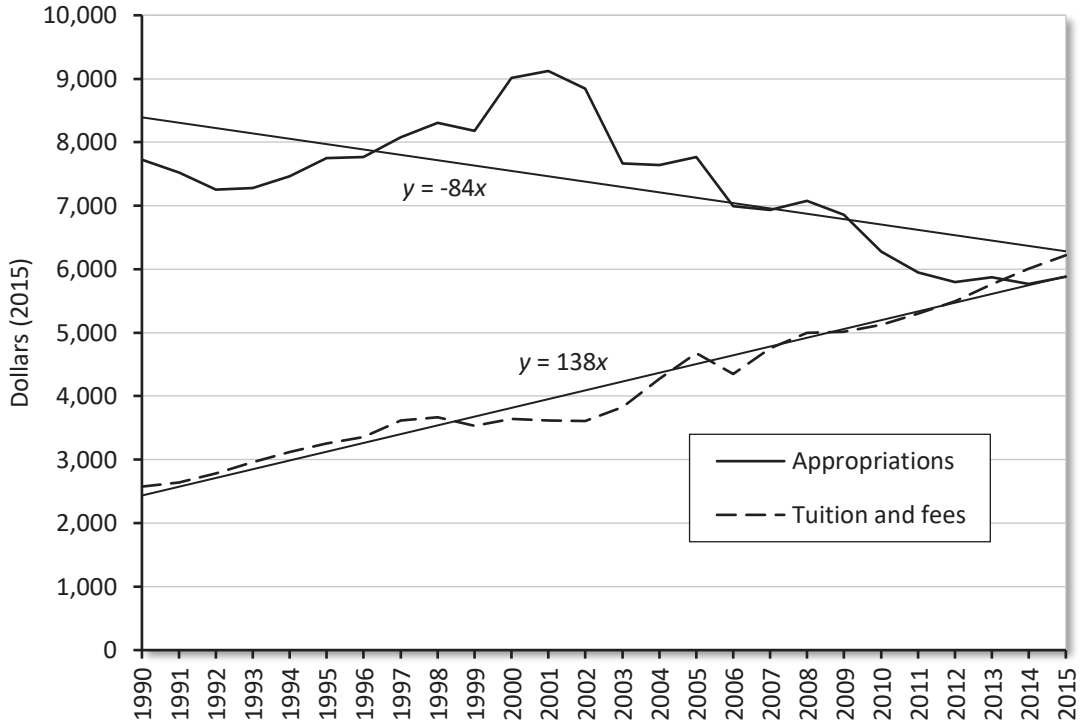
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



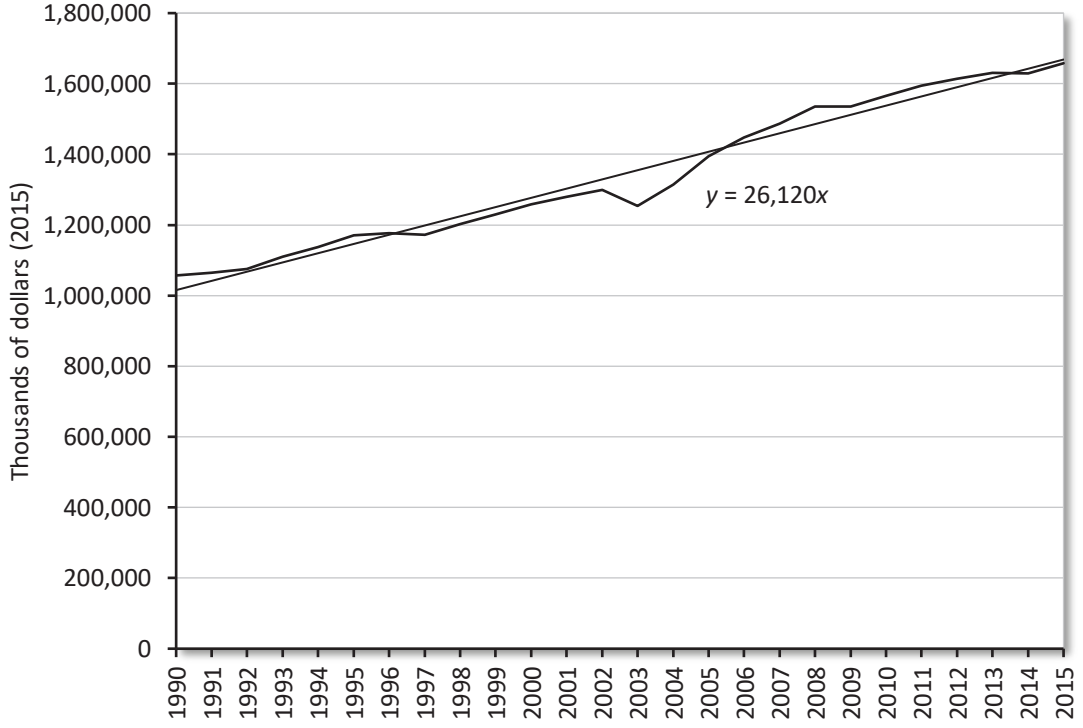
KANSAS

Net Annual per Pupil Change: $54 Net Change Rank: 23

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



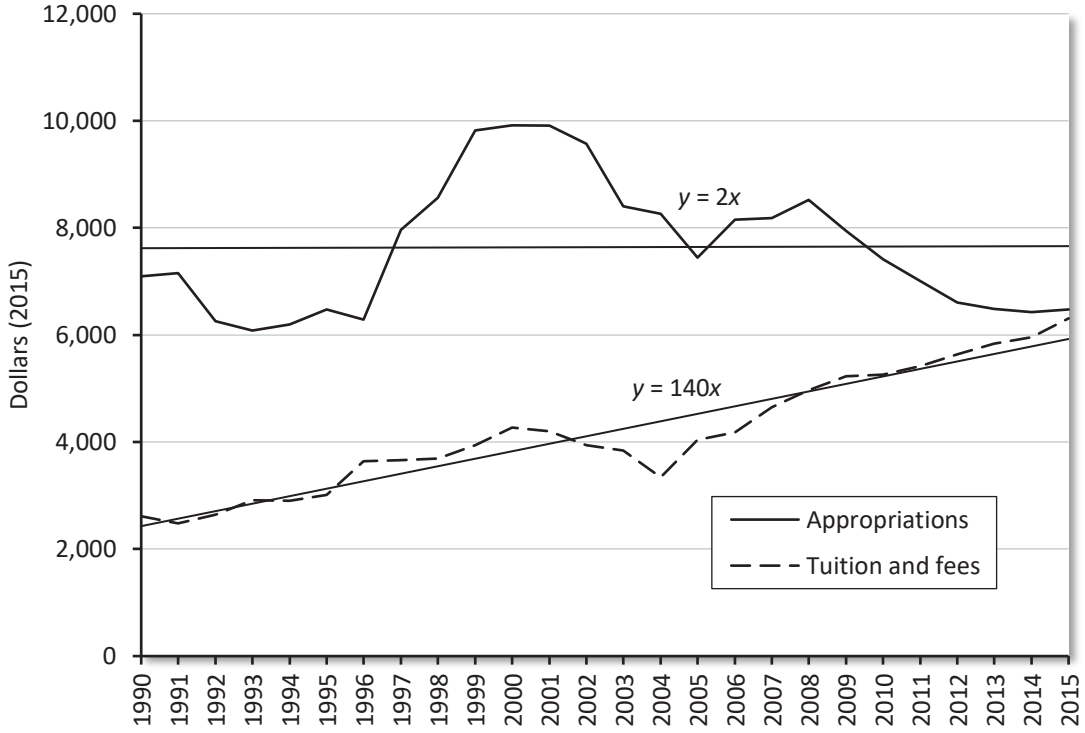
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



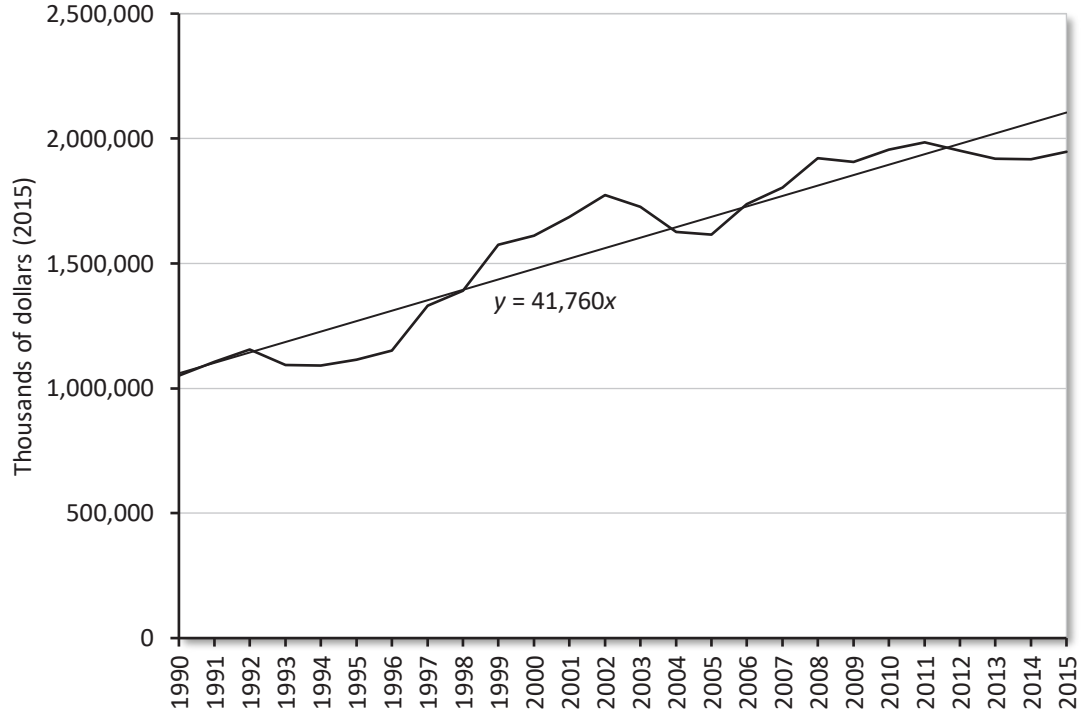
KENTUCKY

Net Annual per Pupil Change: $142 Net Change Rank: 8

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



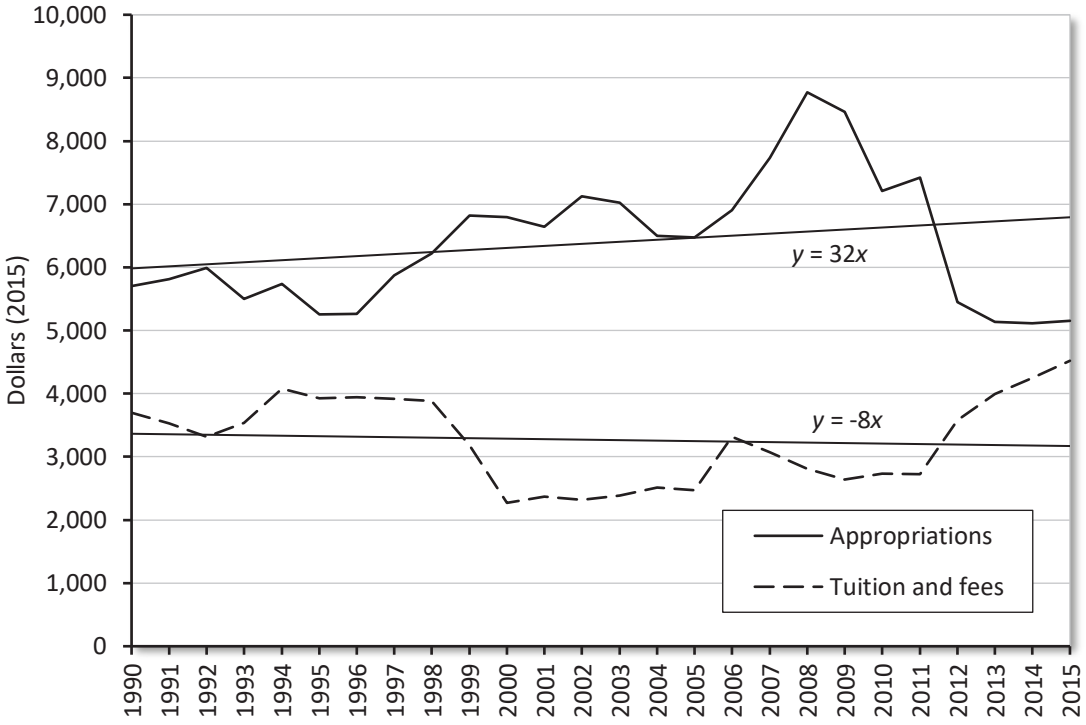
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



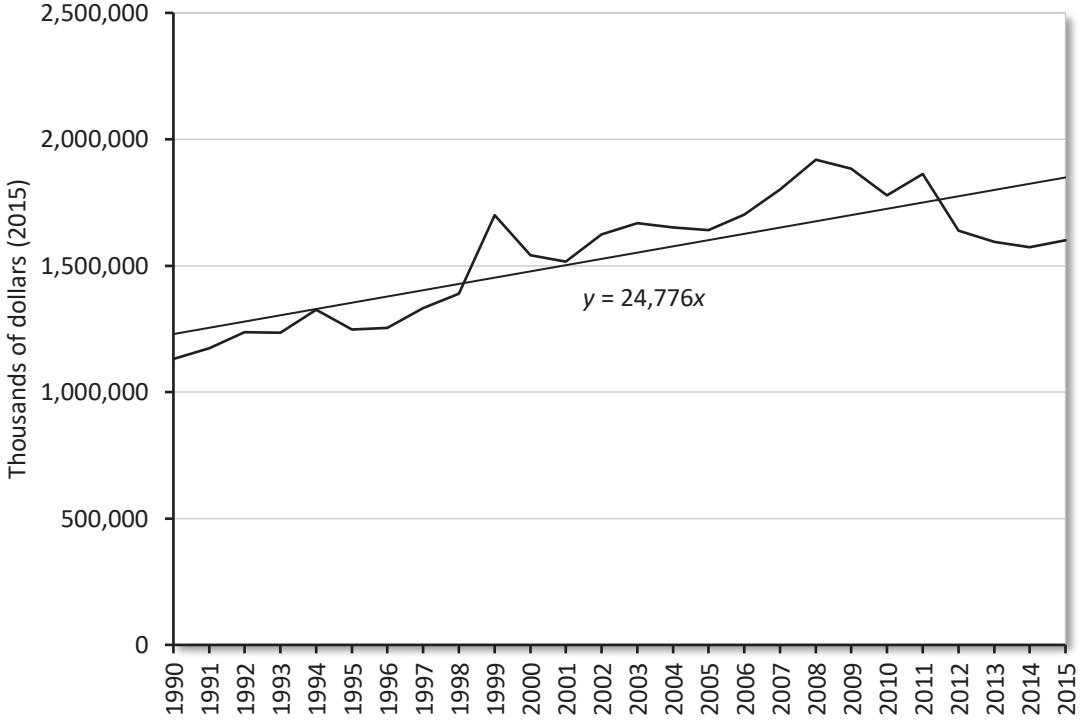
LOUISIANA

Net Annual per Pupil Change: $24 Net Change Rank: 30

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



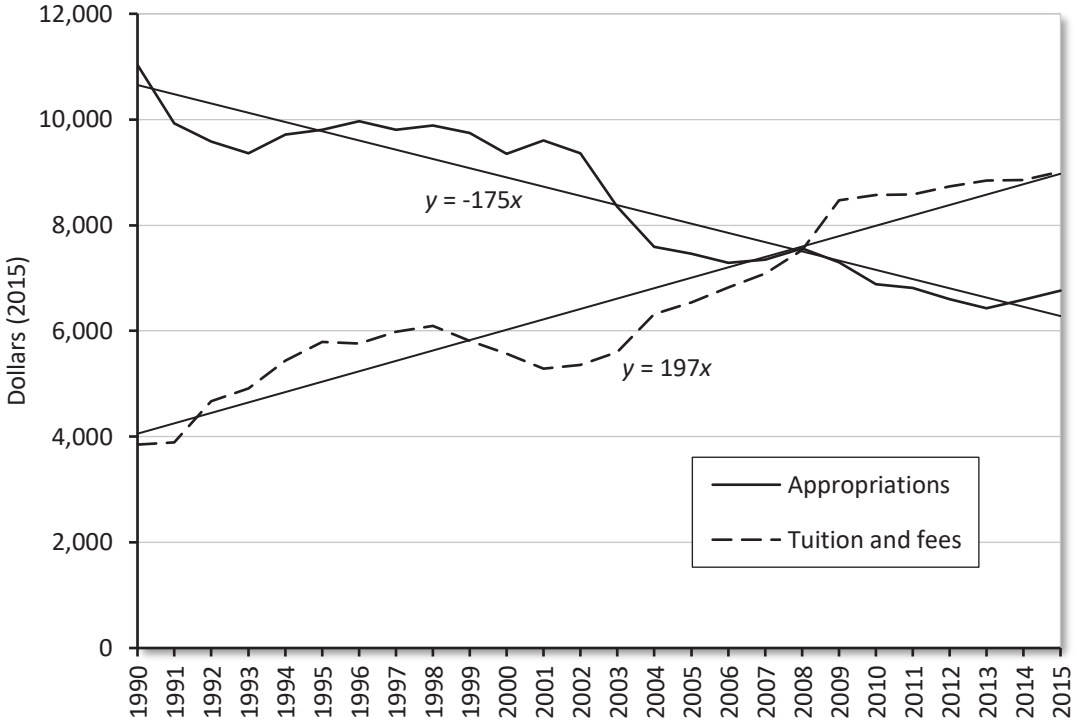
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



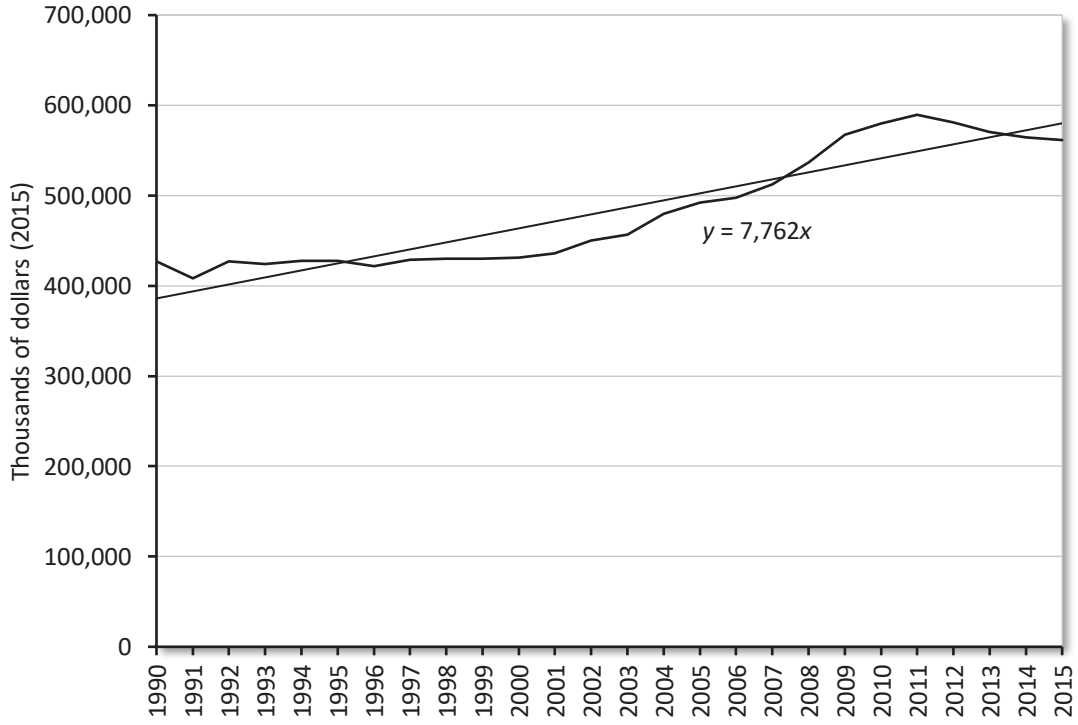
MAINE

Net Annual per Pupil Change: $22 Net Change Rank: 31

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



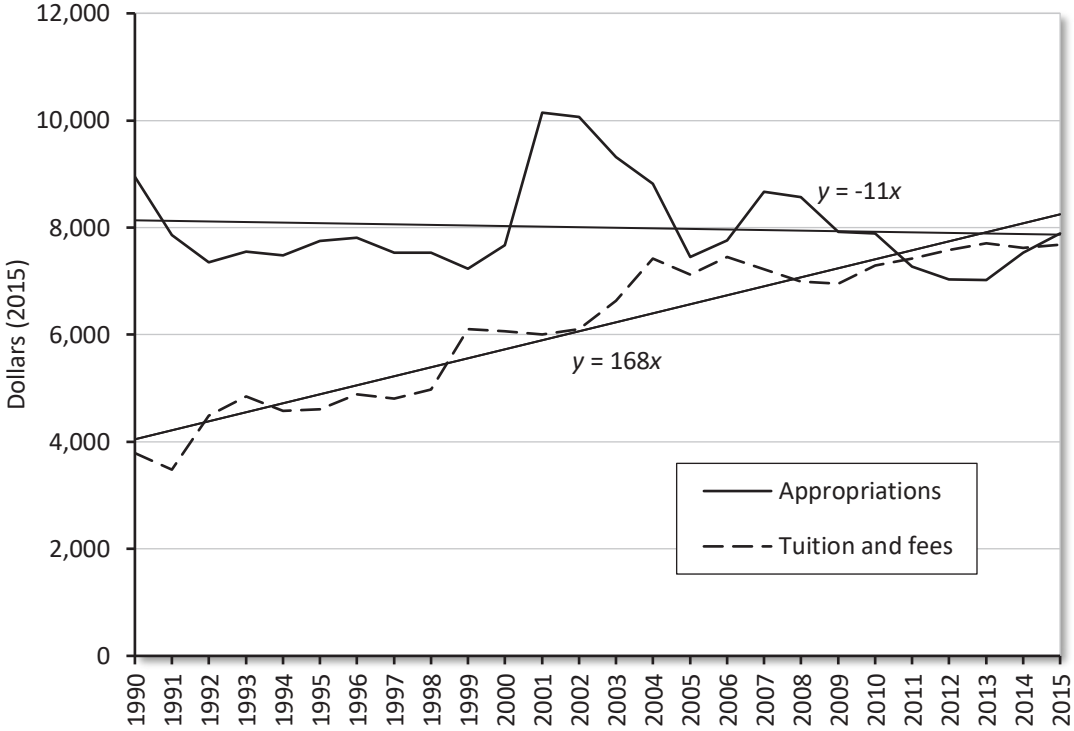
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



