TRENDS IN STATE FUNDING AND TUITION REVENUE FOR PUBLIC HIGHER EDUCATION: 1980–2021

by Andrew Gillen, Ph.D.

August 2022

Texas Public Policy Foundation

August 2022

by Andrew Gillen, Ph.D.
Texas Public Policy Foundation

Table of Contents

Trends in State Funding and Tuition Revenue for Public Higher Education: 1980–2021

Andrew Gillen, Ph.D.

This paper is an update of our past research on trends in state funding and tuition revenue for public higher education, adding the newly available data for 2021. Previous iterations include Gillen, 2019, Gillen, 2020, and Gillen, 2021.

Key Points

- From 1980 to 2021, state funding has increased by $19 to $54 per student per year. This sustained increase in funding indicates that "state disinvestment" is a myth.
- State funding has completely recovered from the cuts made during the Great Recession and did not fall during the pandemic.
- From 1980 to 2021, tuition revenue increased by $132 to $148 per student per year. However, this historical pattern may be over as tuition revenue has been trending down for the past three years.
- Inflation-adjusted total educational/instructional revenue increased substantially over time, reaching $15,959 per student in 2021 (the second highest ever recorded).
- The statistical relationship between changes in state funding and changes in tuition is quite weak, providing little support for the argument that tuition is rising to make up for cuts in state funding.

Executive Summary

Public universities have two main revenue sources to cover educational costs—state funding and tuition revenue. This annual report documents trends in both revenue sources from 1980 to 2021. The conventional wisdom holds that higher education has been suffering from cuts to state funding (often described as state disinvestment), but the data show that states have increased state funding per student over time. Over the past four decades, inflation-adjusted state funding has typically increased by $19 to $54 per student per year. During that time, tuition revenue has increased at a rate of between $132 and $148 per student per year. The combined effect of these trends has led to sustained increases in total educational revenue (the amount of revenue available for instruction) per student, with 2021 total educational revenue reaching $15,959 per student.

Introduction

Public universities have two main revenue sources to cover educational costs—state funding and tuition revenue.[1] Some colleges have other sources of revenue to cover non-educational costs. For example, residential colleges generate revenue from room and board, research universities obtain research grants, and universities with medical schools generate revenue from hospital services. But since not all colleges are residential or have a research focus, and very few colleges have medical schools, this report excludes those revenues and focuses on the "revenue available to public institutions to support instruction" (State Higher Education Executive Officers Association [SHEEO], 2021, p. 2). This total educational revenue is the sum of state funding and tuition revenue.

This study documents trends in these two main revenue sources for public universities from 1980 to 2021. After adjusting for inflation, state funding increased by $19 to $54 per student per year, and tuition revenue increased by $132 to $148 per student per year.

These trends lead to several related conclusions.

1 The federal government also provides funding for higher education, but it is not a separate revenue source for two reasons. First, the SHEF report and this study focus on educational/instructional revenue, and the portion of federal funding related to educational/instructional costs typically takes the form of grants or loans that students then use to pay for tuition and other college expenses, which means this funding is already counted as tuition revenue. Second, the funding that the federal government provides directly to colleges and universities is generally not included because that funding is largely tied to research rather than instructional activities (e.g., National Institutes of Health grants).

State Disinvestment Is a Myth

State disinvestment is the idea that higher education has been suffering from cuts to state funding for decades. Belief in state disinvestment is widespread within academia (Gillen, 2019), but the data show that the long-term trend in state funding per student is upward, not downward. In fact, state funding per student in 2021 ($9,327 per student) has completely recovered from the cuts made during the Great Recession. State funding per student in 2021 was the second highest on record, only $17 less than funding in 2001 ($9,344).

Tuition Increases Are Not Driven By Cuts in State Funding

Another widespread belief is that rising tuition is explained by cuts to state funding. But the trend in state funding is upward, not downward, so if tuition is driven by changes to state funding, then tuition should be falling, not rising. While state funding per student has increased by $2,722 from 1980 to 2021, it is possible to find stretches of time, particularly during recessions, where funding temporarily declines. But even during periods in which state funding has fallen, the changes in state funding and the changes in tuition do not add up. For example, state funding per student was $17 lower in 2021 than in 2001. Yet over that same period, tuition revenue increased by $2,923 per student. Clearly, most of the increase in tuition revenue cannot be explained by the trivial $17 per student cut in state funding.

Universities Are Historically Well Resourced

The combined effects of the upward trend in both state funding and tuition revenue have led to record levels of total educational revenue, which measures the revenue available to cover instructional costs. Total educational revenue fell by $9 in 2021 but was still the second highest ever recorded ($15,959).

This study proceeds as follows. The next section describes the data used in this report. We then document the trend in state funding at both the national and state levels. We then explore two reasons why the erroneous belief in state disinvestment is so widespread. Next, we explore trends in tuition revenue. Finally, we examine the relationship between changes in state funding and changes in tuition revenue, finding little statistical support for the notion that tuition rises to make up for cuts to state funding.

Data

This study uses data collected by the State Higher Education Executive Officers Association as part of their annual State Higher Education Finance (SHEF) report (SHEEO, 2022a). Both the SHEF report and this report focus on the two main sources of educational revenue for public universities and colleges—state funding and tuition.

In the SHEF dataset (SHEEO, 2022b), these variables are defined as follows:

- "**Education appropriations (calculated)**: State and local support available for public higher education operating expenses and student financial aid excluding research, hospitals, and medical education (RAM). State-level education appropriations include total federal stimulus funding and agency funding." (p. 4)
- "**Net tuition and fee revenue (calculated):** Gross tuition and fee revenue less state-funded student aid, institutional tuition discounts and waivers, and tuition revenue paid by medical students. This is a measure of the resources available from tuition and fees to support instruction and related operations at public higher education institutions and includes revenue from in-state and out-of-state students as well as undergraduate and graduate students." (p. 13)
- "**Total education revenue (calculated):** The sum of education appropriations and net tuition at public institutions, excluding net tuition revenue used or capital debt service. State-level total education revenue includes total federal stimulus funding." (p. 2)

One new complication is the slew of federal stimulus packages enacted during the COVID-19 pandemic that provided higher education with large amounts of funding. A small partition of that funding is classified as a state appropriation. In particular, federal funding that was first given to a state and then passed on to a college is counted as a state appropriation, but federal funding that was provided directly to a college is not classified as a state appropriation (SHEEO, 2022a). In practice, this means that the vast majority of stimulus funding for higher education is not classified as state funding. Of the federal stimulus funding, only $1.2 billion (in 2020) and $3.5 billion (in 2021) were counted as state funding because the funds were first given to a state government before being sent to universities. The stimulus funding that the federal government sent directly to universities is not counted as state funding. The three pandemic stimulus bills earmarked $14 billion, $23 billion, and $40 billion, respectively, for colleges (Whitford, 2021). The portion of those sums allocated to public universities is not counted as state funding.[2]

For simplicity, we refer to education appropriations as "state funding" and net tuition and fee revenue as "tuition revenue." Throughout the report, years refer to fiscal years (which generally run from July to June). All figures have been converted into per student values (using the net full-time equivalent enrollment reported by SHEF). Finally, unless otherwise noted, all figures are adjusted for inflation using the Personal Consumption Expenditures (PCE) price index calculated by the Bureau of Economic Analysis.