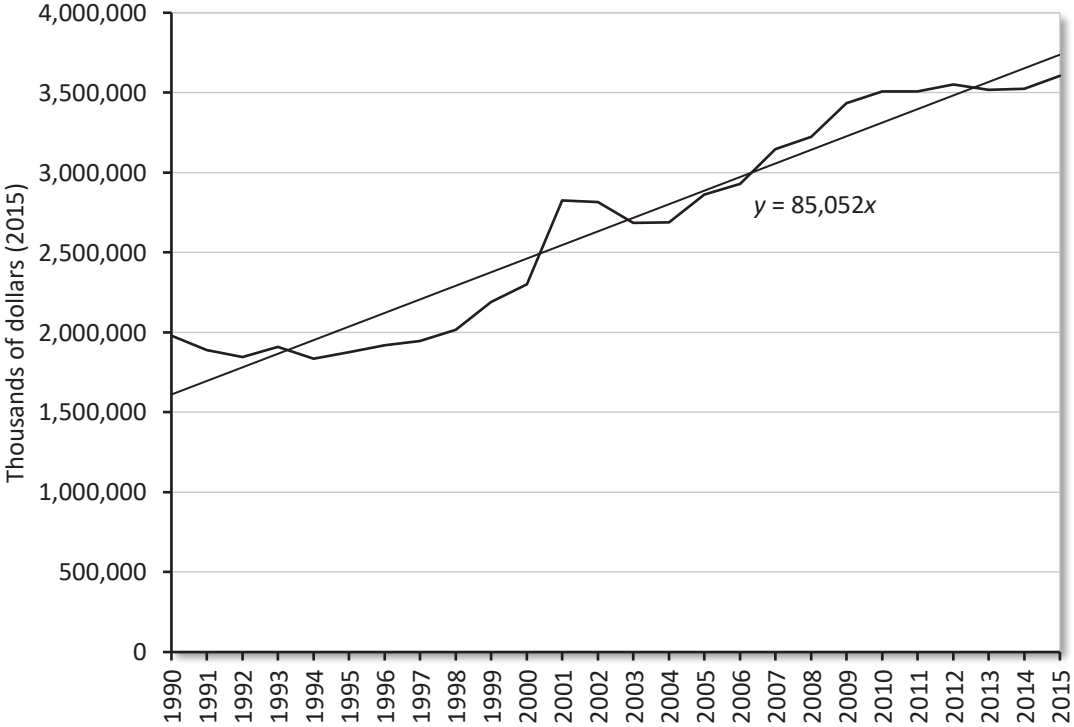
MARYLAND

Net Annual per Pupil Change: $157 Net Change Rank: 7

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



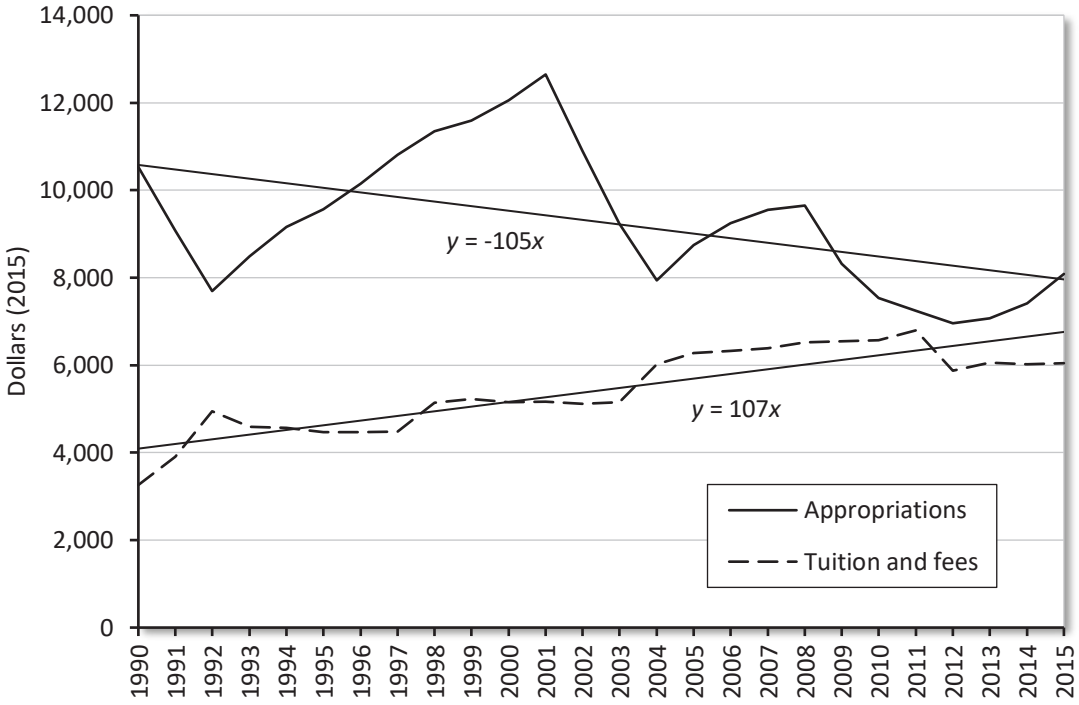
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



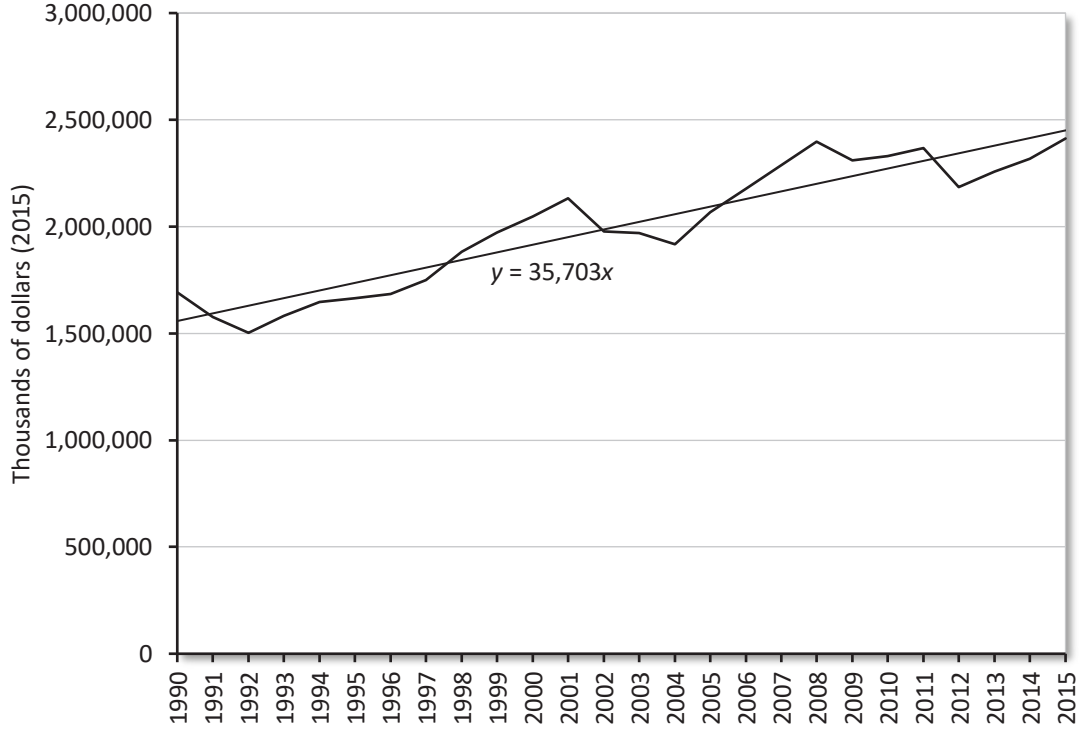
MASSACHUSETTS

Net Annual per Pupil Change: $2 Net Change Rank: Tied 38

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



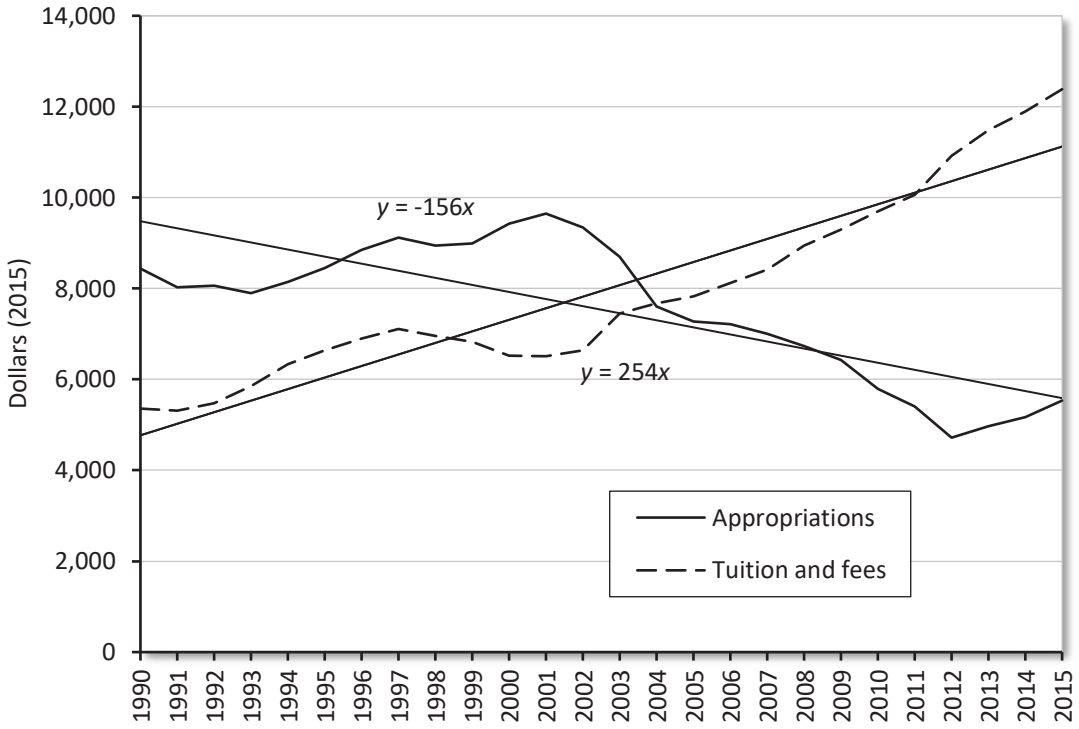
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



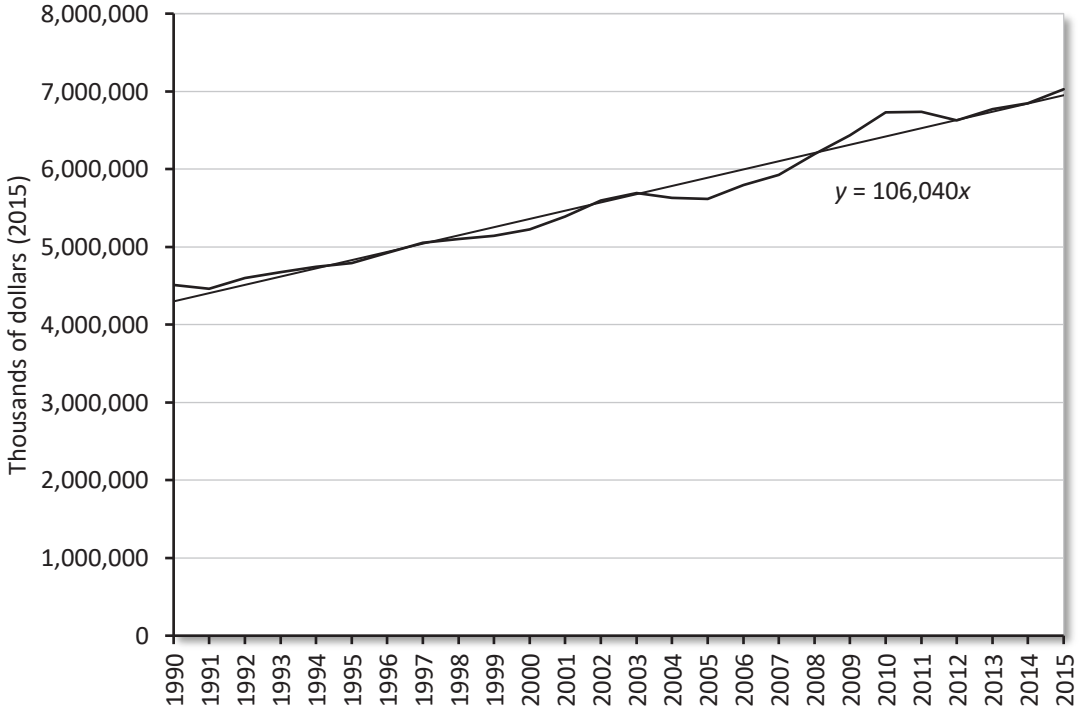
MICHIGAN

Net Annual per Pupil Change: $98 Net Change Rank: 12

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



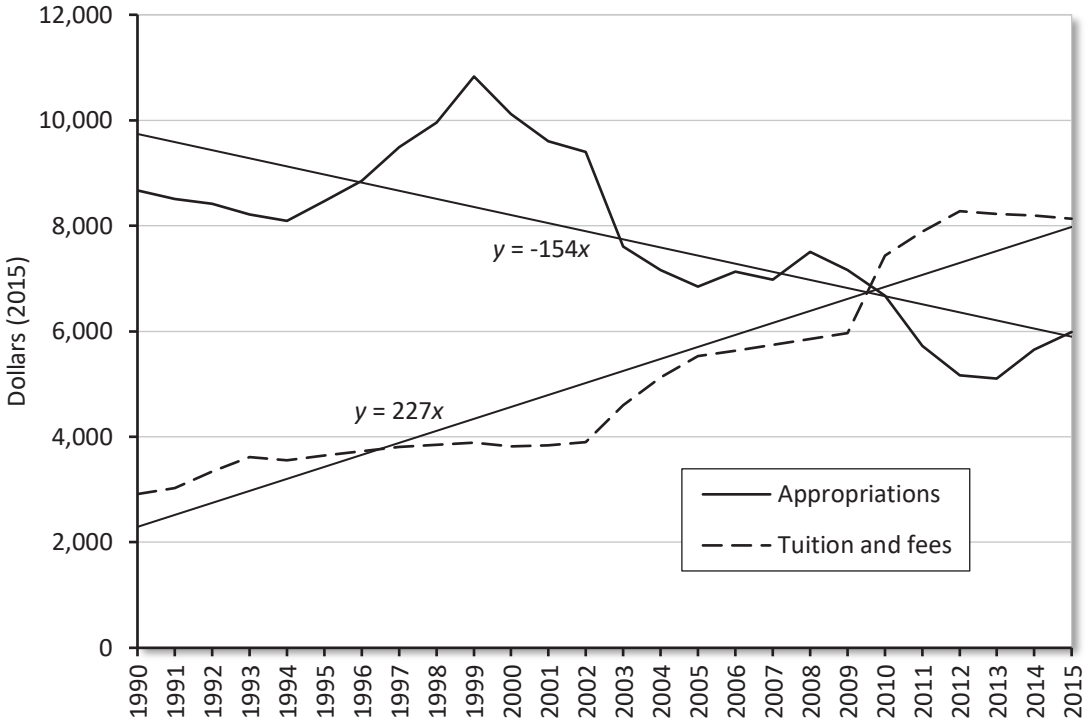
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



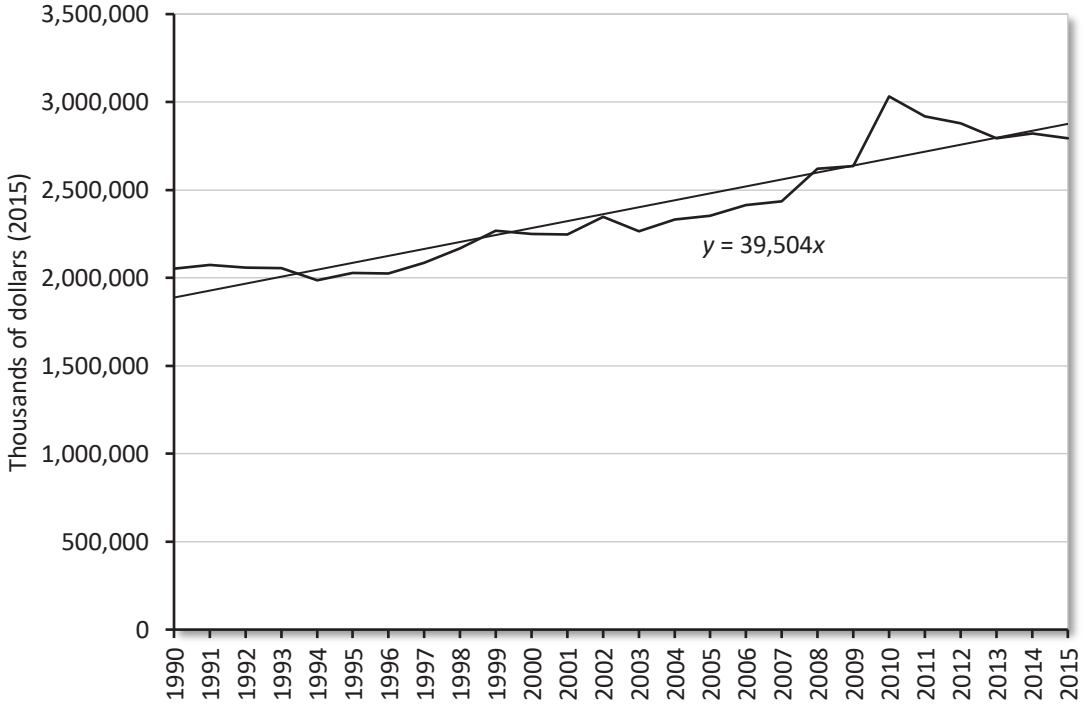
MINNESOTA

Net Annual per Pupil Change: $73 Net Change Rank: 16

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



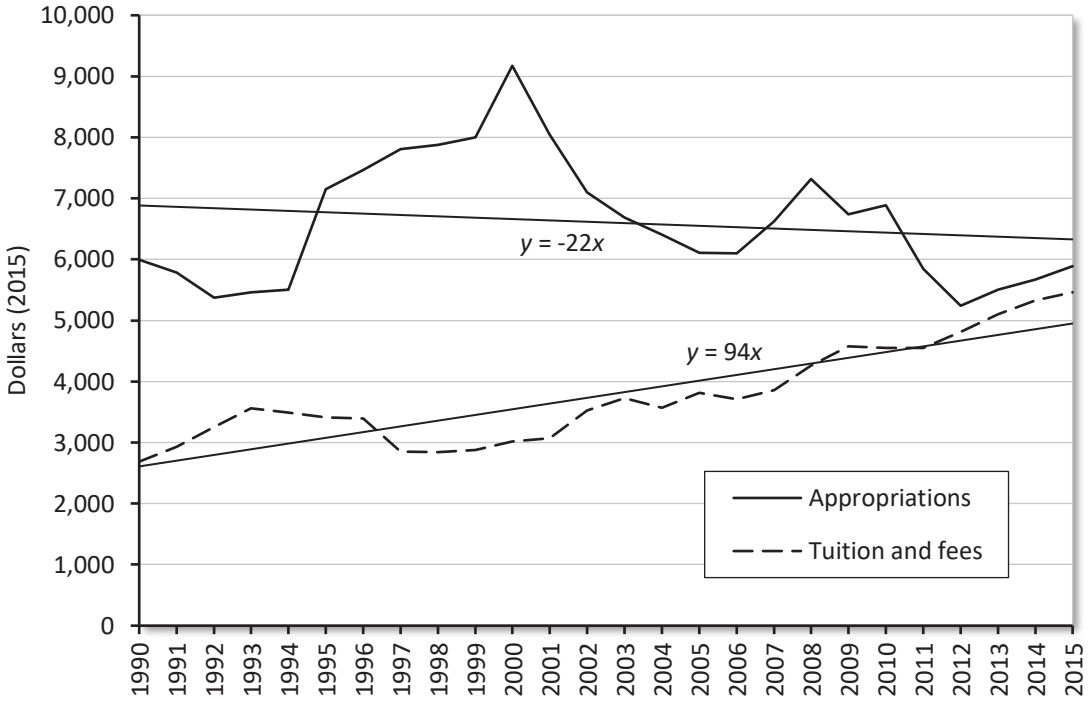
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