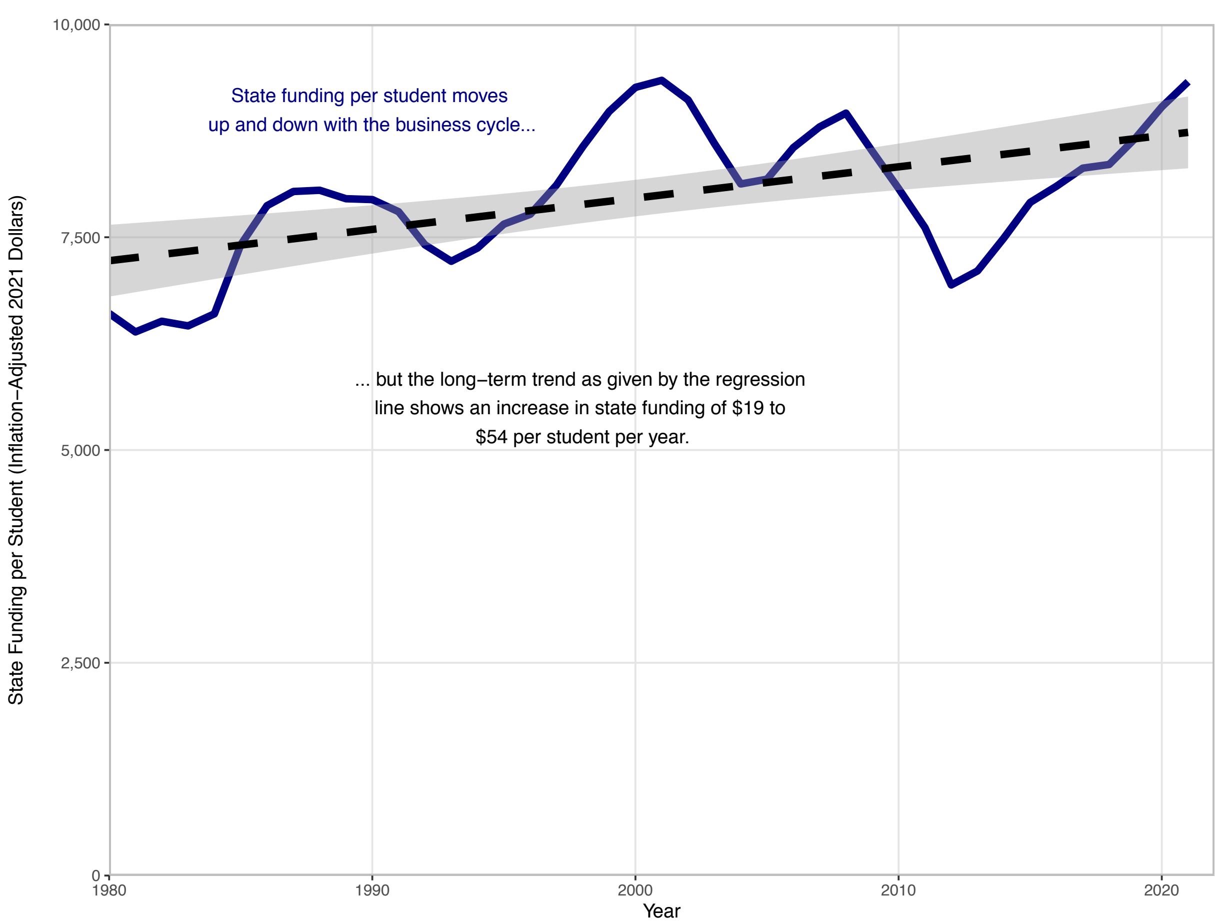
Trends in State Funding

The conventional wisdom within academia and those who write about it is that higher education has been suffering from state disinvestment for decades. But as noted in an earlier study (Gillen, 2019), this is a myth.

The true history of state funding is illustrated in **Figure 1**, which shows inflation-adjusted state funding per student in the U.S. from 1980 to 2021. The ups and downs in state funding follow the business cycle. These swings can make beginning and endpoint comparisons very misleading, particularly if you compare a peak to a trough. To determine the long-run trend more accurately, it is better to use a regression, which estimates the typical yearly change in state funding without being as dependent on the starting and ending dates. This regression is shown by the dotted line in **Figure 1**, with the corresponding confidence interval indicated by the grey-shaded region. The regression results have a point estimate of $37 with a 95% confidence interval of $19 to $54. This means that the long-run trend of state funding per student has been an increase of

Figure 1

Higher Education State Funding per Student: 1980–2021



Note. Data from *SHEF State Higher Education Finance FY 2021*, by State Higher Education Executive Officers Association, 2022 (https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Report.pdf) and author's calculations.

2 Note that none of the figures in this paragraph are adjusted for inflation. In addition, private universities received some of the direct funding.

between $19 and $54 per student per year, with our best estimate being an increase of $37 per student per year.

The ups and downs in state funding driven by the business cycle can be seen even more clearly in **Figure 2**, which shows the change in state funding per student by year. Recessions (indicated by vertical gray shading) do lead to cuts (though the most recent COVID-19—induced recession is a notable exception), and these cuts typically last several years. Once the economy recovers, state funding tends to recover too. For example, during the Great Recession, higher education witnessed four years of cuts in funding, including a massive decline of $674 in 2012. As the economy recovered, state funding then began a sustained upward march that is now in its 9th year, more than making up for the cuts made during the Great Recession.

While overall increases in state funding per student over time discredit the state disinvestment story at the national level, there is considerable variation among the states. **Figure 3** repeats the regression analysis separately for each state.

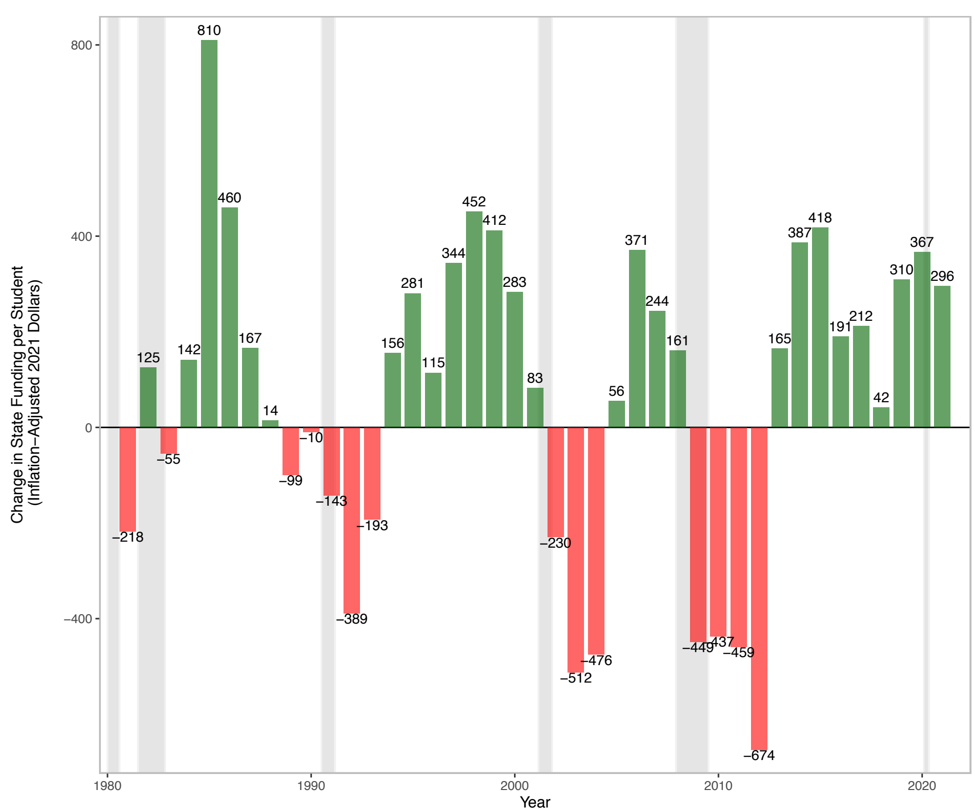
Figure 3 reveals that some states have increased state funding over time while others have reduced it. For example, an upward slope, indicating a trend of increases in state funding, is apparent for Illinois, Nebraska, and Wyoming. A downward slope, indicating a trend of reductions in state funding over time, is apparent for Pennsylvania and Rhode Island.

The level of state funding matters, too, not just the trend. For example, California has a positive trend, increasing state funding by $68 per student per year, whereas Alaska has a negative trend, reducing state funding by $16 per student per year. Yet even after more than four decades of these divergent trends, Alaska still provides much more state funding per student ($21,209) than California ($11,989) because Alaska started from a much higher level of initial funding.

Figure 4 uses a color-coded map to further explore the different state funding trends in the 50 states. Shades of green indicate that the state has an upward trend in state funding over time (as determined by the regression point estimate,

Figure 2

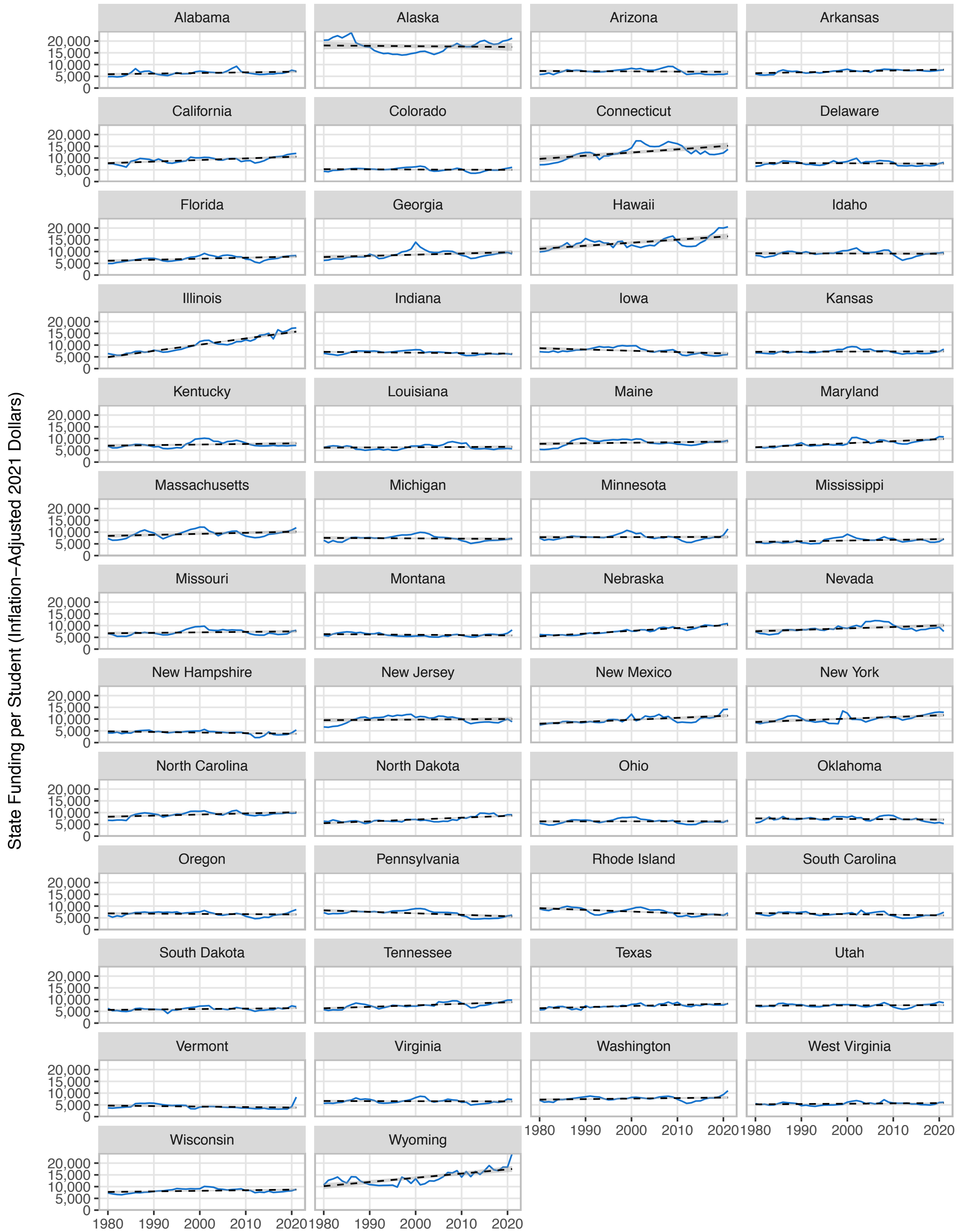
Change in State Funding per Student by Year



Note. Data from *SHEF State Higher Education Finance FY 2021*, by State Higher Education Executive Officers Association, 2022 (https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Report.pdf) and author's calculations.

Figure 3

Higher Education State Funding per Student by State: 1980–2021



Note. Data from *SHEF State Higher Education Finance FY 2021*, by State Higher Education Executive Officers Association, 2022 (https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Report.pdf) and author's calculations.

whether it is statistically significant or not). For example, Illinois has increased state funding by $265 per student per year. Shades of red indicate that a state has reduced state funding over time. For example, Pennsylvania has reduced funding by $63 per student per year.