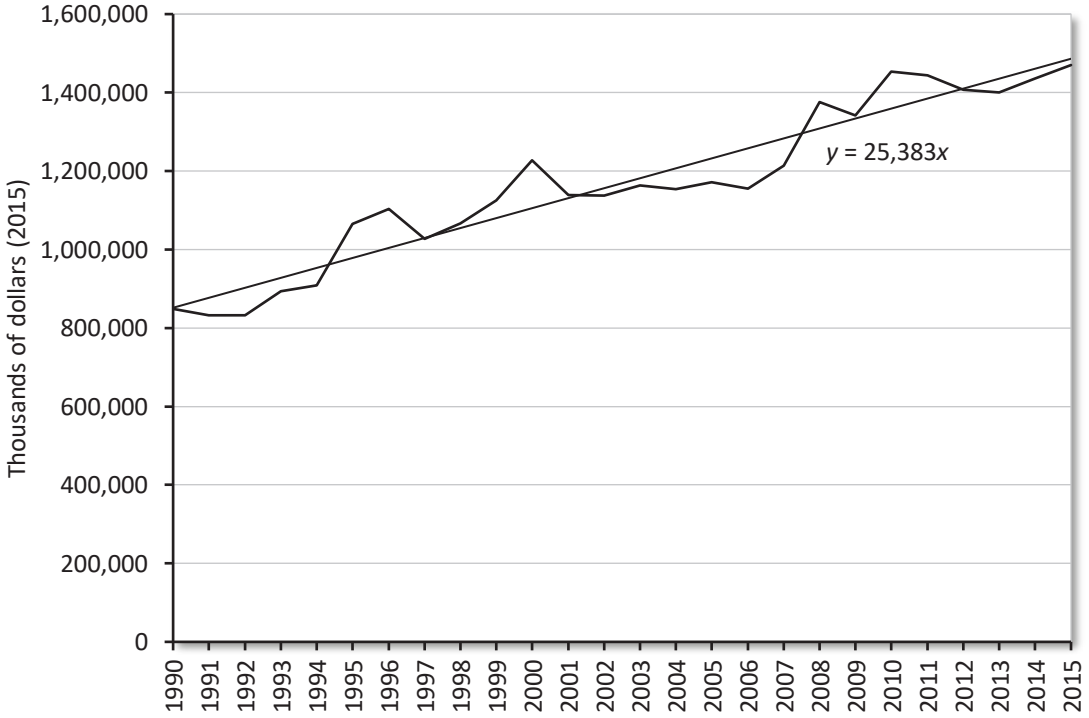
MISSISSIPPI

Net Annual per Pupil Change: $72 Net Change Rank: 17

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



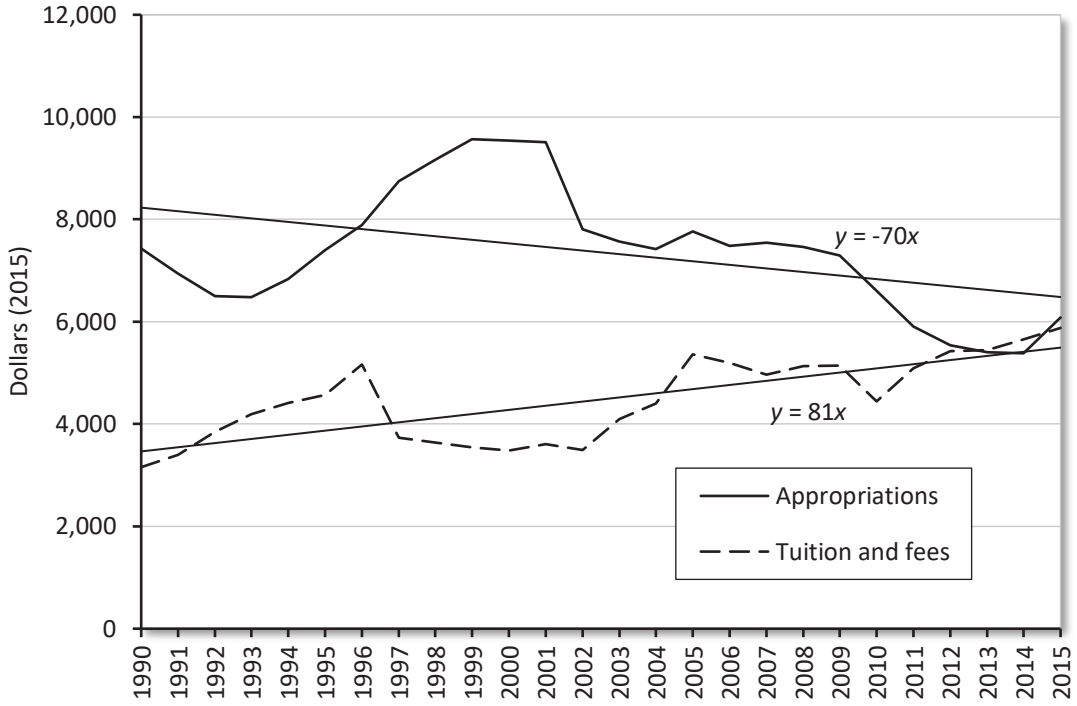
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



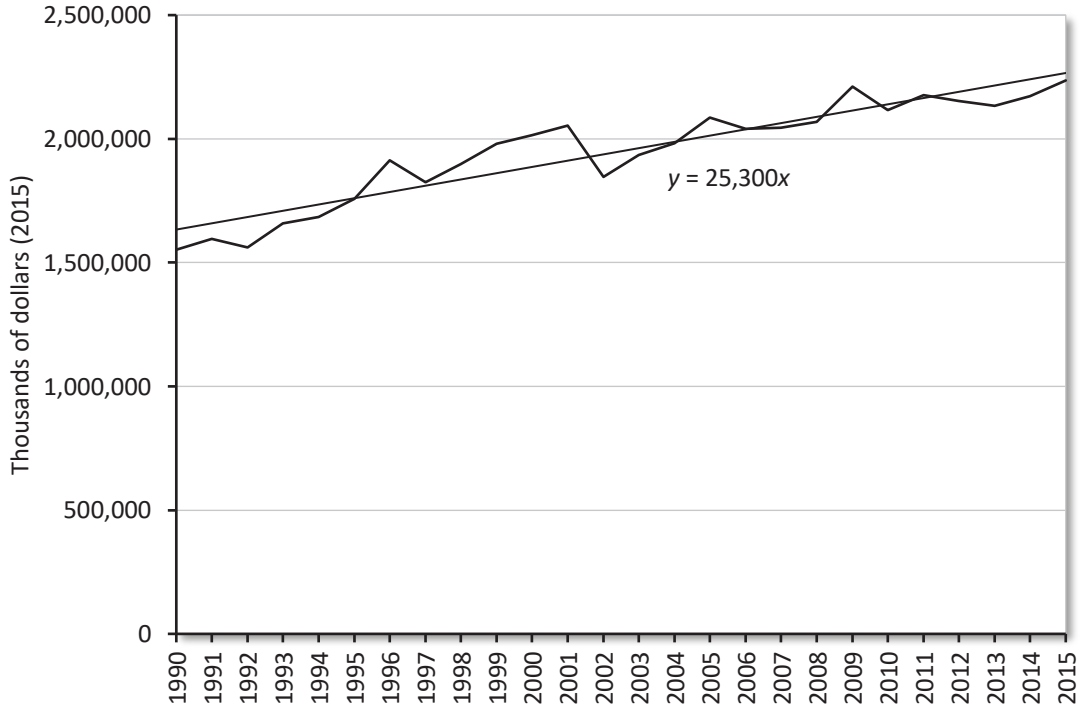
MISSOURI

Net Annual per Pupil Change: $11 Net Change Rank: 36

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



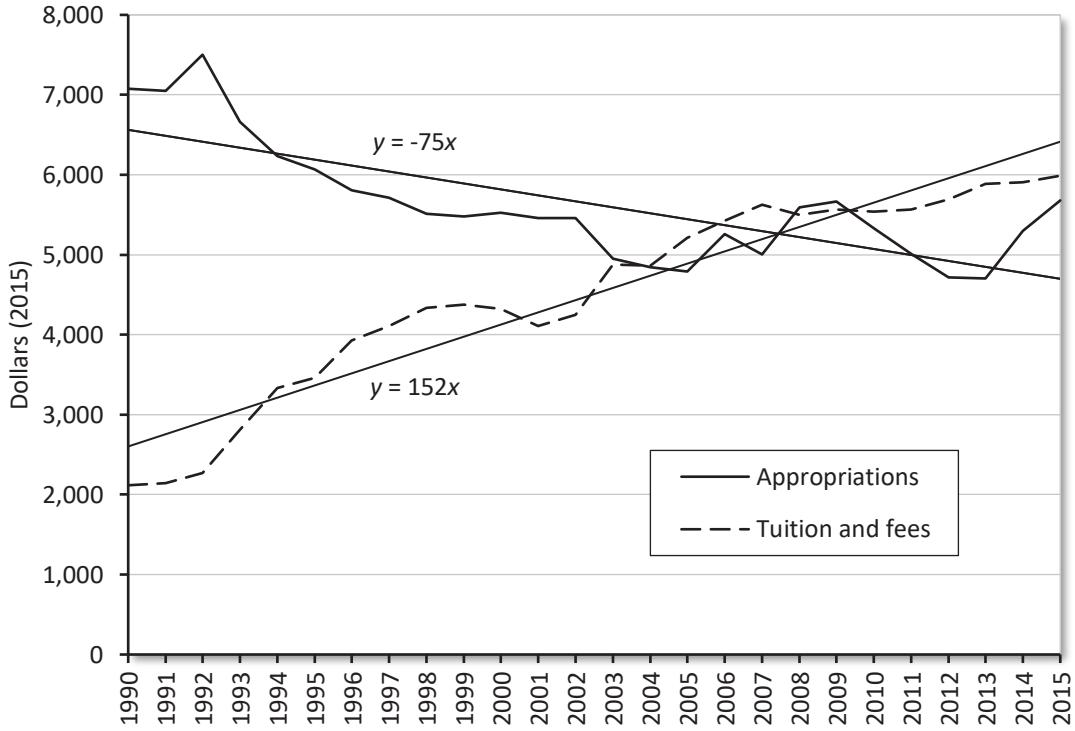
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



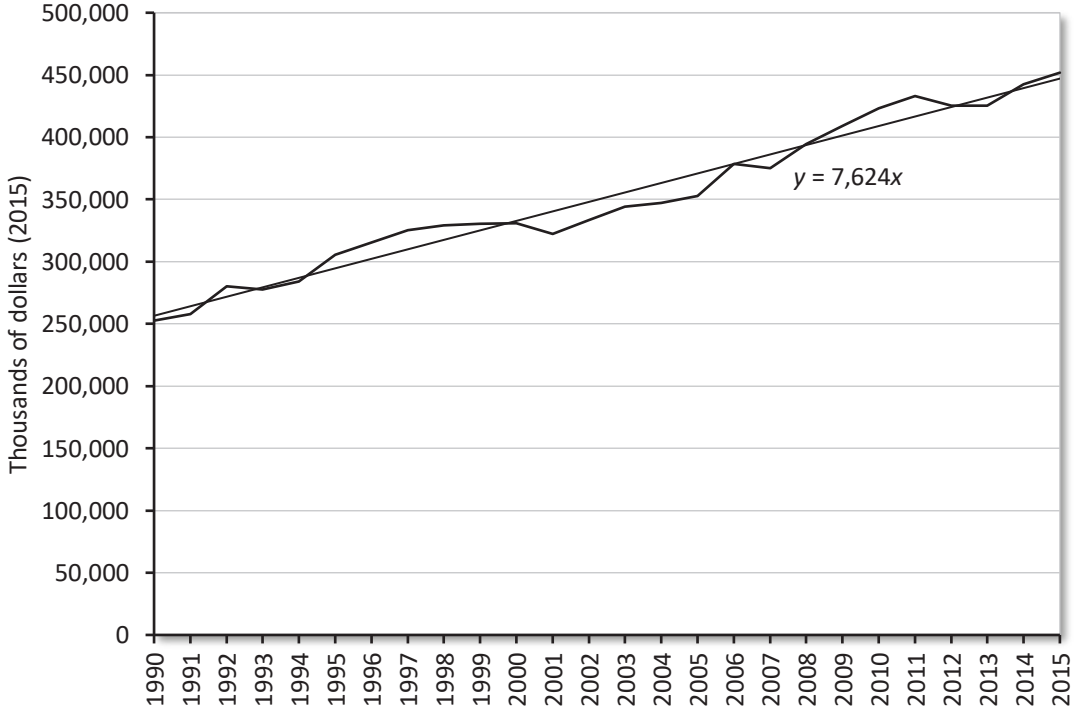
MONTANA

Net Annual per Pupil Change: $77 Net Change Rank: 13

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



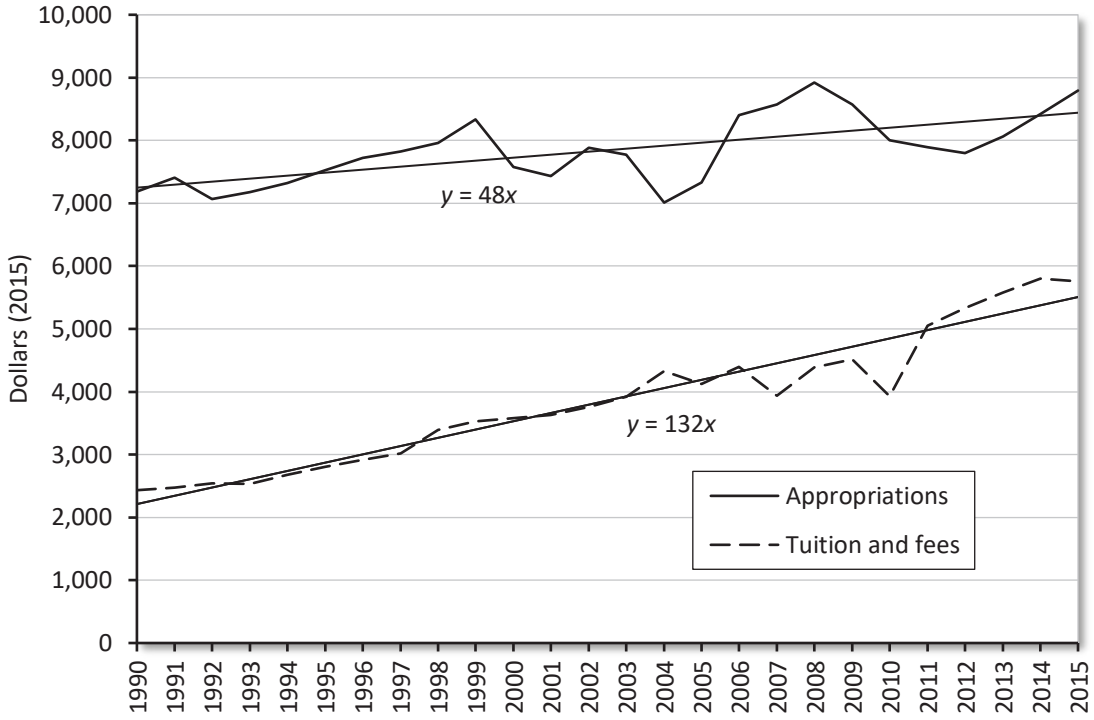
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



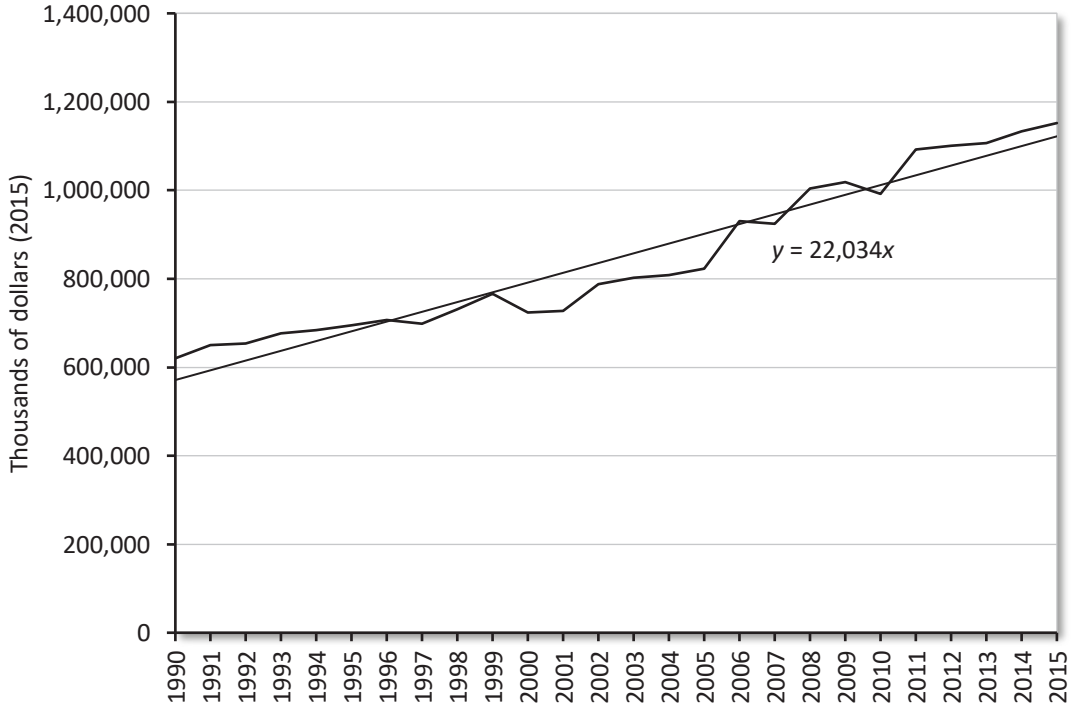
NEBRASKA

Net Annual per Pupil Change: $180 Net Change Rank: 4

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



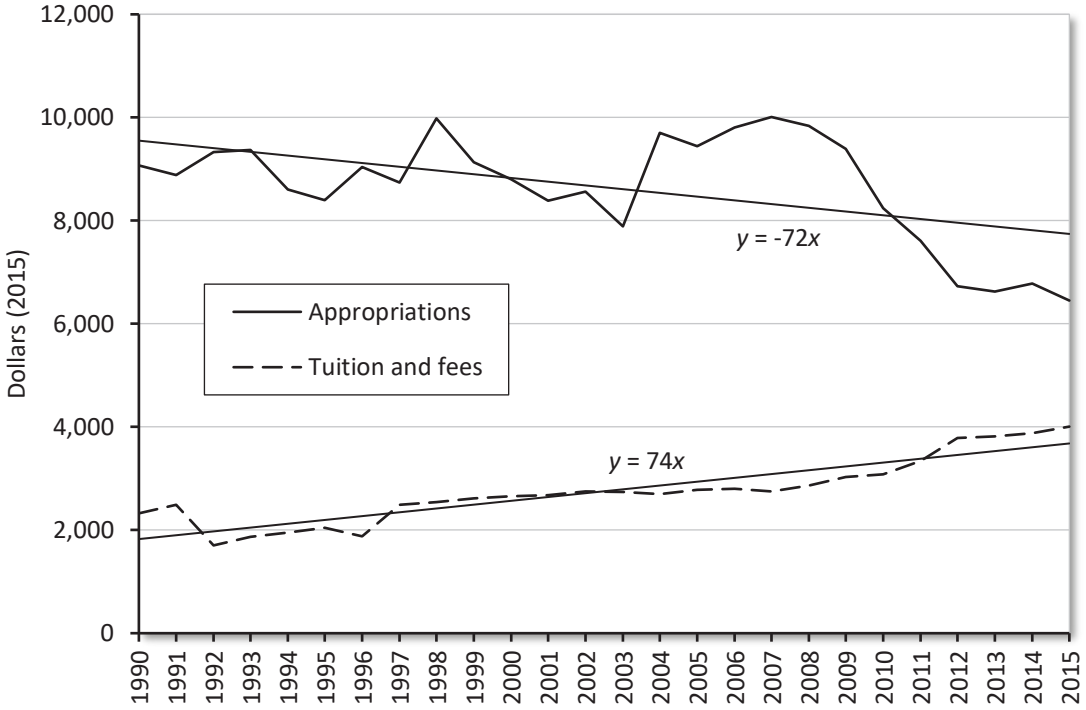
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



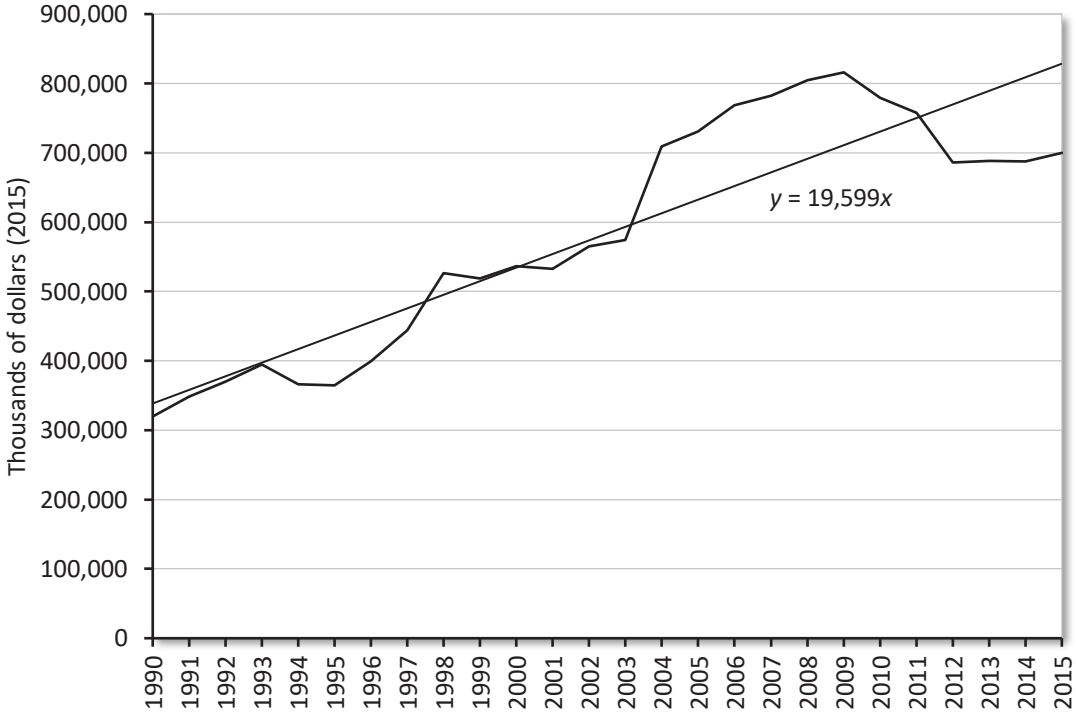
NEVADA

Net Annual per Pupil Change: $2 Net Change Rank: Tied 38

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



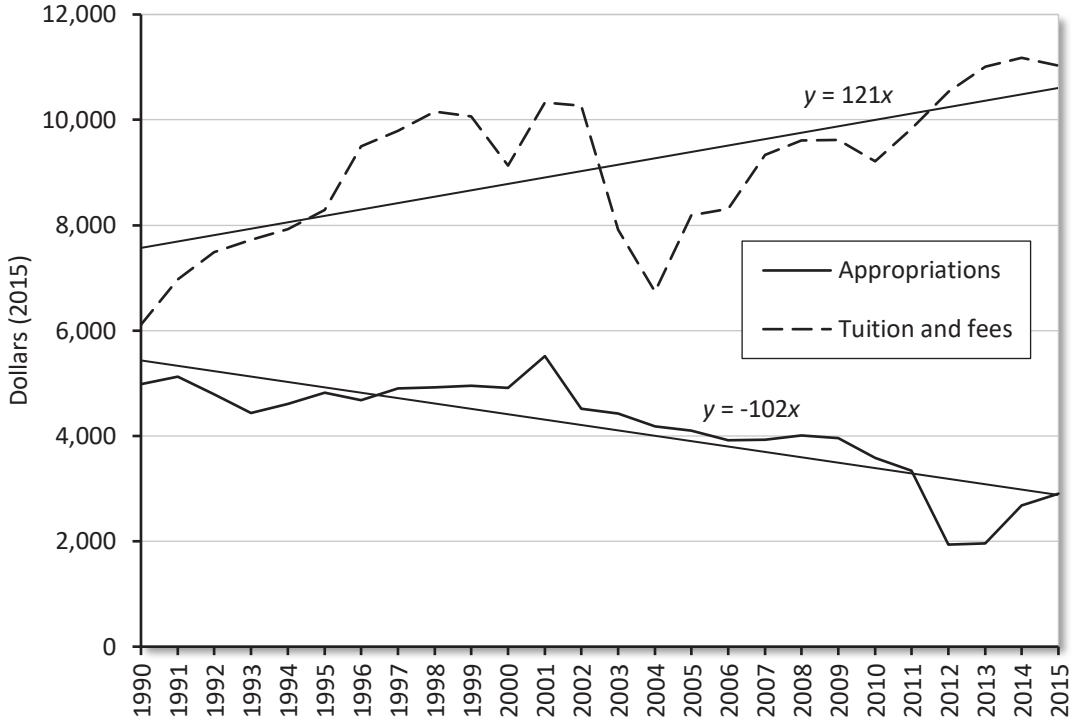
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