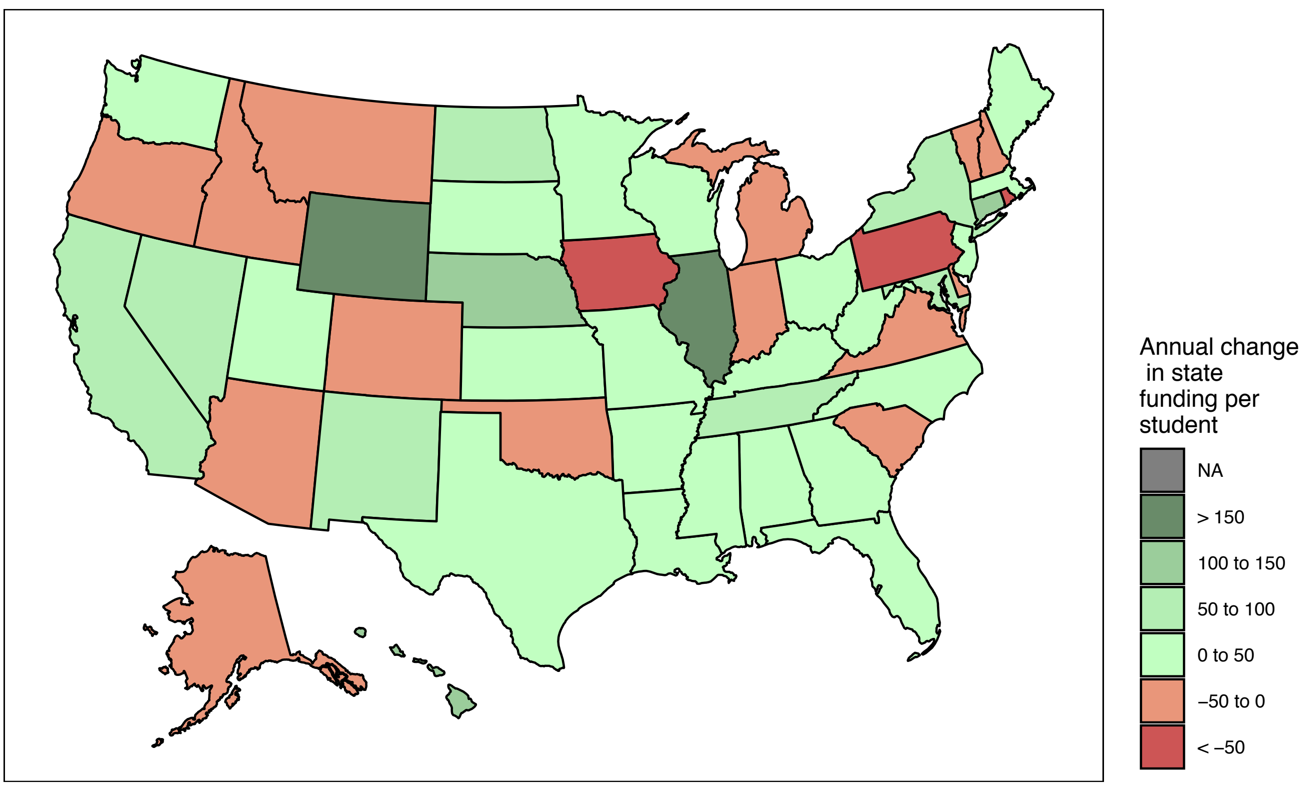
While **Figure 4** provided the point estimates of the regression results, not all of these estimates are statistically significant. **Figure 5** shows the confidence interval from the regression for each state. The confidence interval relies on the variation within the data to determine the range of likely values for the point estimate. In other words, 95% of the time, the point estimate for hypothetical data with the same variation would fall within the confidence interval. For example, Illinois's 95% confidence interval is $238 to $291, which means we expect the true trend in state funding per student—the regression's point estimate—to fall between $238 and $291, 95% of the time.

If a confidence interval includes the value of $0 (the dashed vertical line on the chart), then the standard conclusion is that the point estimate is not statistically significant (at the 5% level). Consider Kansas, which has a point estimate of $5 and a confidence interval of -$17 to $26. This means that while our best estimate is that state funding in Kansas increases by $5 per student per year, the true value could reasonably be anywhere between -$17 and $26, including $0. Therefore, for cases where the confidence interval includes $0, the safest conclusion is that we do not know if there is an upward or downward trend in state funding over time (not-statistically significant in statistical jargon).

Among all 50 states, state disinvestment is convincing in just 6 states—Rhode Island, Pennsylvania, Iowa, New Hampshire, South Carolina, and Indiana. Twenty-two states have no clear positive or negative trend in state funding over time, and 22 states have convincing increases in state funding over time. In other words, for every state in which state disinvestment is a reality, there are more than three states where funding is increasing over time, and more than three with no upward or downward trend in state funding.

Figure 4

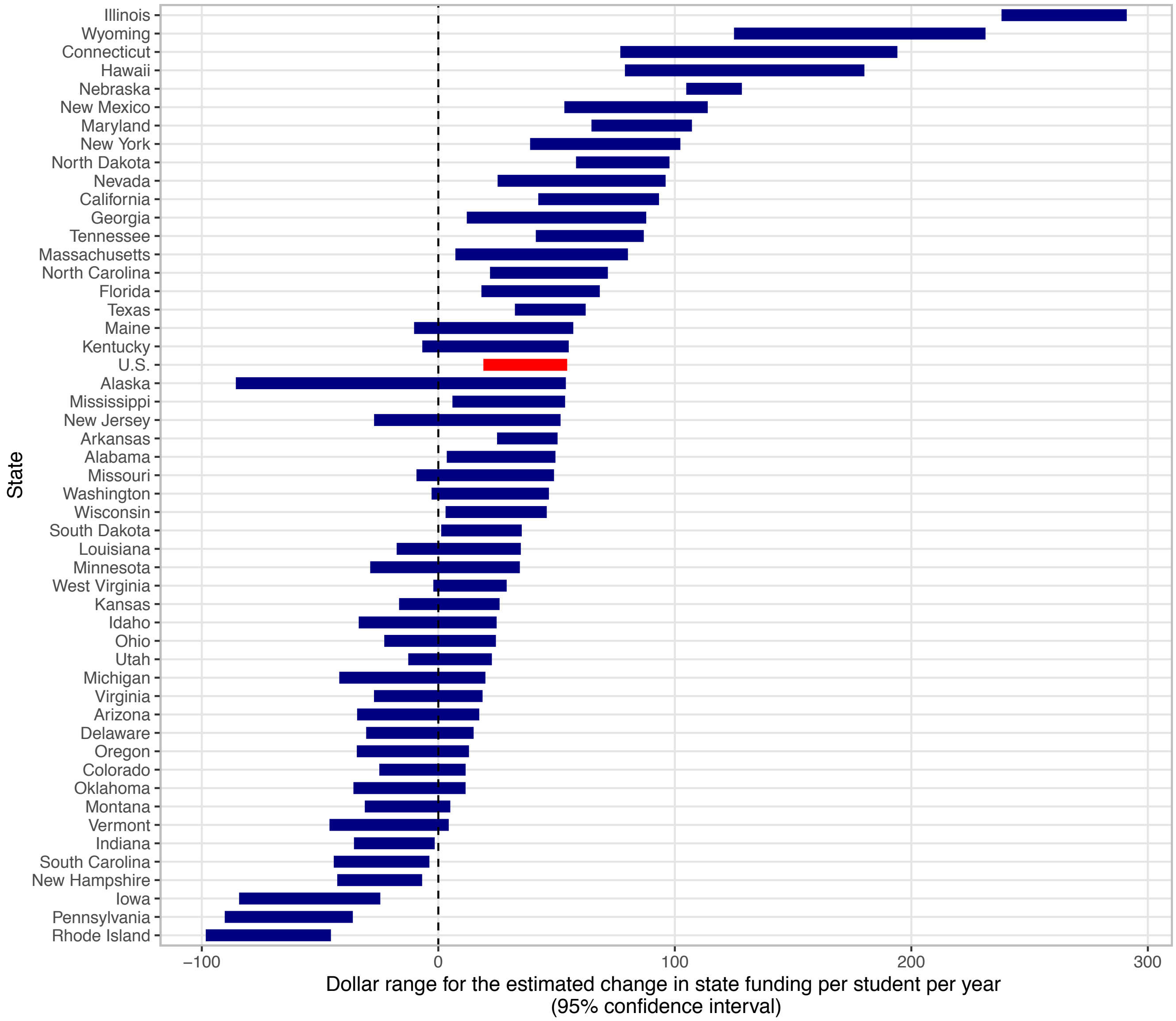
Annual Change in per Student State Funding for Higher Education



Note. Based on data from 1980 to 2021, with the long-run annual change determined by the point estimate of a regression.
Data from *SHEF State Higher Education Finance FY 2021*, by State Higher Education Executive Officers Association, 2022 (https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Report.pdf) and author's calculations.

Figure 5

Annual Change in State Funding per Student by State



Note. Data from *SHEF State Higher Education Finance FY 2021*, by State Higher Education Executive Officers Association, 2022 (https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Report.pdf) and author's calculations.

Why Is Belief in the State Disinvestment Myth So Common?

If the data show there is a nationwide increase in state funding for higher education over time, and that this trend has been going on for more than four decades, why do so many people believe the opposite—that higher education is suffering from state disinvestment? This misconception is primarily attributable to two errors: generalizing from unrepresentative data and not correcting for inflation.

Generalizing From Unrepresentative Data

The first error many people make is using unrepresentative data to draw sweeping conclusions. Adherents of state disinvestment will often compare funding to a peak funding year. Since state funding typically falls during recessions, a common choice is to compare funding to just prior to a recession. For example, for most of the last decade, many comparisons have been made to 2008, the last year before funding started falling due to the Great Recession. In 2021, after nine years of increases, state funding is $369 higher than in 2008, meaning that state funding has entirely recovered from the cuts made during the Great Recession. But at the state level, there was more variation, as shown in **Figure 6**. Funding has exceeded the 2008 value in some states, but other states had lower funding in 2021 than in 2008.

Some state disinvestment advocates focus on 2001, which saw the highest-ever state funding for higher education. And indeed, at the national level, state funding was $17 lower in 2021 than it was in 2001.

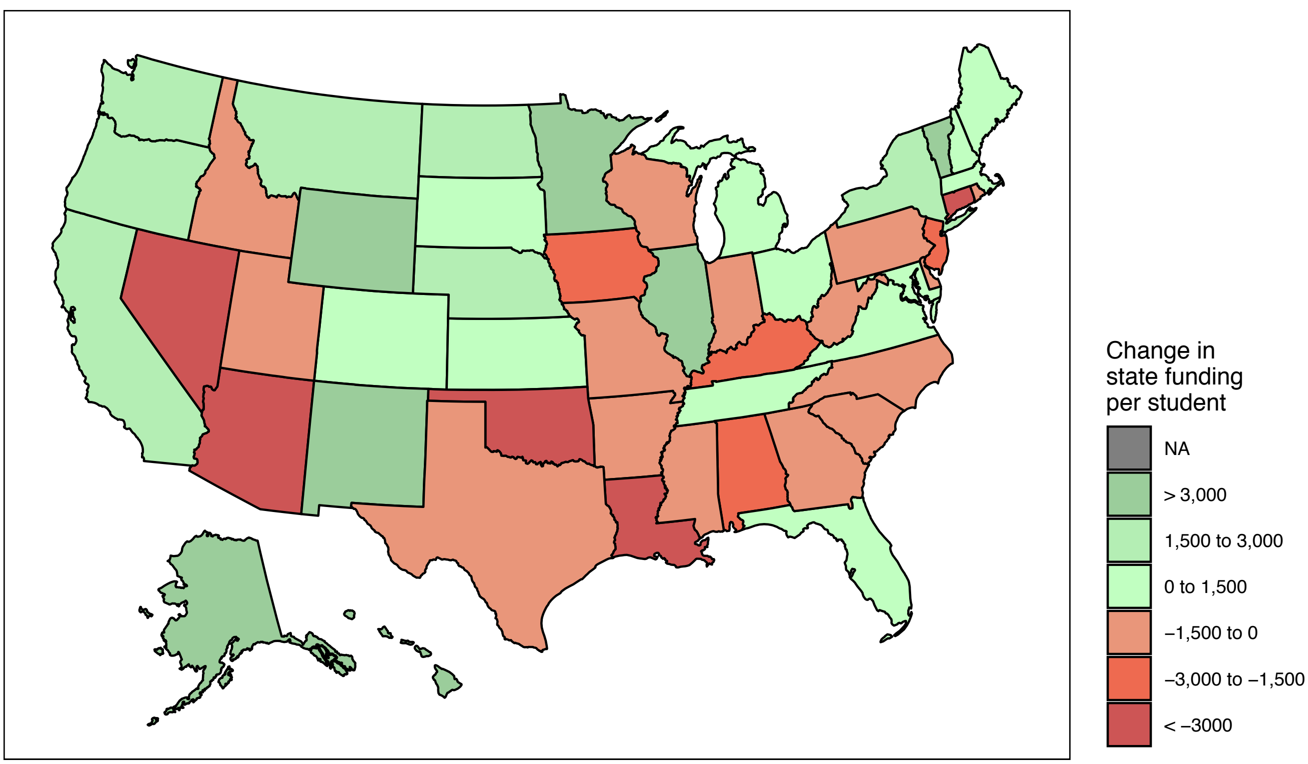
But to conclude from this that there has been state disinvestment is a mistake because it relies on unrepresentative starting and ending dates, leading to unreliable conclusions. For instance, if some point to a $17 decline in state funding per student from 2001 to 2021 as evidence of state disinvestment, what is to stop others from pointing to the more recent increase in state funding per student of $2,388 from 2012 to 2021 as evidence of an upward trend in state funding? The reality is that while both statements are accurate, neither is convincing evidence of a larger trend because both rely on unrepresentative, cherry-picked starting years.

Unless there is evidence of a clear structural discontinuity in the data that warrants breaking the sample up, comparisons are on safer ground when they use all the available data, since that alleviates worries about cherry-picking. For the SHEF data, that means starting in 1980, the first year for which data are available. At the national level, state funding has increased by $2,722 per student between 1980 and 2021. **Figure 7** shows the change in state funding since 1980 for the individual states, showing that most states have increased state funding per student over the last four decades.