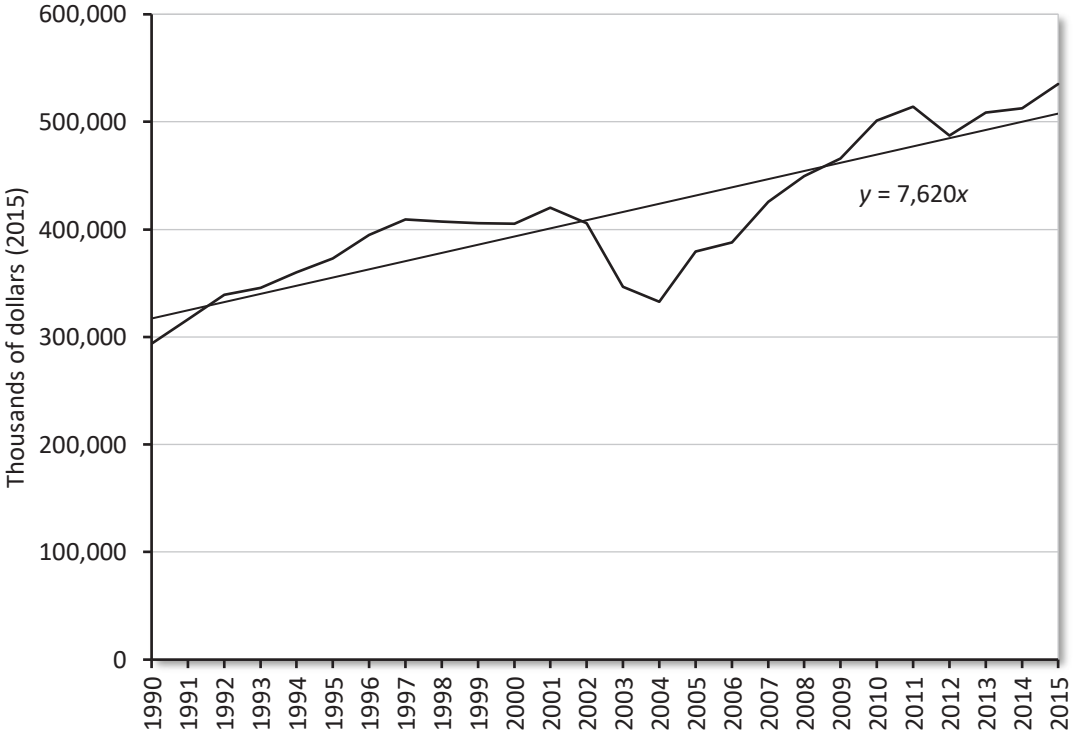
NEW HAMPSHIRE

Net Annual per Pupil Change: $19 Net Change Rank: Tied 32

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



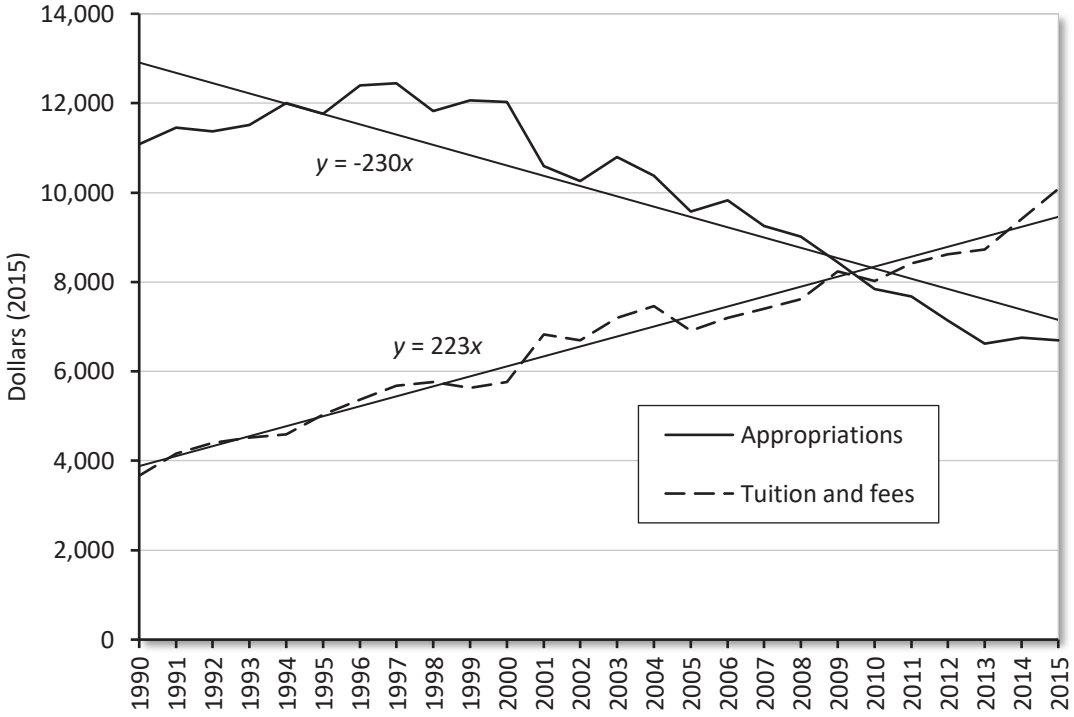
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



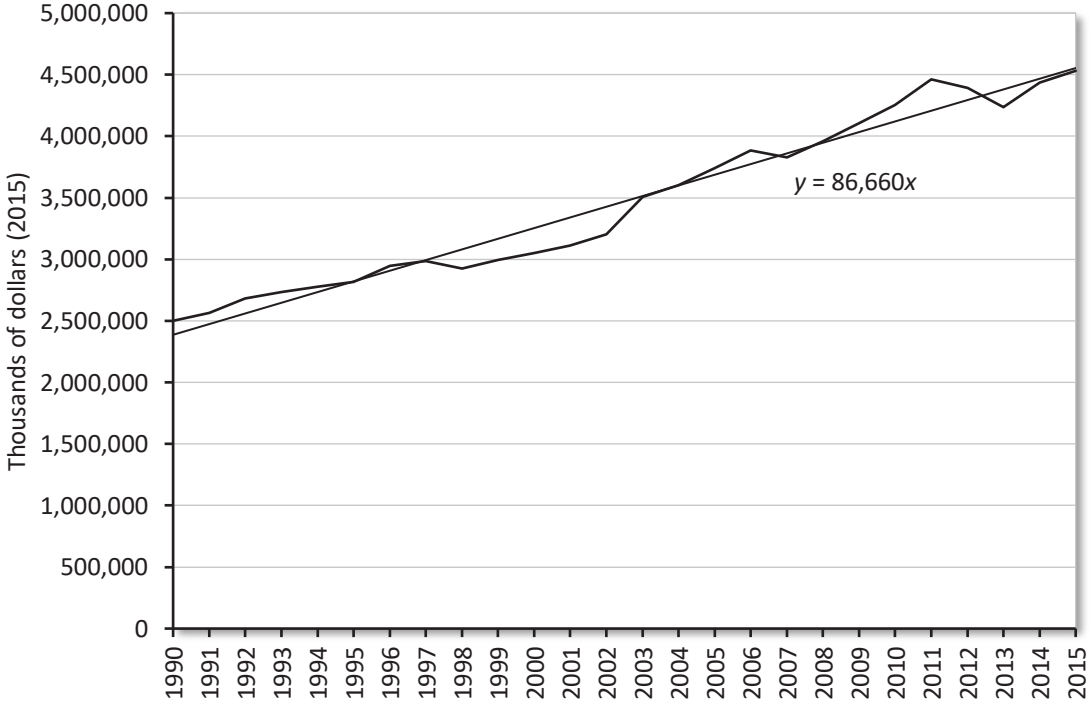
NEW JERSEY

Net Annual per Pupil Change: -$7 Net Change Rank: 41

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



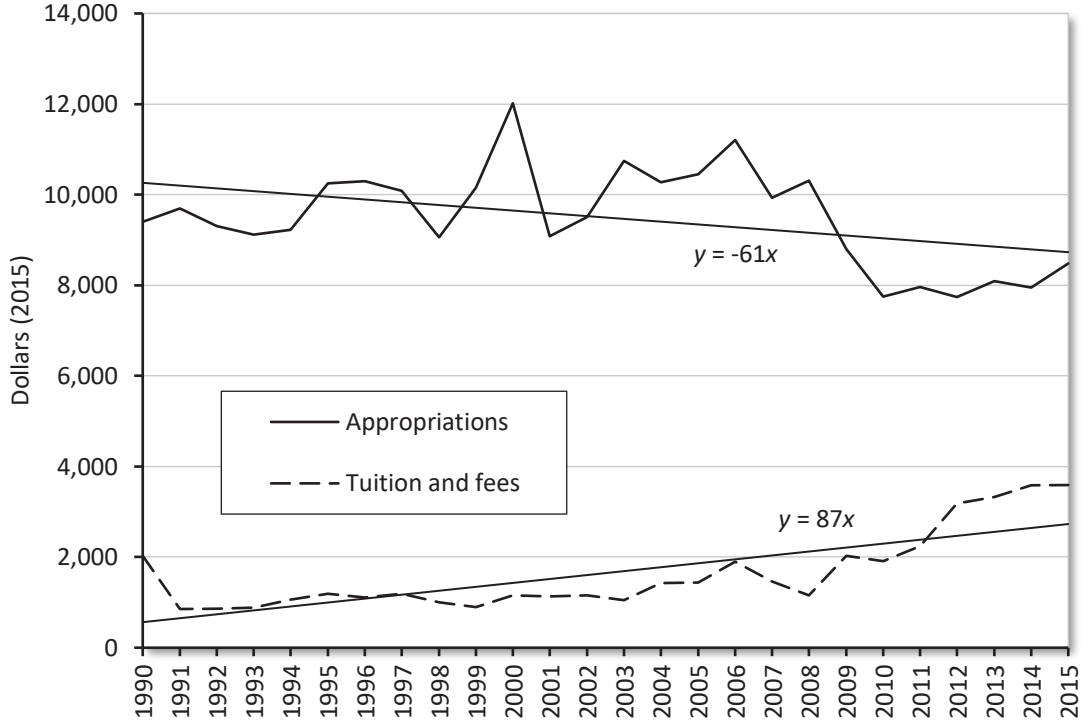
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



NEW MEXICO

Net Annual per Pupil Change: $25 Net Change Rank: 29

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)

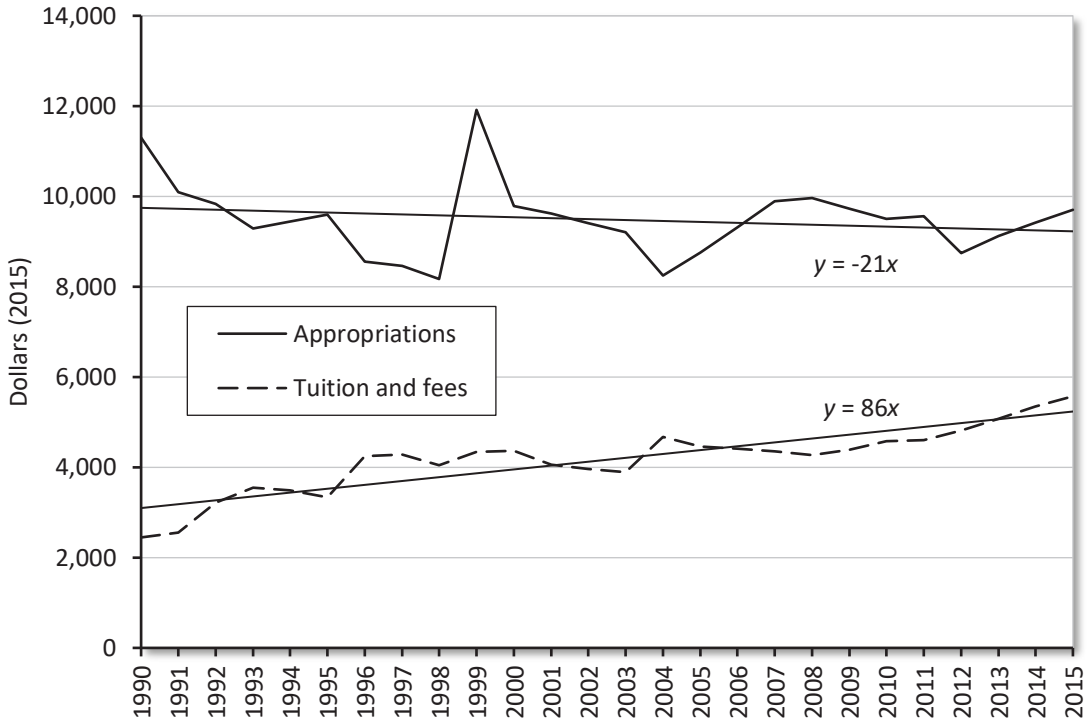


Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)

NEW YORK

Net Annual per Pupil Change: $65 Net Change Rank: 21

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)

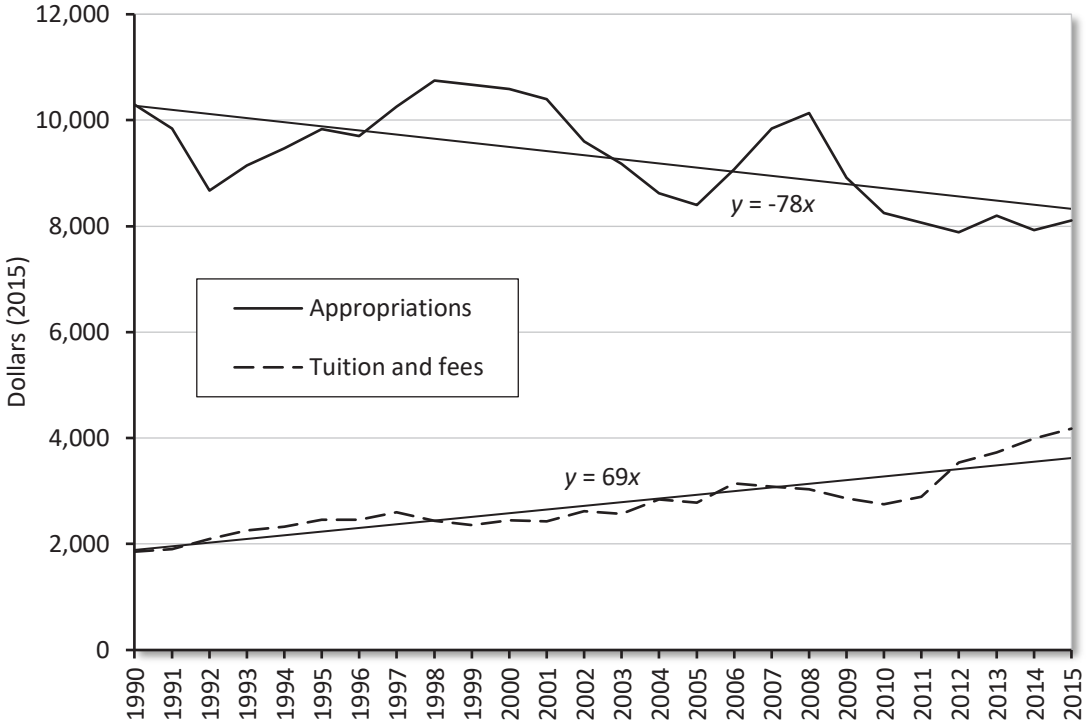


Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)

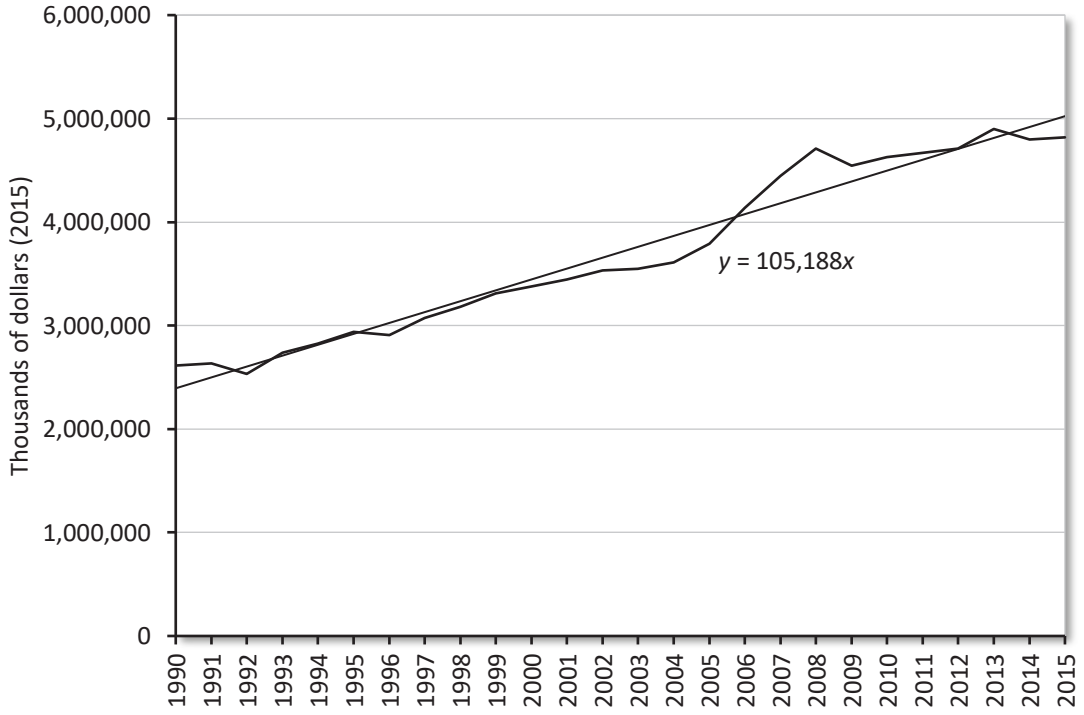
NORTH CAROLINA

Net Annual per Pupil Change: -$9 Net Change Rank: 42

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



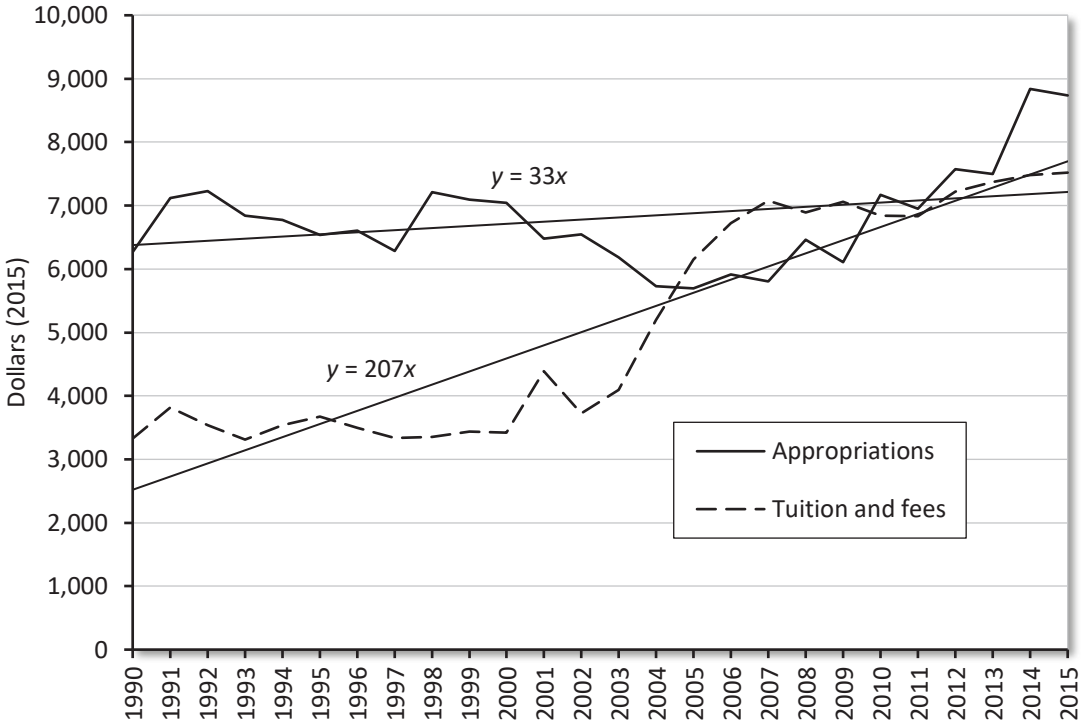
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