But while using all the data avoids the cherry-picking problem, it still suffers from the potential unrepresentativeness of the beginning and ending points. In fact, the regression line in **Figure 1** indicates that the level of state funding in 1980 was uncharacteristically low, likely due to the recession that started that year, so even using all the data might not lead to reliable conclusions.

Figure 6

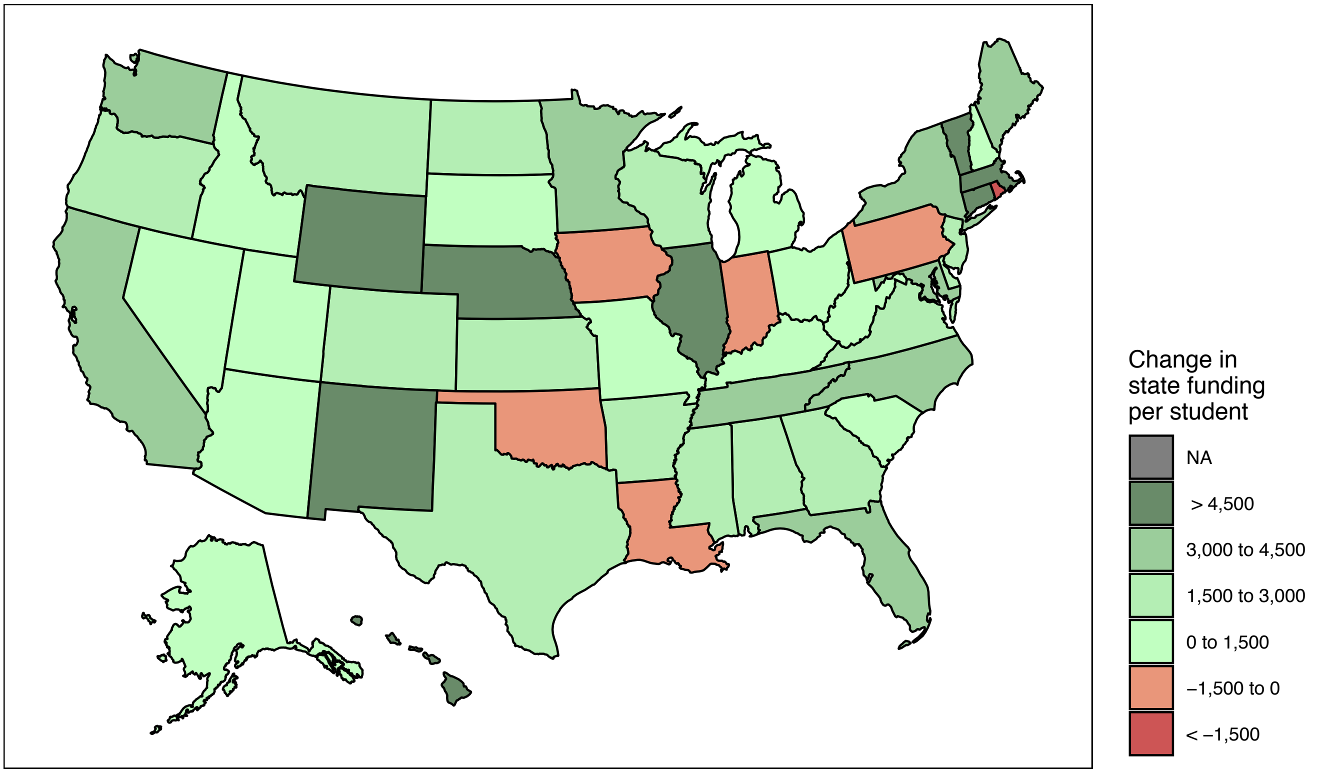
Change in State Funding per Student for Higher Education: 2008–2021



Note. Data from *SHEF State Higher Education Finance FY 2021*, by State Higher Education Executive Officers Association, 2022 (https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Report.pdf) and author's calculations.

Figure 7

Change in State Funding per Student for Higher Education: 1980–2021



Note. Data from *SHEF State Higher Education Finance FY 2021*, by State Higher Education Executive Officers Association, 2022 (https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Report.pdf) and author's calculations.

Fortunately, we can rely on the regression method rather than arbitrary or cherry-picked beginning and ending dates to determine the long-run trend. A regression uses all the available data and is not as reliant on potentially unrepresentative beginning and end dates. And as **Figure 1** showed, the regression line has an upward slope, indicating that state funding typically increases by $19 to $54 per student per year. This increase in state funding over time shows that much of the erroneous belief in state disinvestment is due to generalizing from unrepresentative data.

Failing to Adjust for Inflation

The other main reason belief in state disinvestment is widespread is that one of the main reports that track state funding over time, the SHEF report (the source of data for this study), does not adjust for inflation.

When comparing dollar values over time, it is usually advised to adjust for inflation because it gradually erodes the purchasing power of a dollar over time. A dollar today cannot buy as much as a dollar 20 years ago could. To adjust for inflation, we use a price index to adjust the nominal figures (the values reported at the time) into real values (the past values in the equivalent of today's dollars).

For higher education, the main error is failing to use a price index that adjusts for inflation. For example, the SHEF report uses the Higher Education Cost Adjustment (HECA). But HECA does not correct for inflation, it adjusts for costs, hence the C in the acronym. This means that the values reported by SHEEO are not adjusted for inflation, they are adjusted for (estimated) costs. But as shown in the subtly titled *Stop Misusing Higher Education Specific Price Indices*, industry-specific cost adjustments often provide nonsensical results. That study (Gillen & Robe, 2011) showed that from 2001 to 2008, the cost of a gallon of gasoline more than doubled after adjusting for inflation. But when adjusted for costs rather than inflation, the adjusted cost of gas declined—the exact opposite of what happened in reality. The lesson is clear: An industry-specific cost index does not adjust for inflation and can easily lead to misleading conclusions.

Three common choices to adjust for inflation are:

- Consumer Price Index (CPI-U).
- Consumer Price Index – Research Series (CPI-RS).
- Personal Consumption Expenditure Price Index (PCE).

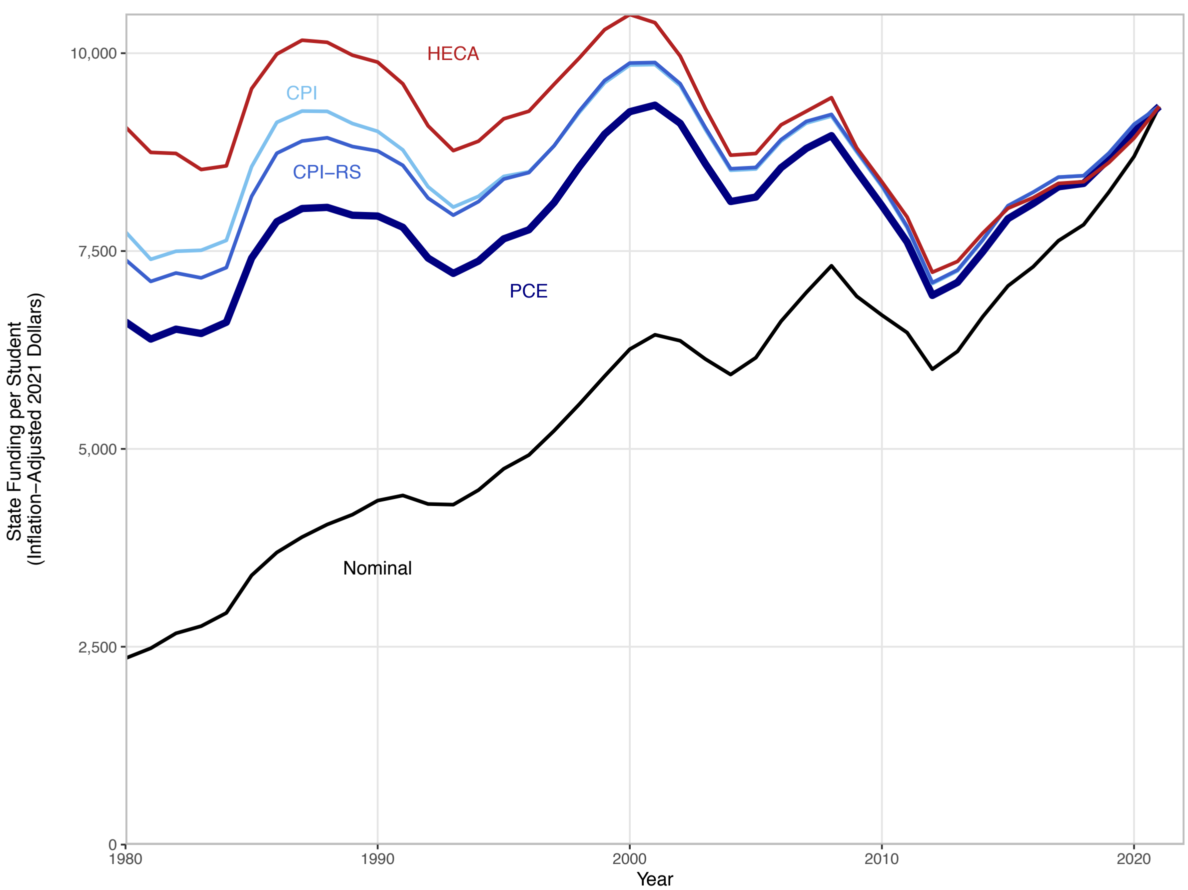
The CPI-U is the most widely used price index. However, once published, it is not updated, which means that methodological improvements are not applied to earlier data. This means that the CPI-U value for 1980 was not calculated the same way as the CPI-U value for 2021. The CPI-RS addresses this by applying newer methodologies to older data and therefore provides a more consistent measure of inflation for earlier periods.

Yet arguably the best measure of inflation is the PCE. Relative to the CPI-U and the CPI-RS, the PCE better accounts for substitution of purchases by consumers as prices change, and it covers more goods and services. Like the CPI-RS, it is revised as new data and methodologies are discovered. Tellingly, the PCE is the inflation measure of choice for the Federal Reserve System, which, as the central bank of the United States, is the institution responsible for ensuring that inflation remains well anchored (Bullard, 2013). In other words, the institution primarily responsible for monitoring and controlling inflation uses the PCE to measure inflation because it believes PCE is the most accurate measure of inflation.

Using any of these price indices to adjust for inflation provides dramatically different results compared to using HECA to adjust for costs. **Figure 8** shows state funding over time using three different price indices to adjust for inflation as well as the adjustment for costs using HECA. Misjudging the amount of inflation can dramatically skew the number. For example, in 1980 nominal state funding was $2,355. Using the best price index (the PCE) indicates that prices have increased by 281% since 1980, meaning

Figure 8

State Funding per Student by Price Index



Note. Data from *SHEF State Higher Education Finance FY 2021*, by State Higher Education Executive Officers Association, 2022 (https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Report.pdf) and author's calculations.

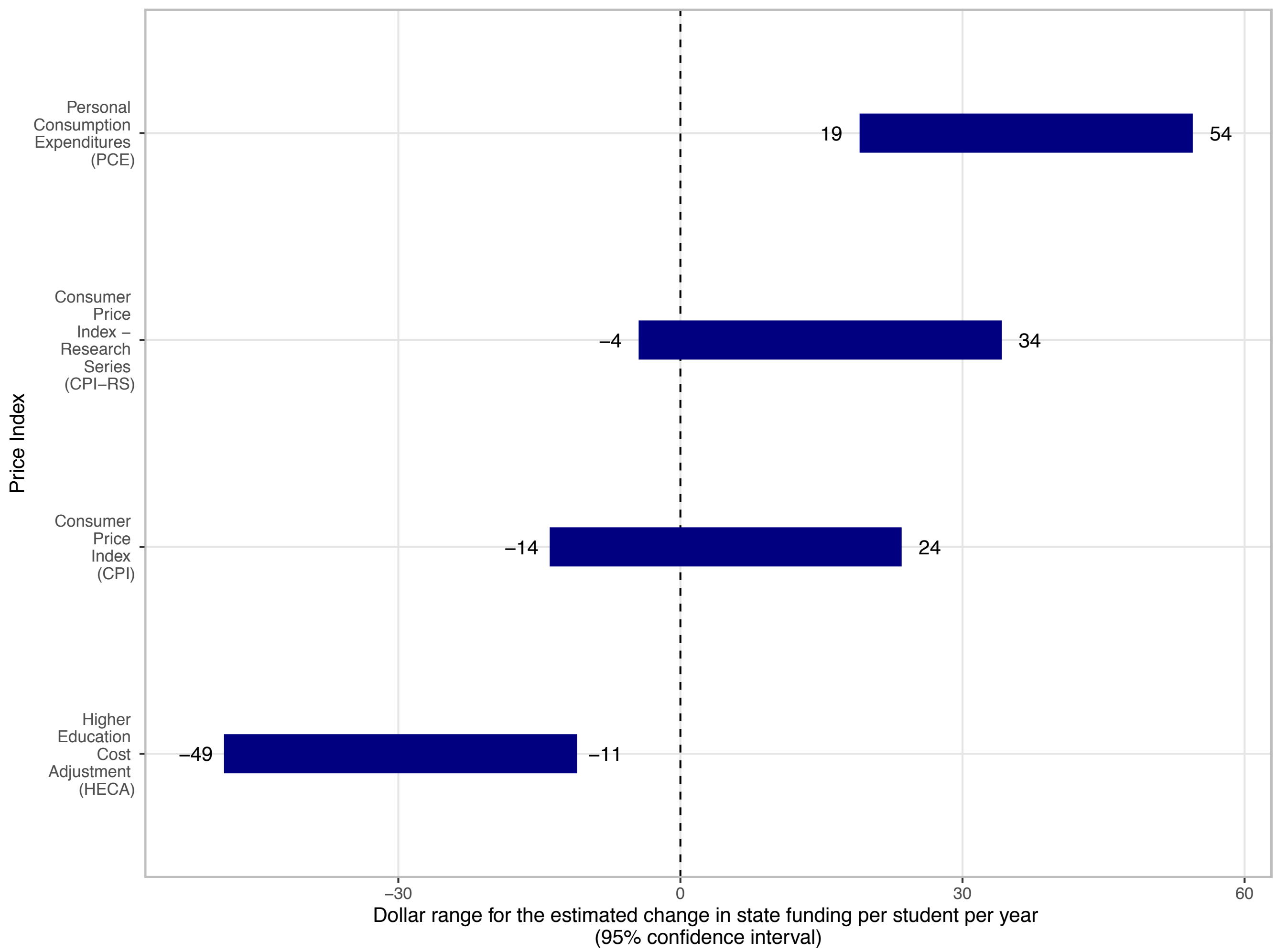
that the $2,355 in state funding per student back in 1980 would be worth $6,605 in today's dollars. Yet the HECA estimates that costs have increased by 385% since 1980, meaning that that $2,355 would be worth $9,068 today. The HECA adjustment thus overestimates state funding in 1980 by almost $2,500. By overstating past funding, HECA is heavily biased toward finding state disinvestment. This bias is so strong that even if state funding increased by $2,000 per student, the HECA adjustment would record that as a decline.