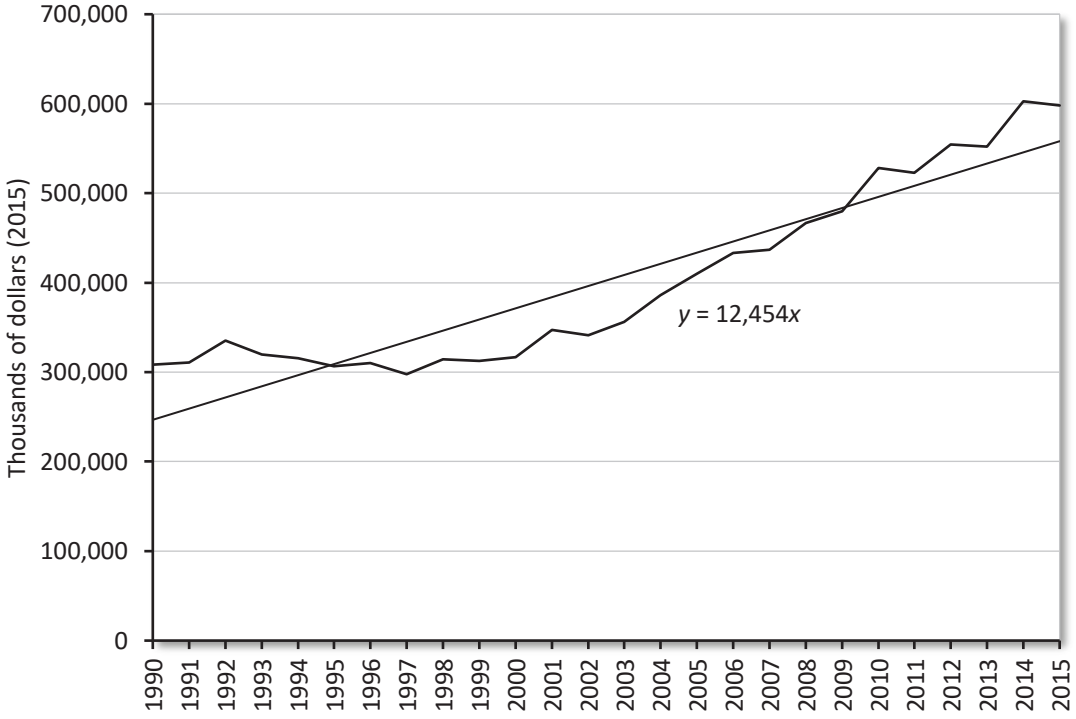
NORTH DAKOTA

Net Annual per Pupil Change: $240 Net Change Rank: 2

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



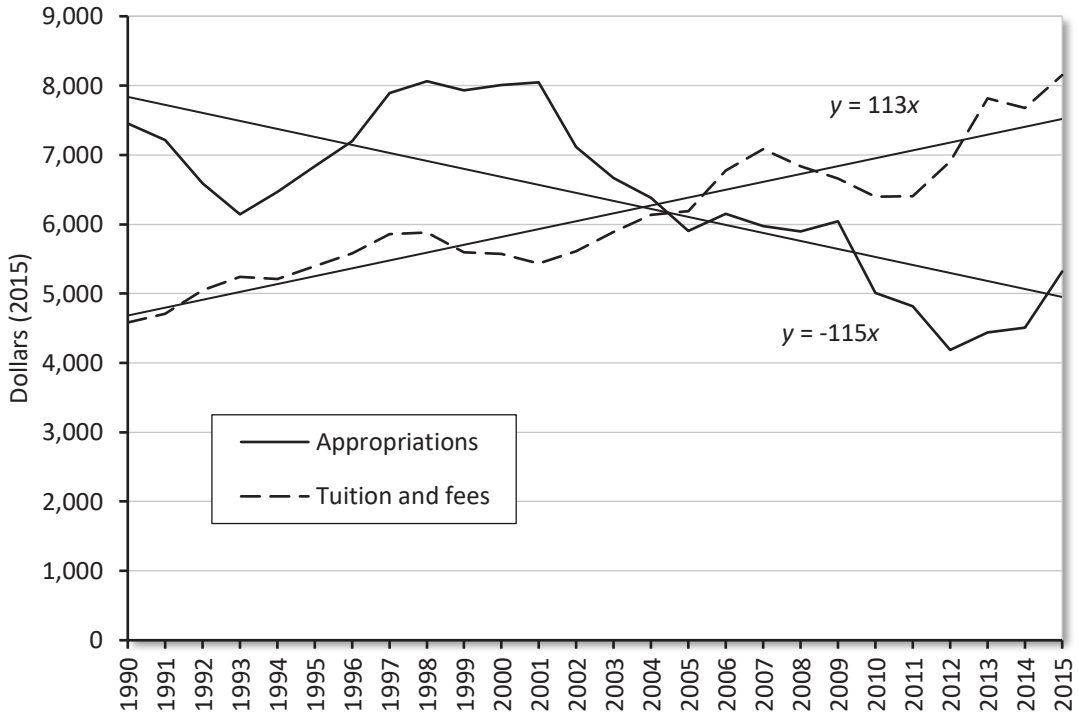
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



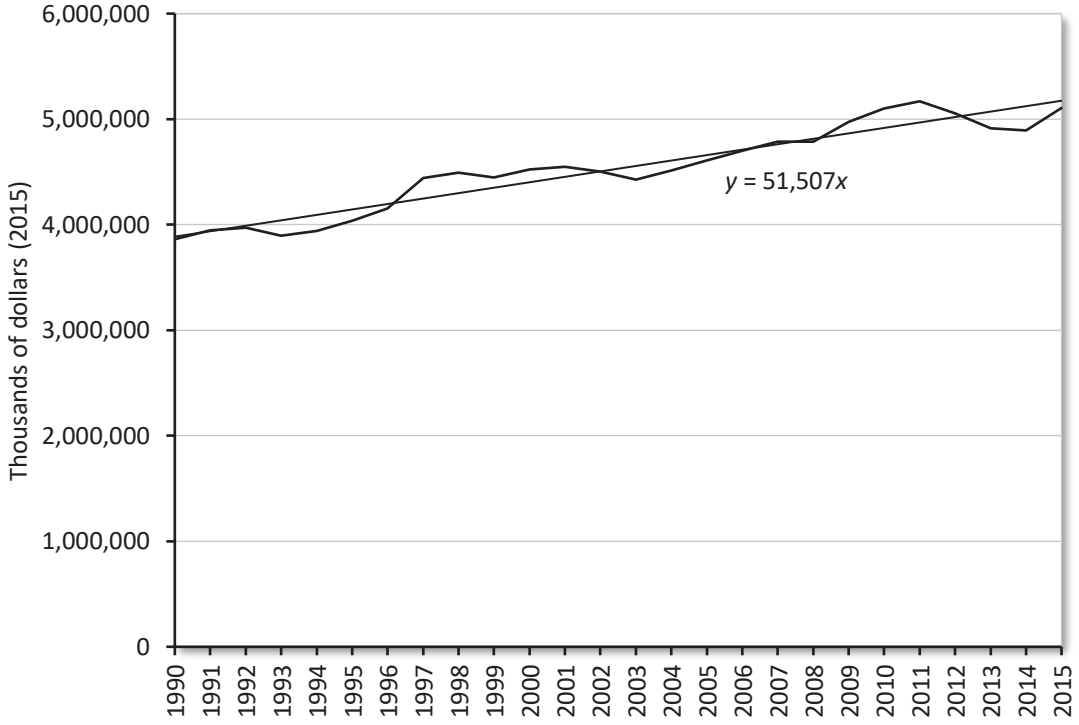
OHIO

Net Annual per Pupil Change: -$2 Net Change Rank: 40

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



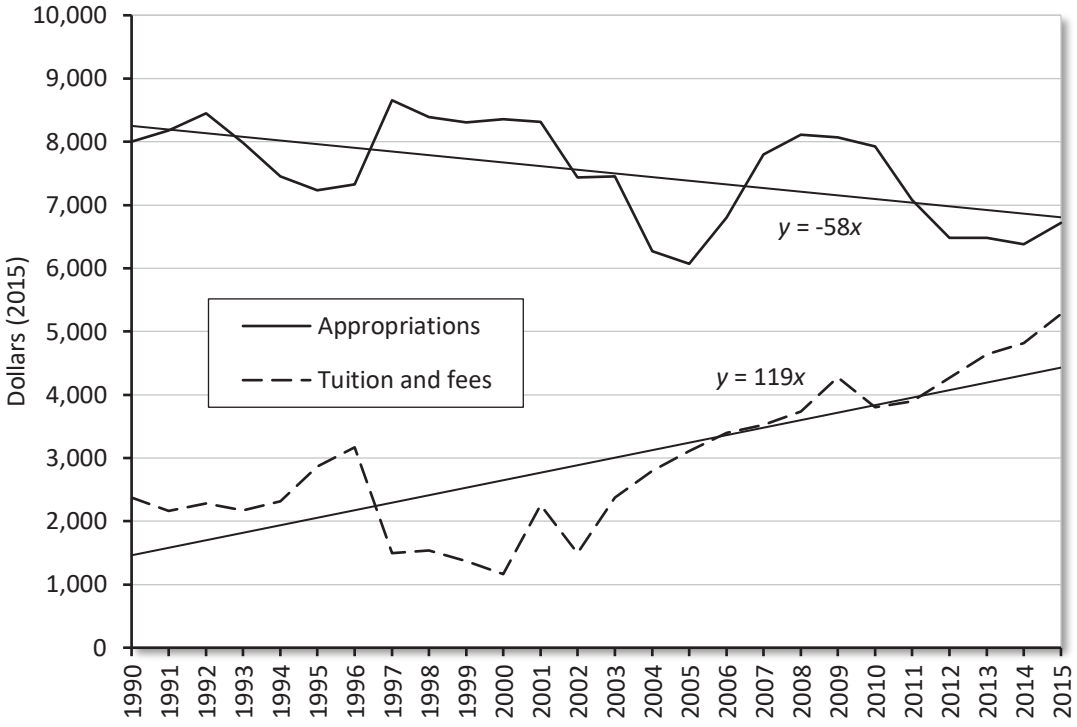
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



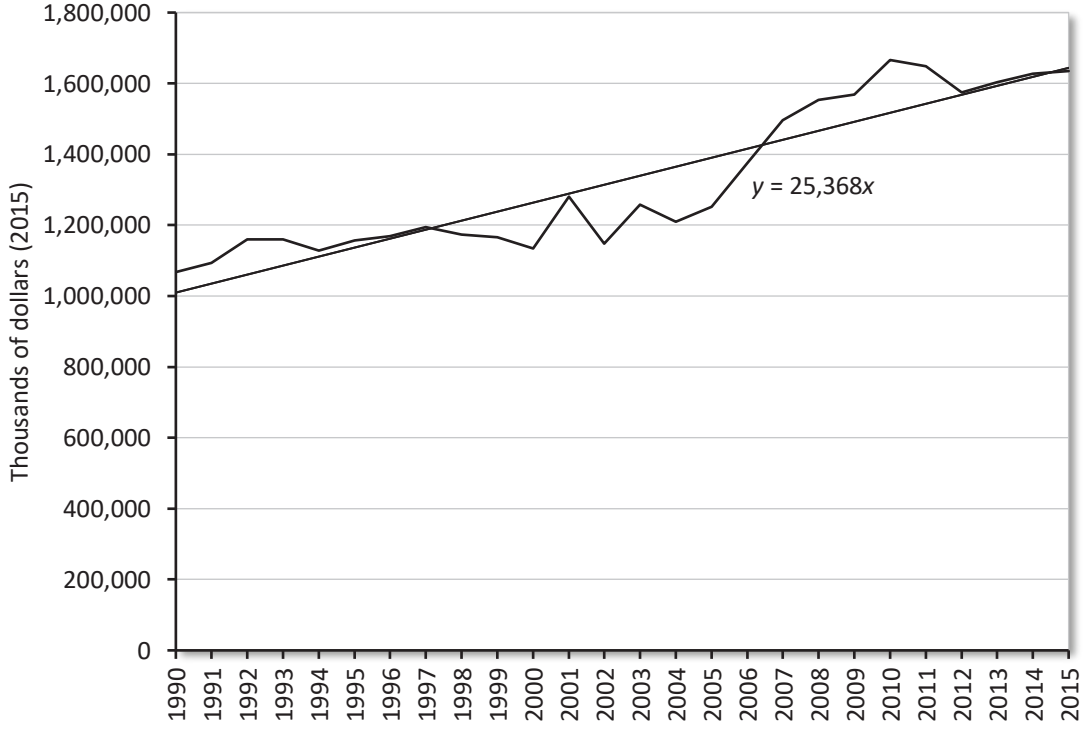
OKLAHOMA

Net Annual per Pupil Change: $61 Net Change Rank: 22

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



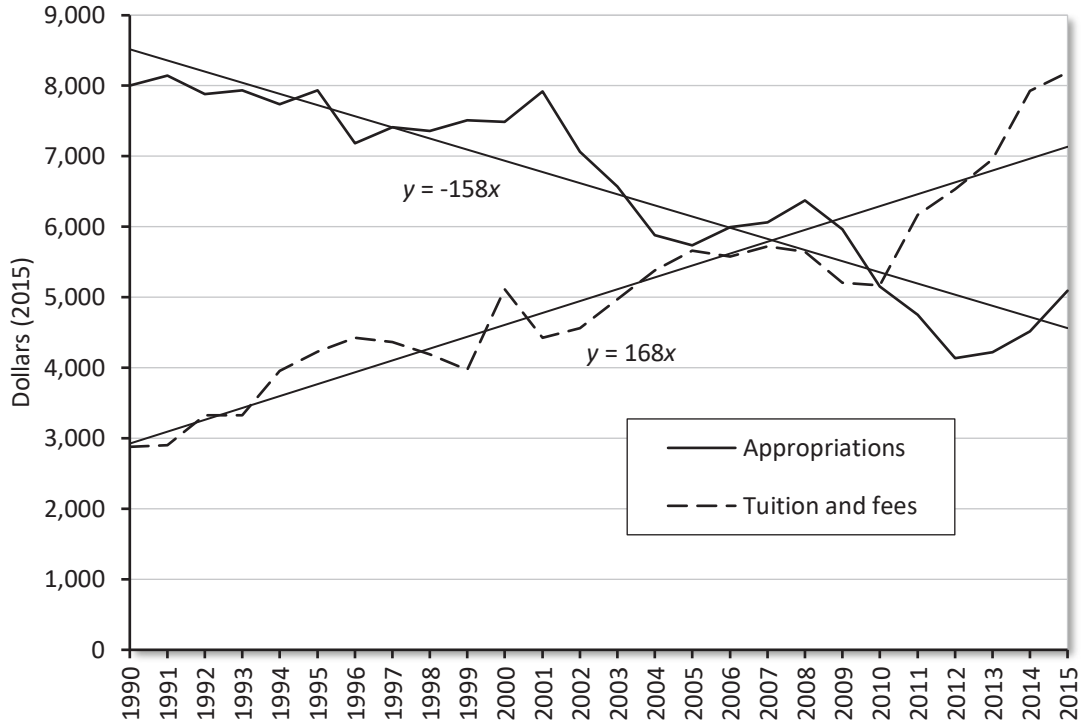
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



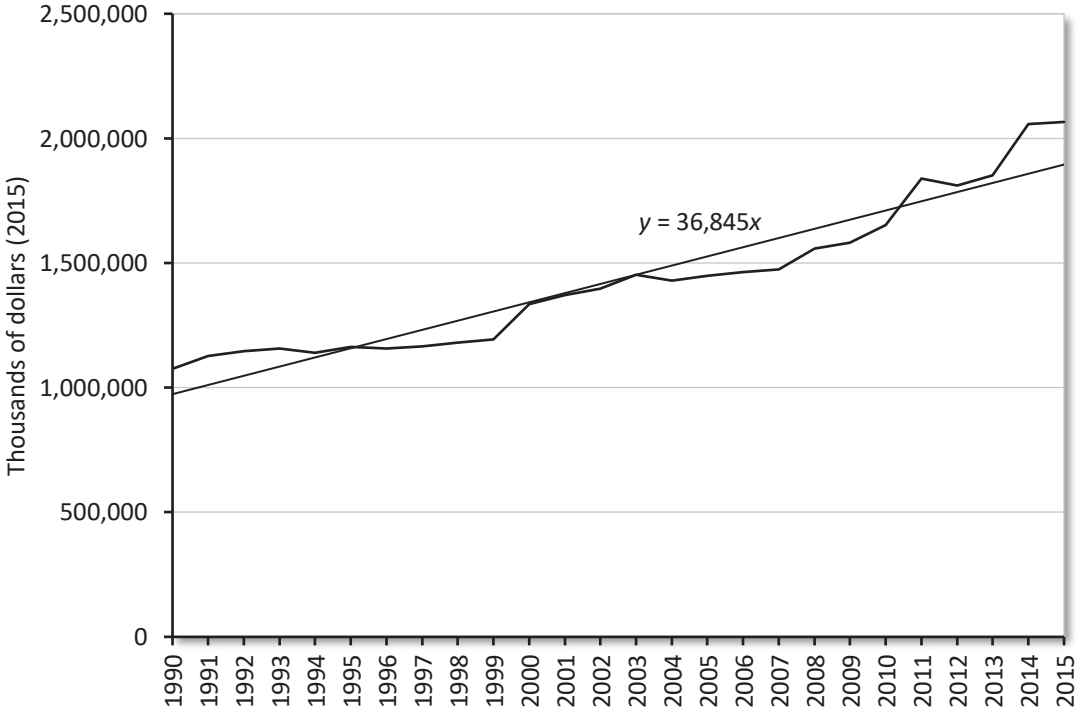
OREGON

Net Annual per Pupil Change: $10 Net Change Rank: 37

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



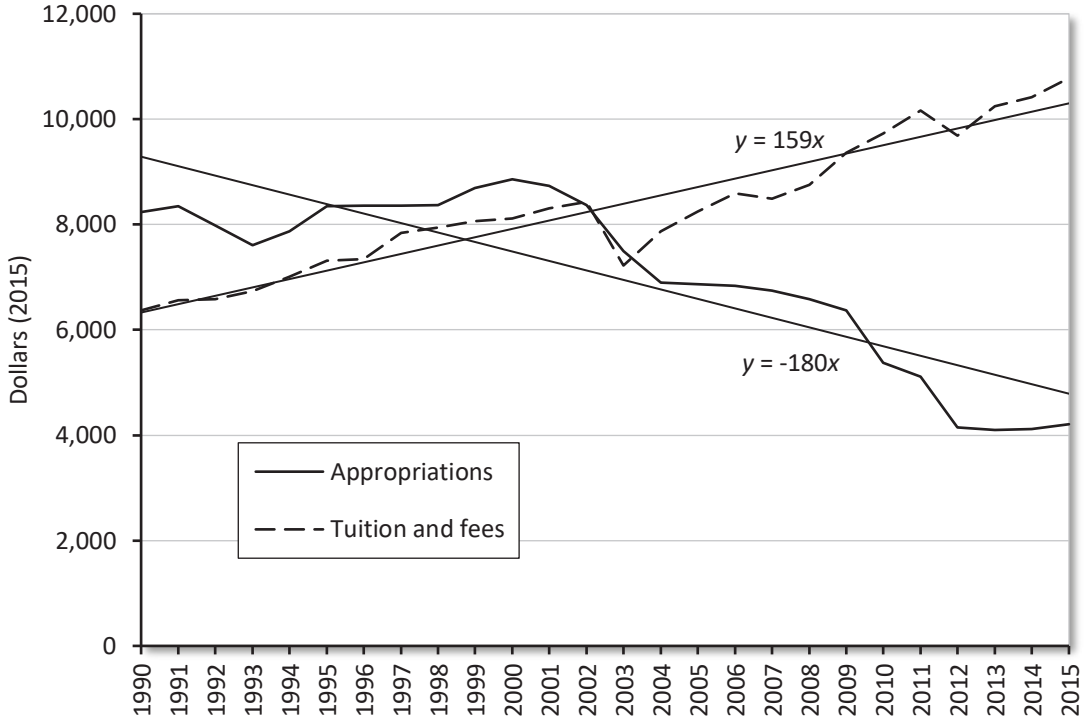
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



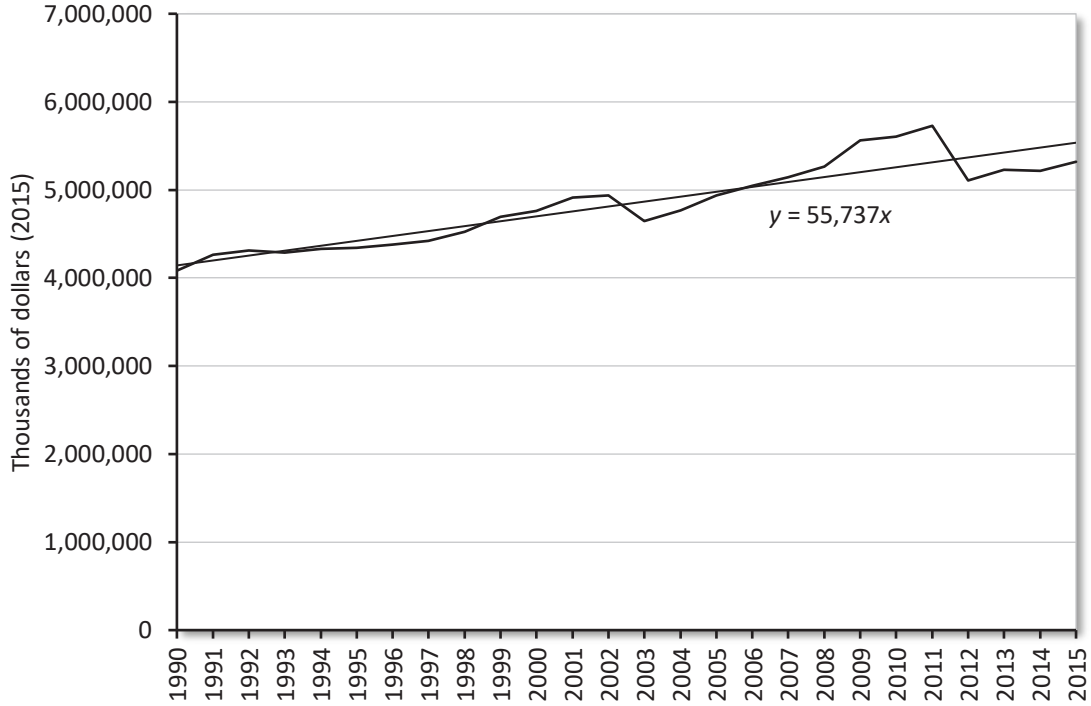
PENNSYLVANIA

Net Annual per Pupil Change: -$21 Net Change Rank: 45

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



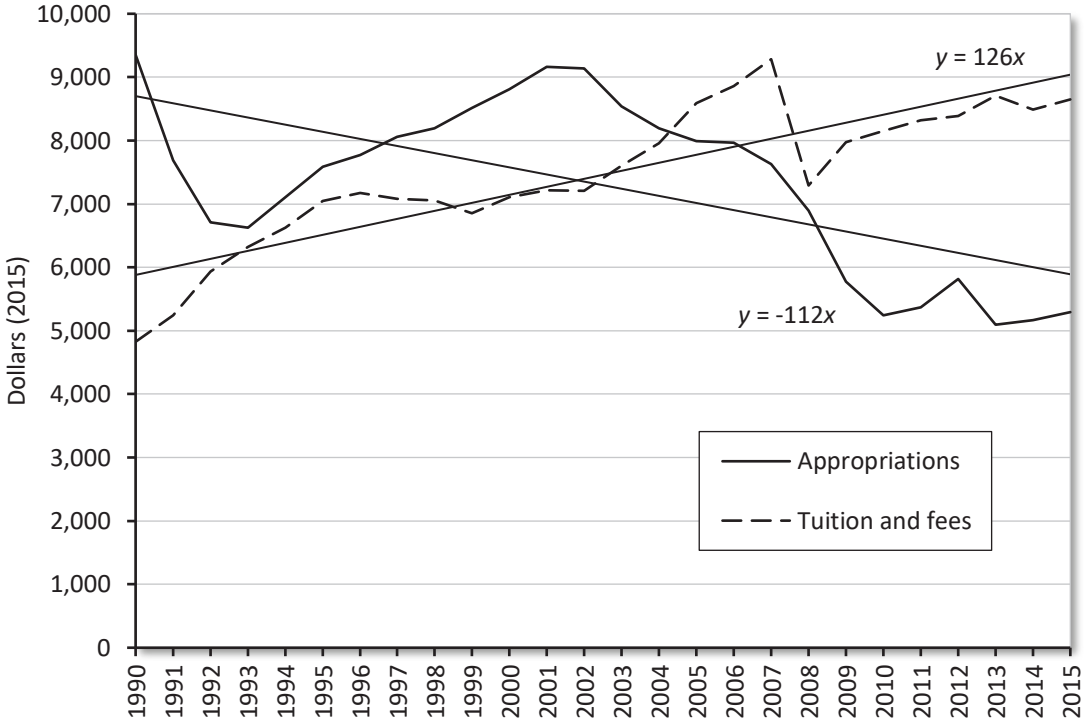
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



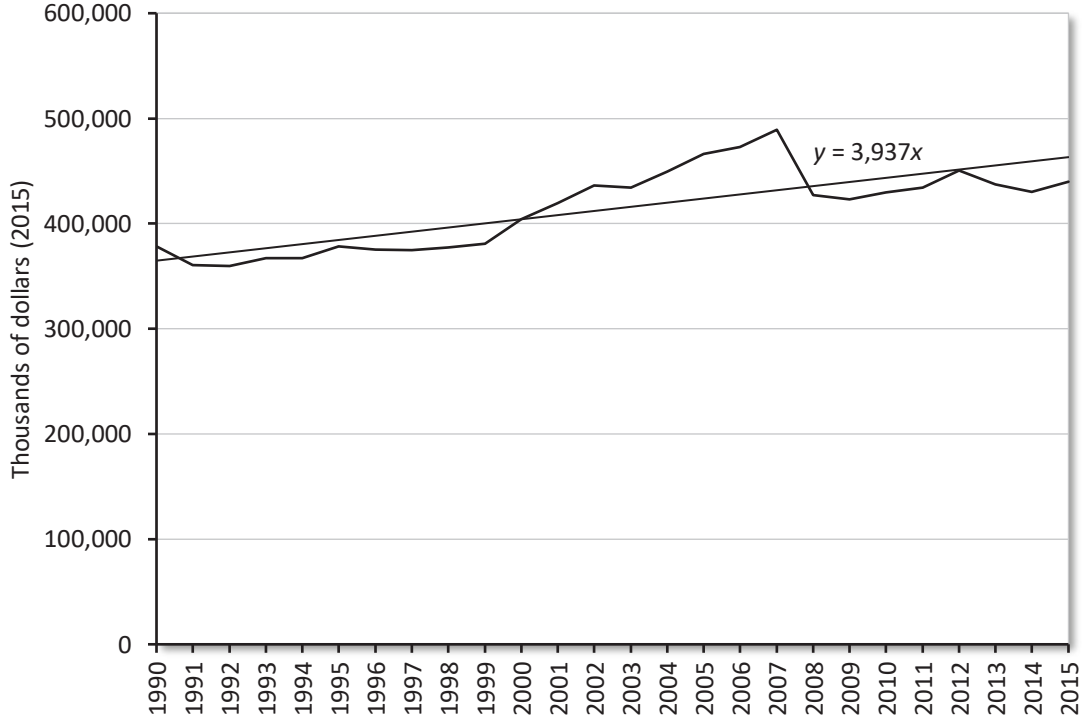
RHODE ISLAND

Net Annual per Pupil Change: $14 Net Change Rank: 35

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



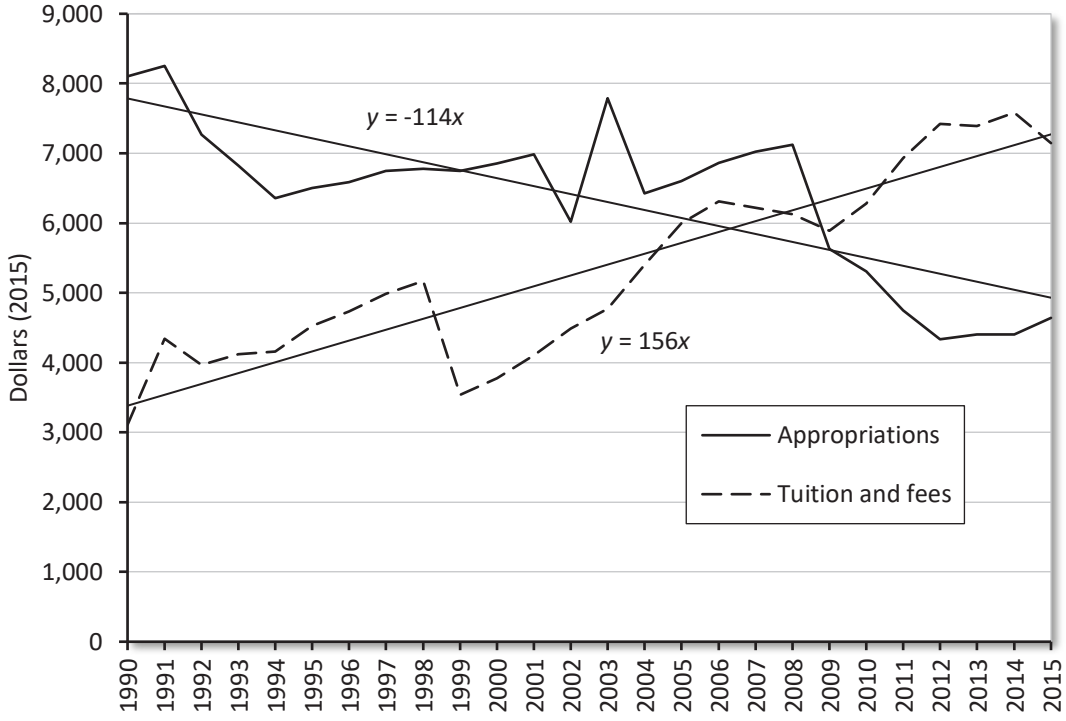
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



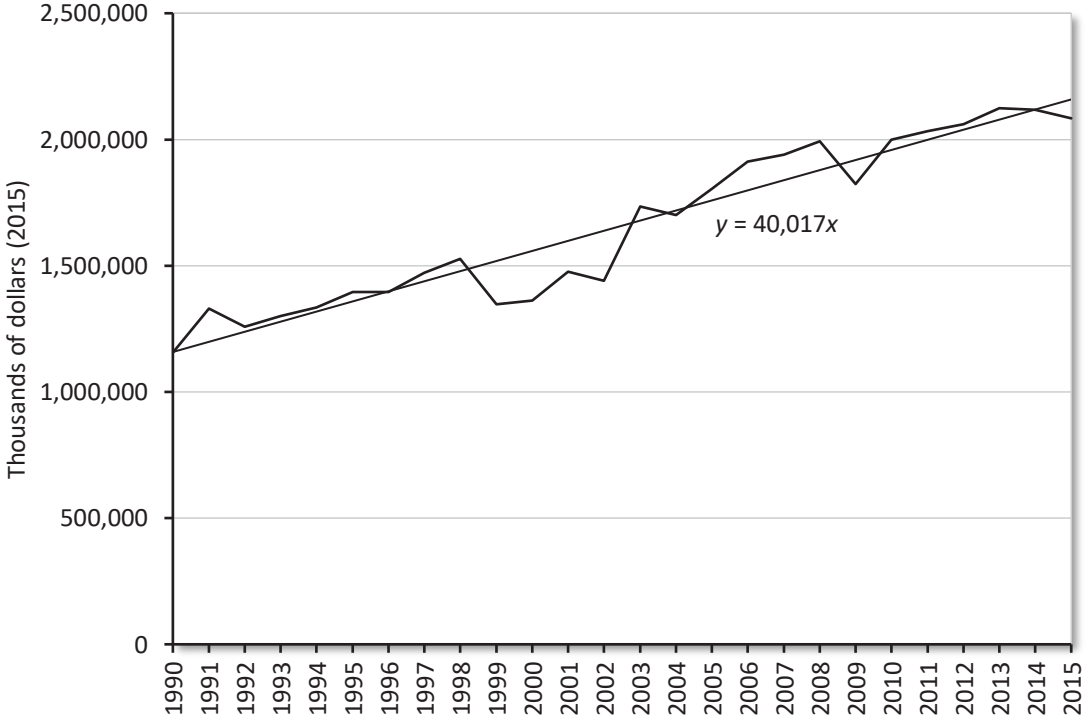
SOUTH CAROLINA

Net Annual per Pupil Change: $42 Net Change Rank: 25

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



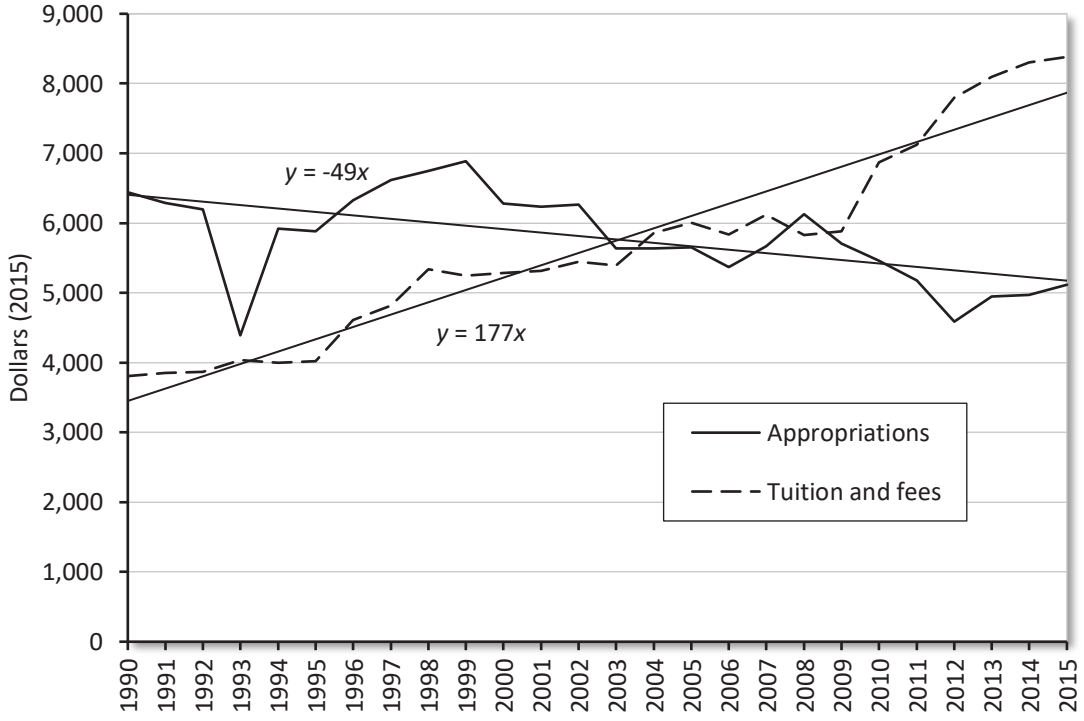
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



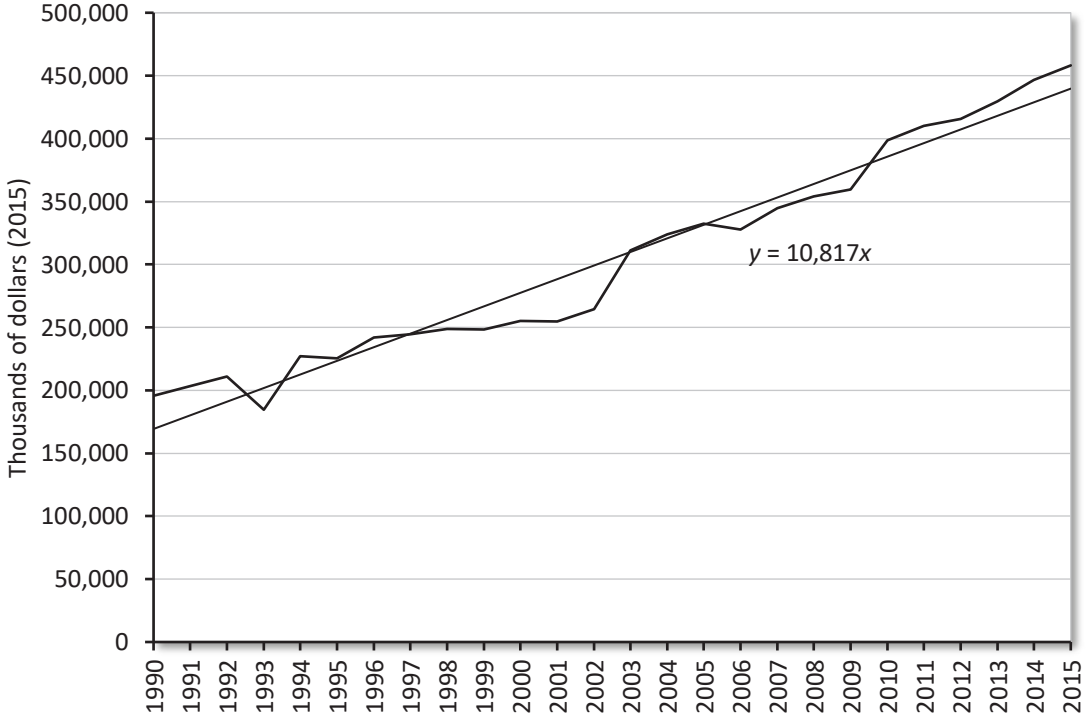
SOUTH DAKOTA

Net Annual per Pupil Change: $128 Net Change Rank: 10

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



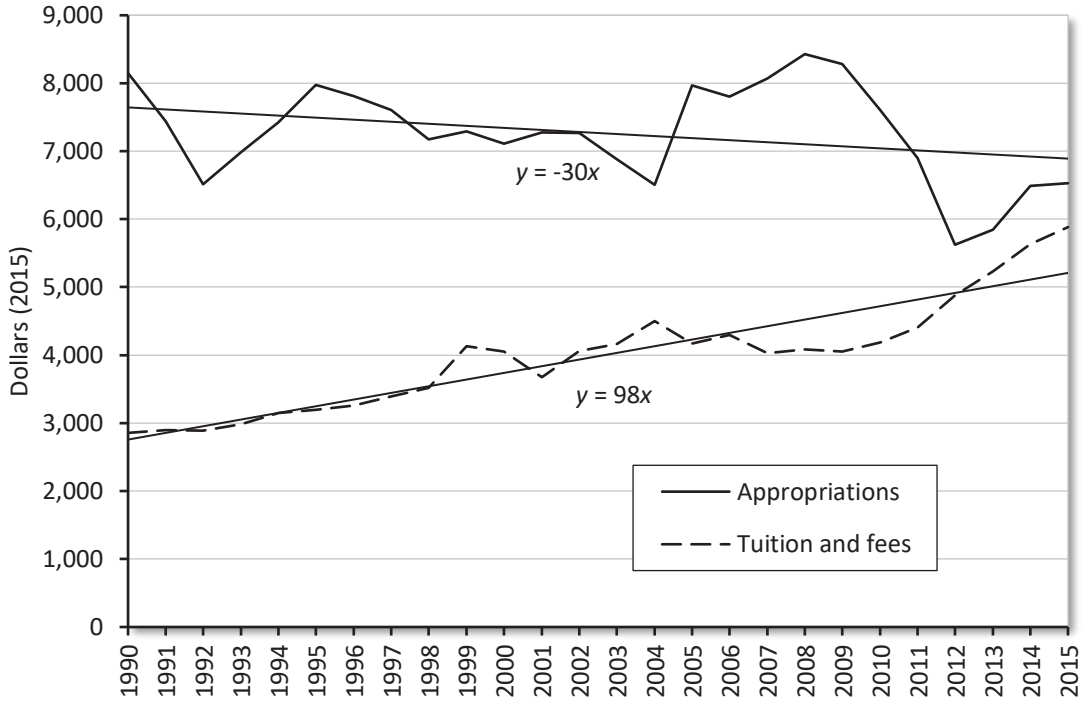
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



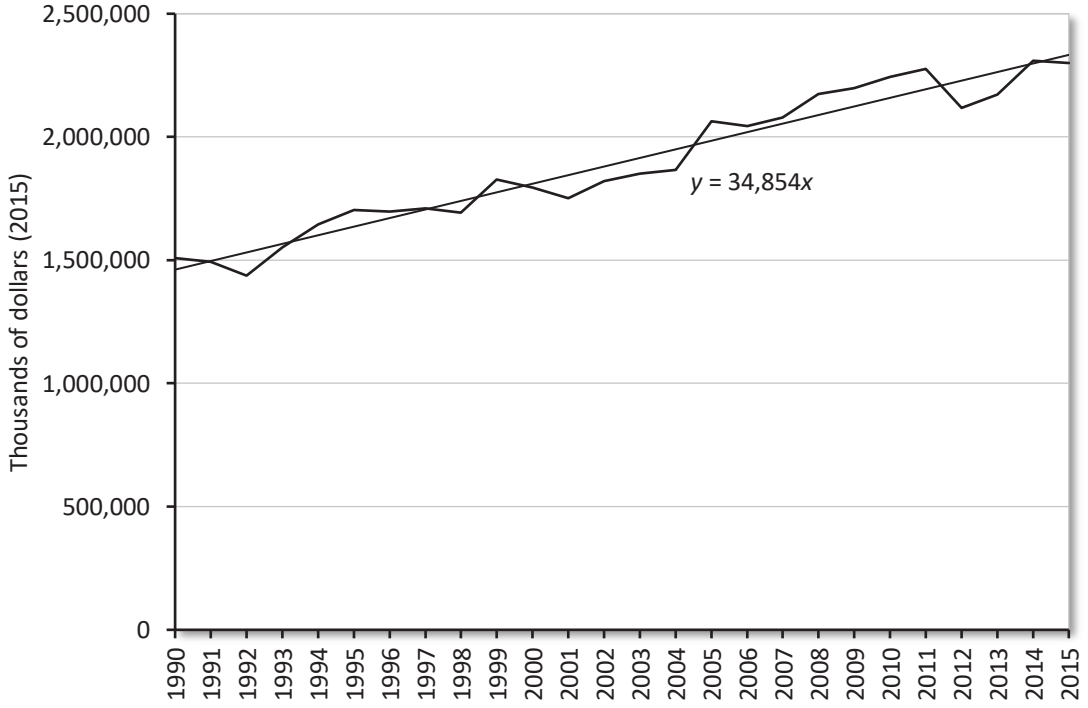
TENNESSEE

Net Annual per Pupil Change: $68 Net Change Rank: 19

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



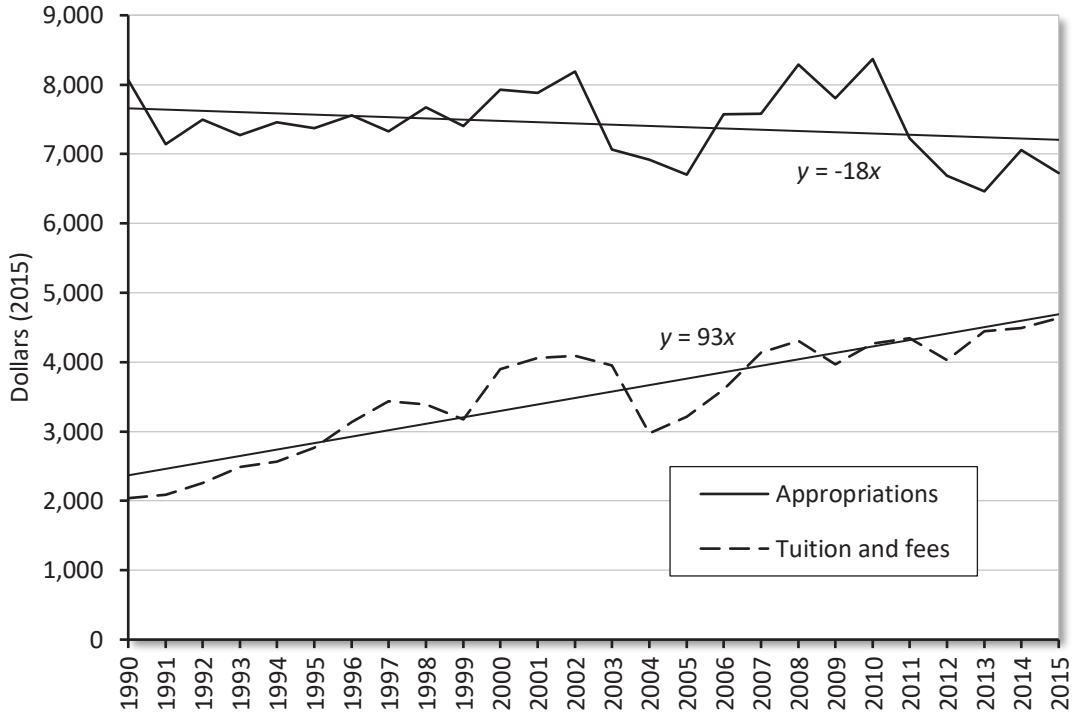
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



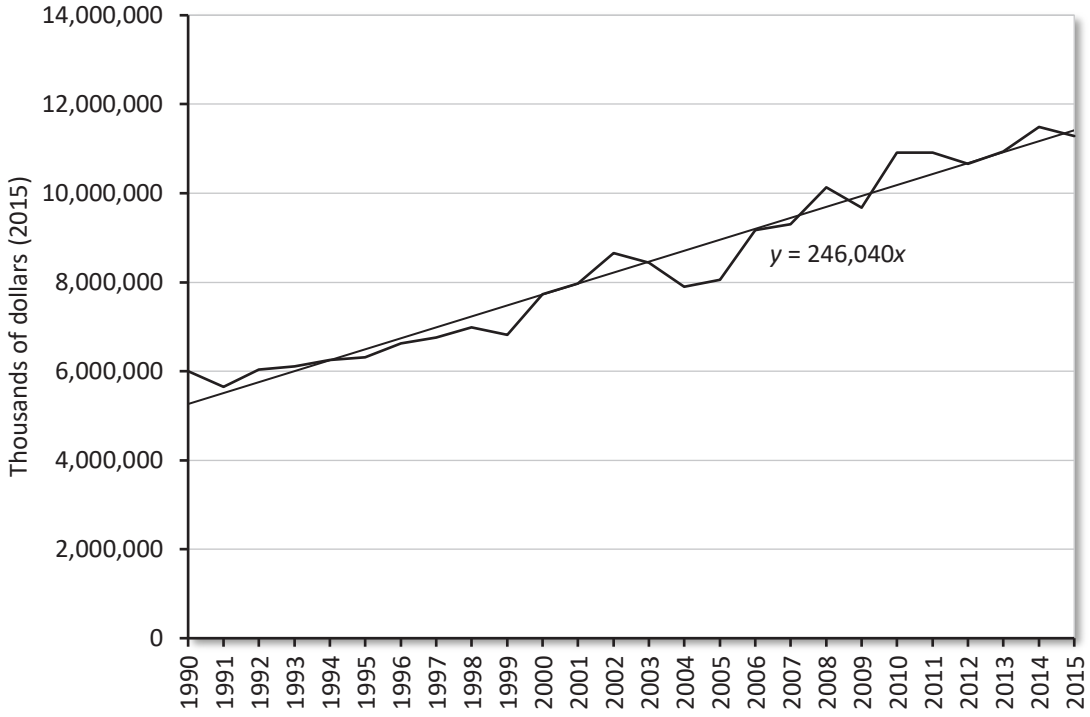
TEXAS

Net Annual per Pupil Change: $75 Net Change Rank: 14

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



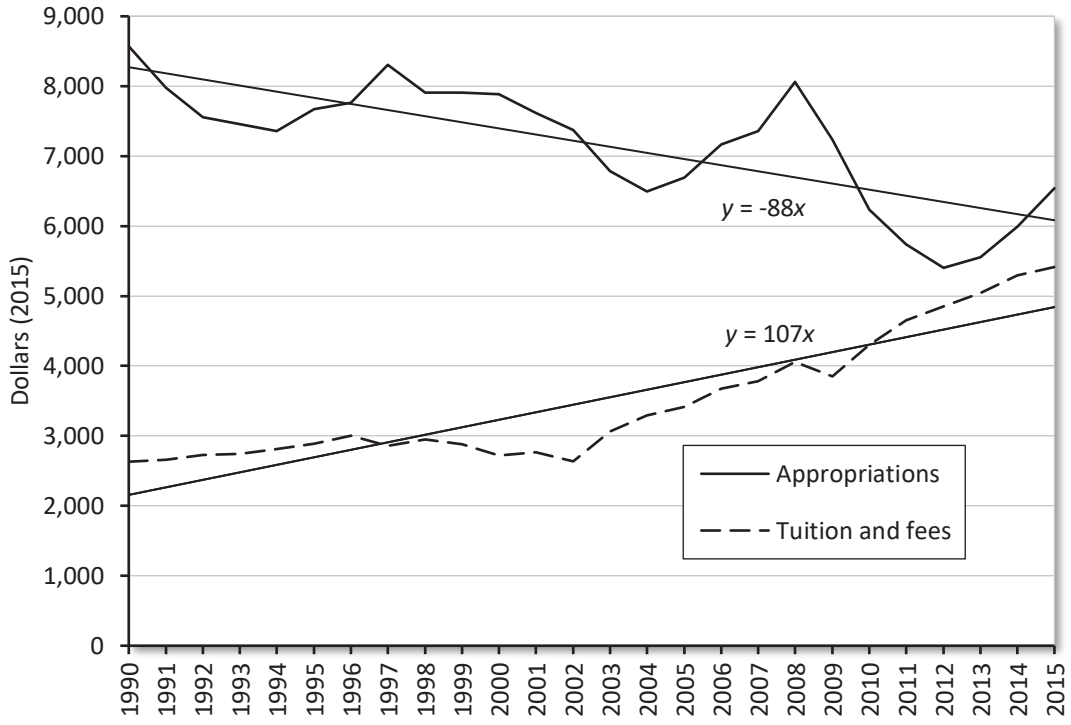
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



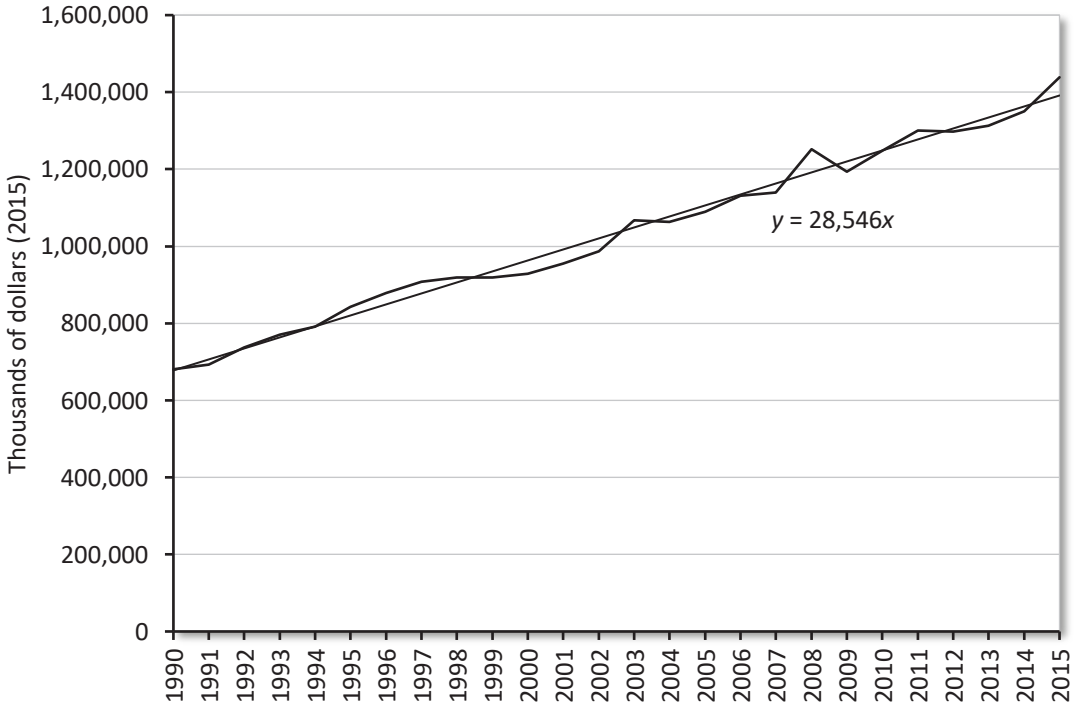
UTAH

Net Annual per Pupil Change: $19 Net Change Rank: Tied 32

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



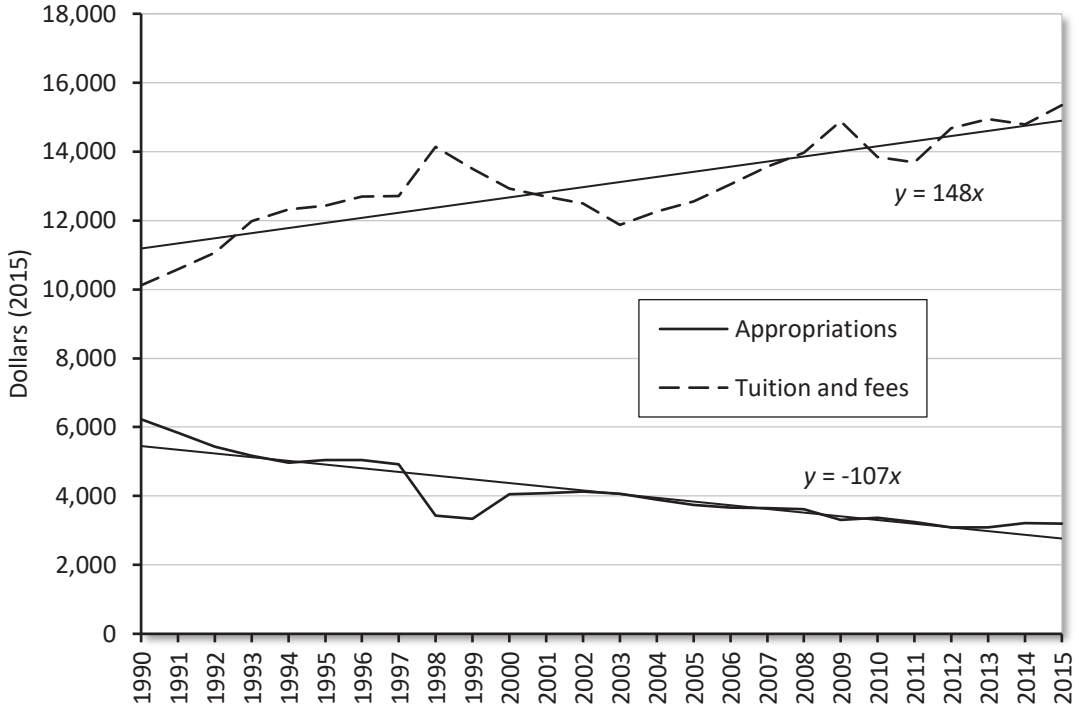
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



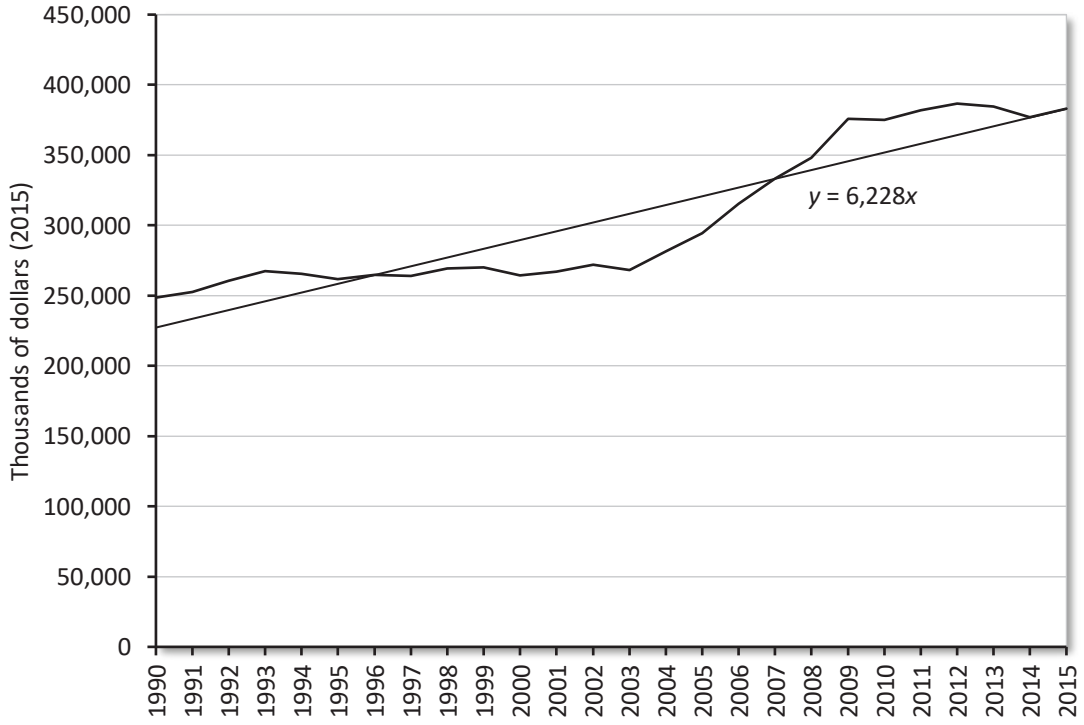
VERMONT

Net Annual per Pupil Change: $41 Net Change Rank: Tied 26

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



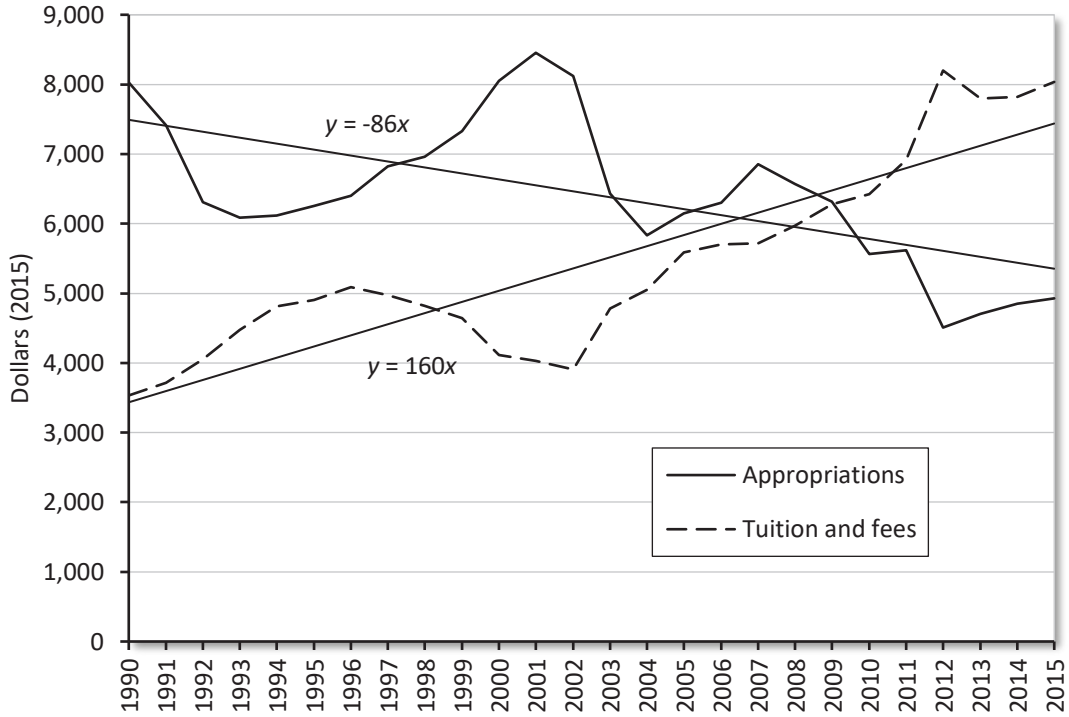
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



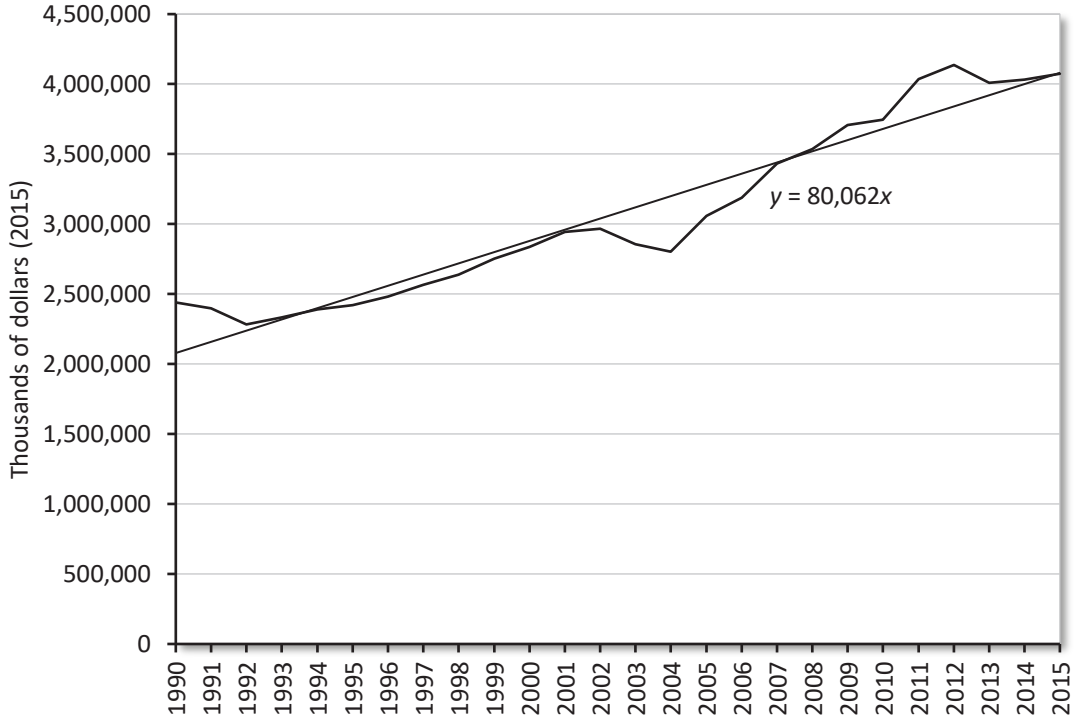
VIRGINIA

Net Annual per Pupil Change: $74 Net Change Rank: 15

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



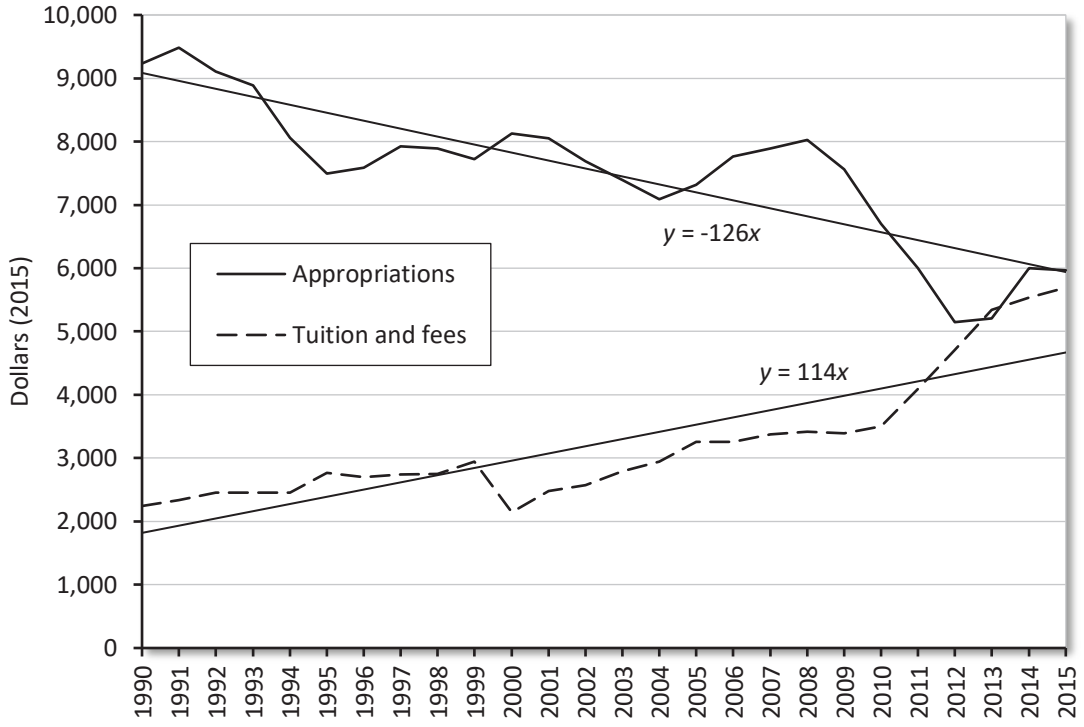
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



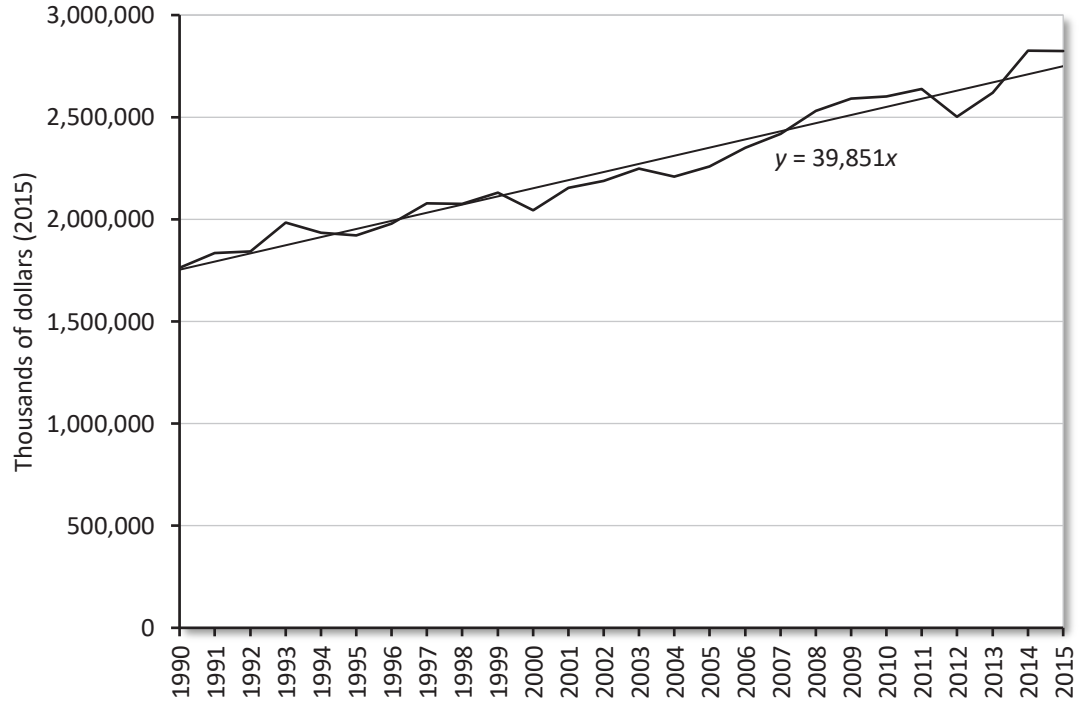
WASHINGTON

Net Annual per Pupil Change: -$12 Net Change Rank: 44

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



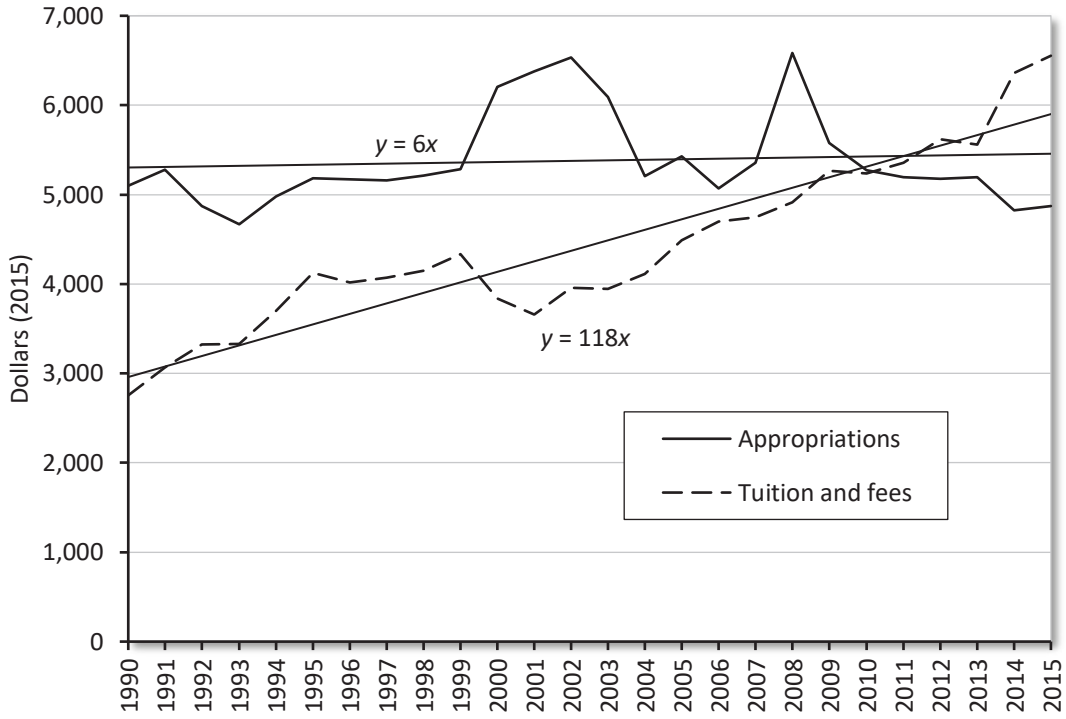
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



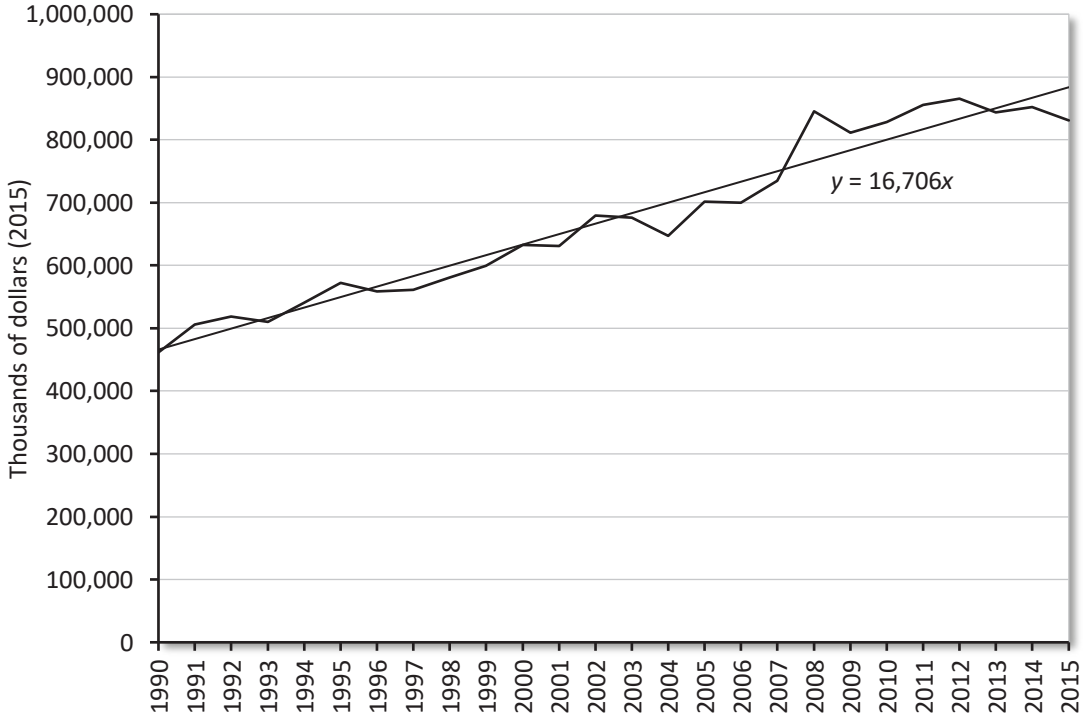
WEST VIRGINIA

Net Annual per Pupil Change: $124 Net Change Rank: 11

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



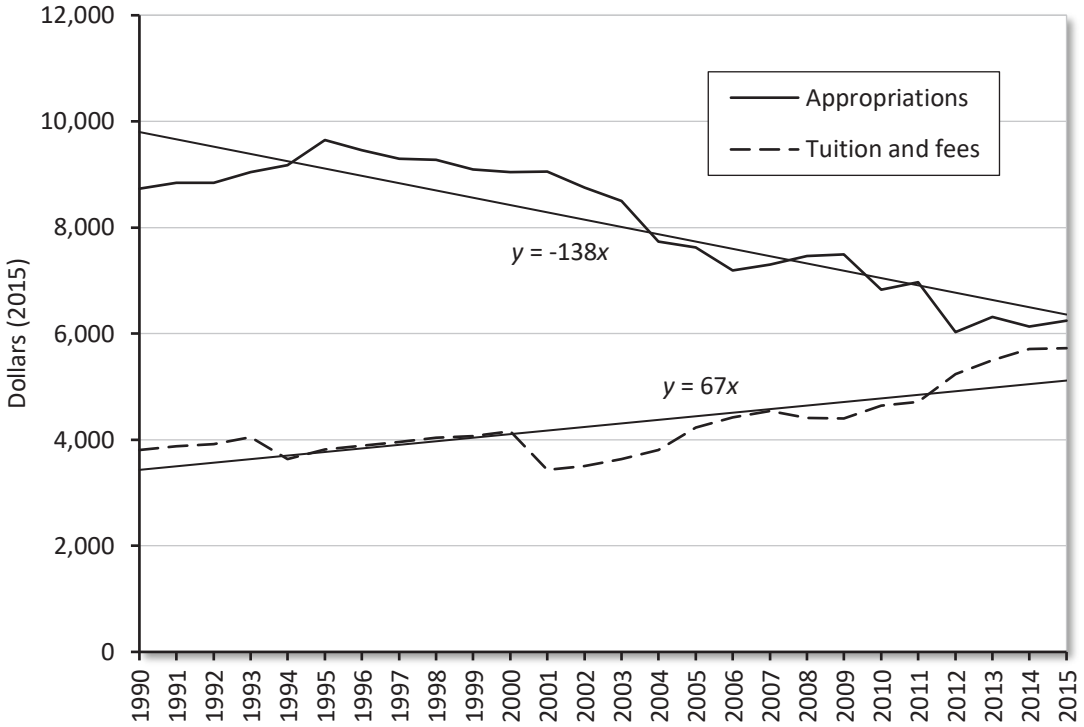
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



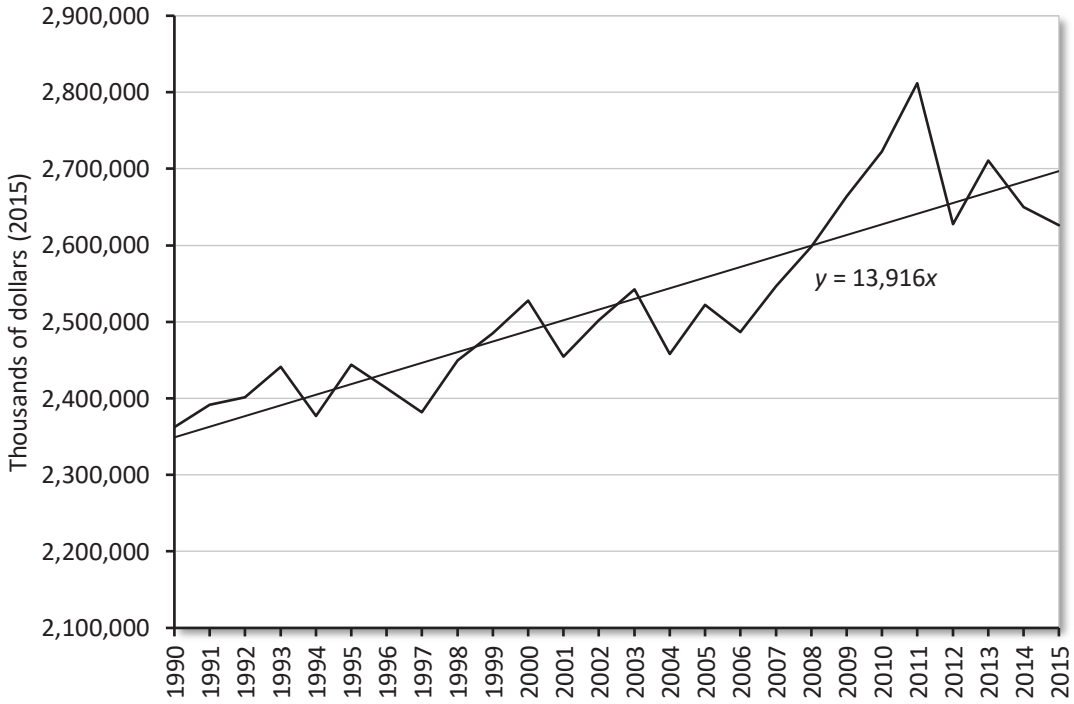
WISCONSIN

Net Annual per Pupil Change: -$71 Net Change Rank: 49

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



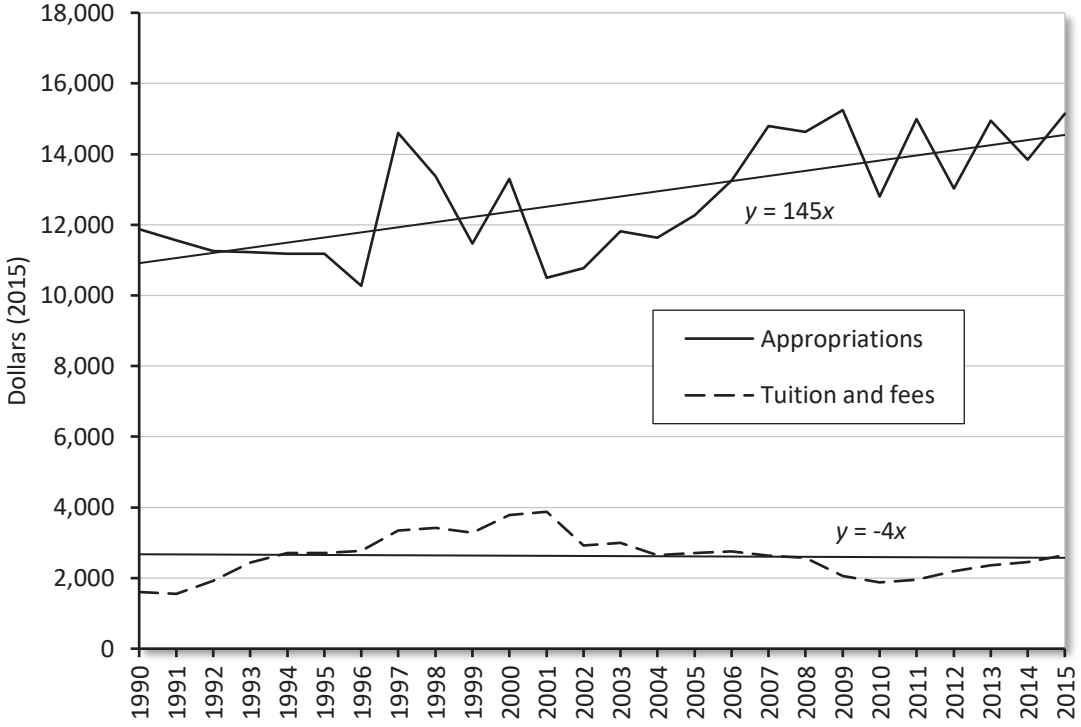
Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



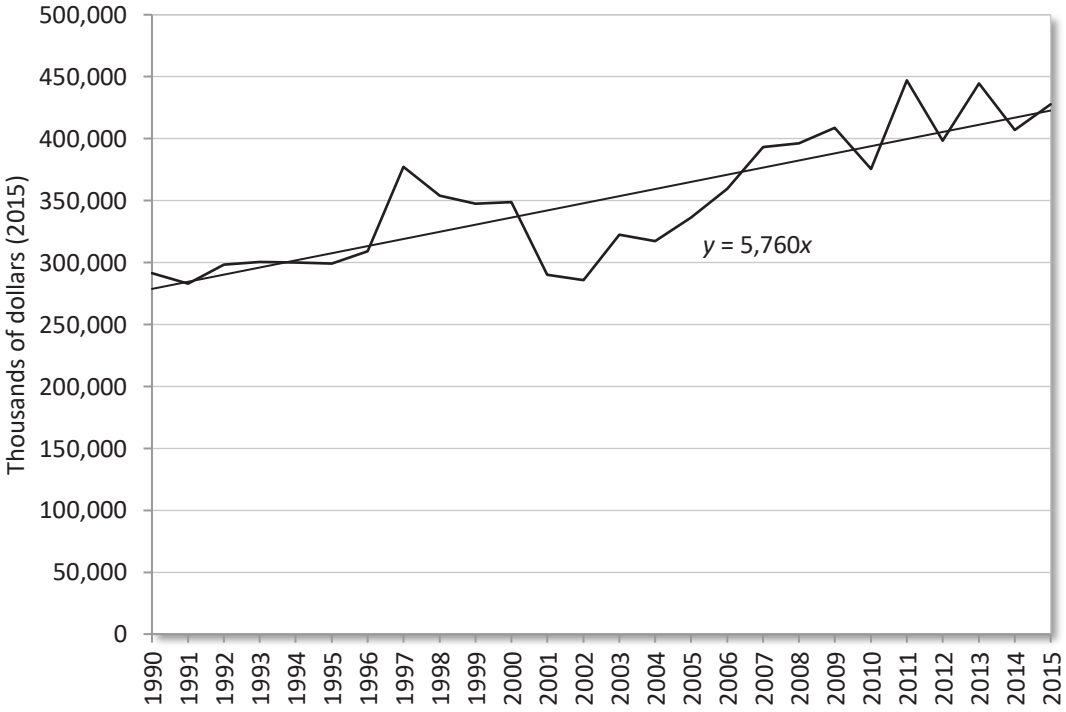
WYOMING

Net Annual per Pupil Change: $141 Net Change Rank: 9

State and Local Appropriations per Full-Time-Equivalent Student versus Net Tuition Revenue per Full-Time-Equivalent Student, 1990–2015 (in 2015 dollars)



Total Appropriation and Tuition-and-Fee Revenue (in thousands of 2015 dollars)



NOTES

1. For more information, see Andrew Gillen and Jonathan Robe, "Stop Misusing Higher Education-Specific Price Indices," Center for College Affordability and Productivity, March 2011, http://centerforcollegeaffordability.org/uploads/Stop_Misusing_Price_Indices.pdf.

2. Rick Seltzer, "How to Count Higher Ed Costs," *Inside Higher Ed*, June 28, 2016, https://www.insidehighered.com/news/2016/06/28/higher-education-cost-adjustment-under-fire-again.

3. In the 2013–14 academic year, less than 1 percent of revenue at private four-year colleges came from state and local appropriations. At four-year public colleges, about 17 percent of total revenues came from state appropriations, and essentially none came from local sources. Two-year public colleges received about 24 percent of their revenue from state sources and 19 percent from local. National Center for Educational Statistics, *Digest of Education Statistics, 2015*, Table 333.40, https://nces.ed.gov/programs/digest/d15/tables/dt15_333.40.asp?current=yes, and Table 333.10, https://nces.ed.gov/programs/digest/d15/tables/dt15_333.10.asp?current=yes.

4. Andrew Gillen, "Public College Revenue per Student Reaches Record High," Andrew Gillen's Blog, June 21, 2016, http://www.andrewjgillen.com/?p=276.

5. CPI adjustments applied to data in State Higher Education Executive Officers, "SHEF: FY 2015, State Higher Education Finance," Table 2, http://sheeo.org/sites/default/files/project-files/SHEEO_FY15_Report_051816.pdf.

6. State Higher Education Executive Officers, "Unadjusted Nominal Data Set (XLS)," *SHEF — State Higher Education Finance FY15*, http://www.sheeo.org/projects/shef-fy15.

7. Terry W. Hartle, "Statement of Terry W. Hartle, senior vice president, American Council on Education, before the Committee on Ways and Means Subcommittee on Oversight of the U.S. House of Representatives on the Rising Costs of Higher Education and Tax Policy," October 7, 2015, https://www.acenet.edu/news-room/Documents/Testimony-Hartle-Ways-Means-Oversight-Subcommittee.pdf. Hartle is not alone in making this assertion. See, for instance, David J. Deming et al., "The Value of Postsecondary Credentials in the Labor Market: An Experimental Study," *American Economic Review* 106 (2016): 778.

8. American Council on Education, "About the American Council on Education," http://www.acenet.edu/about-ace/Pages/default.aspx.

9. State Higher Education Executive Officers, "SHEF: FY 2015," p. 10.

10. Ibid.

11. Ibid.

12. Ibid., pp. 11–13.

13. Hartle, "Statement of Terry W. Hartle."

14. Average coverage of lost per-pupil appropriation revenue by per-pupil tuition-and-fee revenue was calculated by averaging state-level per-pupil appropriations changes and state-level per-pupil tuition changes and calculating the percentage coverage of those averages.

15. William J. Baumol and William G. Bowen, *Performing Arts: The Economic Dilemma* (New York: The Twentieth Century Fund, 1966).

16. For a concise critique of the "cost disease," see Tyler Cowen, "Why I Do Not Believe in the Cost-Disease," *Journal of Cultural Economics* 20 (1996): 207–14.

17. National Center for Educational Statistics, *Digest of Education Statistics*, 2015, Table 314.10, https://nces.ed.gov/programs/digest/d15/tables/dt15_314.10.asp?current=yes.

18. National Center for Educational Statistics, *Digest of Education Statistics, 2015*, Table 314.20,

https://nces.ed.gov/programs/digest/d15/tables/dt15_314.20.asp?current=yes. Note that this table includes data up to 2013 but reclassifies all administrative positions as "other," thus rendering previous years' data incomparable.

19. Robert B. Archibald and David H. Feldman, *Why Does College Cost So Much?* (New York: Oxford University Press, 2011).

20. Richard Arum and Josipa Roksa report in *Academically Adrift: Limited Learning on College Campuses* (Chicago: University of Chicago Press, 2011), p. 3, that in the early 1960s, college students spent 40 hours per week on academic pursuits, versus just 27 hours in 2011. Time spent studying declined from 25 hours per week in 1961 to 20 hours in 1980 and 13 hours in 2003. The National Assessment of Adult Literacy determined that in 1992, about 40 percent of adults whose highest degree was a bachelor's were proficient in reading prose, but by 2003—the only other year the assessment was administered—only 31 percent were. Among people with advanced degrees, prose proficiency dropped from 51 percent to 41 percent. Mark Kutner, et al., "Literacy in Everyday Life: Results From the 2003 National Assessment of Adult Literacy," National Center for Education Statistics, April 2007, http://files.eric.ed.gov/fulltext/ED495996.pdf, pp. 3739.

21. William J. Bennett, "Our Greedy Colleges," *New York Times*, February 18, 1987, http://www.nytimes.com/1987/02/18/opinion/our-greedy-colleges.html.

22. Robert B. Archibald and David H. Feldman, "Does Federal Aid Drive College Tuition?" *Regulation* (Summer 2016): 12–18.

23. Brian Jacob, Brian McCall, and Kevin M. Stange, "College as Country Club: Do Colleges Cater to Students' Preferences for Consumption?" National Bureau of Economic Research Working Paper 18745, January 2013.

24. Archibald and Feldman, *Why Does College Cost So Much?*, p. 14.

25. Campuses with indulgent water facilities include the University of Missouri, Missouri State, Texas Tech, Louisiana State University, Auburn University, Texas A&M, and Colorado State. See Neal McCluskey, "How am I Supposed to Learn Anything without a Lazy River and Wet Wall?" *SeeThruEdu*, May 19, 2015, http://www.seethruedu.com/how-am-i-supposed-to-learn-anything-without-a-lazy-river-and-wet-wall/.

26. In the 2015–16 academic year, 43 percent of students from families making at least $100,000 a year received scholarships, and 65 percent of those received scholarships from their institutions, according to the student loan company Sallie Mae. See Sallie Mae and Ipsos Public Affairs, "How America Pays for College 2016," http://news.salliemae.com/files/doc_library/file/HowAmericaPaysforCollege2016FNL.pdf, pp. 35-36. See also Stephen Burd, "The Out-of-State Student Arms Race: How Public Universities Use Merit Aid to Recruit Nonresident Students," New America, May 2015, https://static.newamerica.org/attachments/3120-out-of-state-student-arms-race/OutOfStateArmsRace-Final.b93c2211cdfb4c3da169d668fbb67cc1.pdf.

27. Alisa F. Cunningham et al., "Study of College Costs and Prices, 1988–89 to 1997–98, Volume 1," National Center for Education Statistics, December 2001, http://nces.ed.gov/pubs2002/2002157.pdf, pp. 12–16.

28. Aaron Hedlund and Grey Gordon, "Accounting for the Rise in College Tuition," National Bureau of Economic Research Working Paper 21967, February 2016, http://www.nber.org/papers/w21967.

29. See Neal McCluskey, "College Aid Not Helping Students," https://www.cato.org/research/reading-list-college-aid-not-helping-students.

30. Bridget T. Long, "The Impact of Federal Tax Credits for Higher Education Expansion," in *College Choices: The Economics of Where to Go, When to Go, and How to Pay for It*, ed. Caroline M. Hoxby

(Chicago: University of Chicago Press, 2004), pp. 101–165.

31. State Higher Education Executive Officers, "SHEF: FY 2015, State Higher Education Finance," p. 3.

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