To determine the long-run trend in state funding when using the various price indices, we ran a regression for each line. **Figure 9** shows the confidence intervals of these regression estimates by price index.

It is noteworthy that the more accurately a price index measures inflation, the less support it provides for the state disinvestment narrative. Only the estimates using HECA are consistent with the state disinvestment narrative, but as we have noted, HECA does not adjust for inflation, it adjusts for estimated costs. Among the price indices that do adjust for inflation, the CPI-U and CPI-RS confidence intervals include $0, so neither is statistically significant, and the safest conclusion for both is that there is no upward or downward trend in state funding over time. The price index that does the best job of measuring inflation, the PCE, shows a clear upward trend in state funding per student over time.

Figure 9

Estimates of the Annual Change in State Funding per Student by Price Index



Note. Data from *SHEF State Higher Education Finance FY 2021*, by State Higher Education Executive Officers Association, 2022 (https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Report.pdf) and author's calculations.

This means that many people believe that state disinvestment is occurring because they rely on figures that adjust for costs using HECA. Once these figures are adjusted for inflation rather than costs, the trend reverses, with no trend in state funding per student over time (using the CPI or the CPI-RS) or a trend of state funding actually increasing over time (using the PCE).

Trends in Tuition Revenue

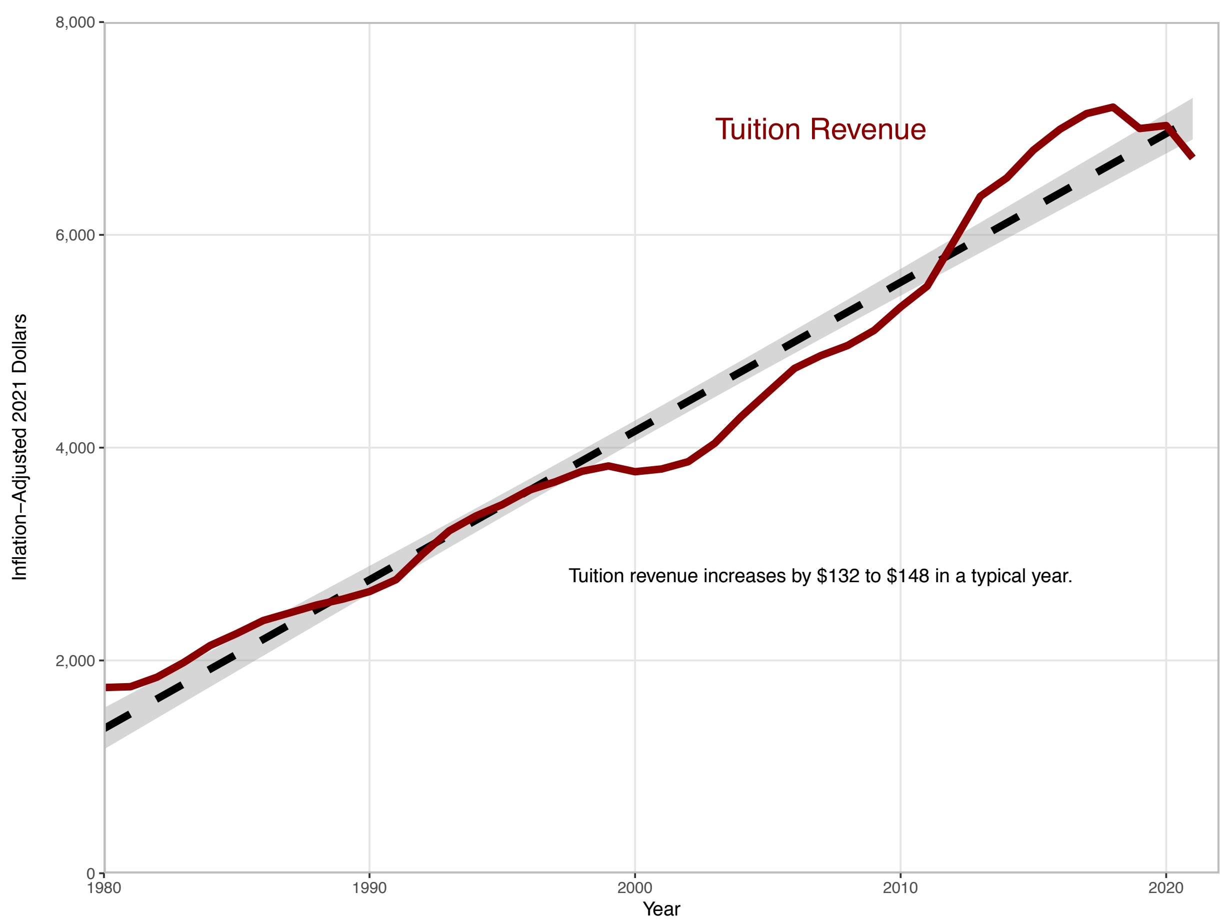
Tuition is the other main source of educational revenue for public colleges. **Figure 10** shows inflation-adjusted tuition revenue from 1980 to 2021 (recall that federal financial aid like Pell grants and student loans will show up as tuition revenue when used to pay tuition). Tuition revenue has consistently increased since 1980, with the typical year seeing an increase of between $132 and $148 per student.

One new development worth emphasizing is the recent decline in tuition revenue. After peaking in 2018, tuition revenue has fallen by $478 per student, and this trend started before the COVID-19 pandemic. If this trend continues, it will reverse close to four decades of consistent increases in tuition revenue.

Figure 11 shows the annual change in tuition revenue per student by year. The unprecedented nature of the recent decline in tuition revenue is clearly evident. In the past four decades, only three years have witnessed a decline in tuition revenue, and the two biggest occurred in the past three years.

Figure 10

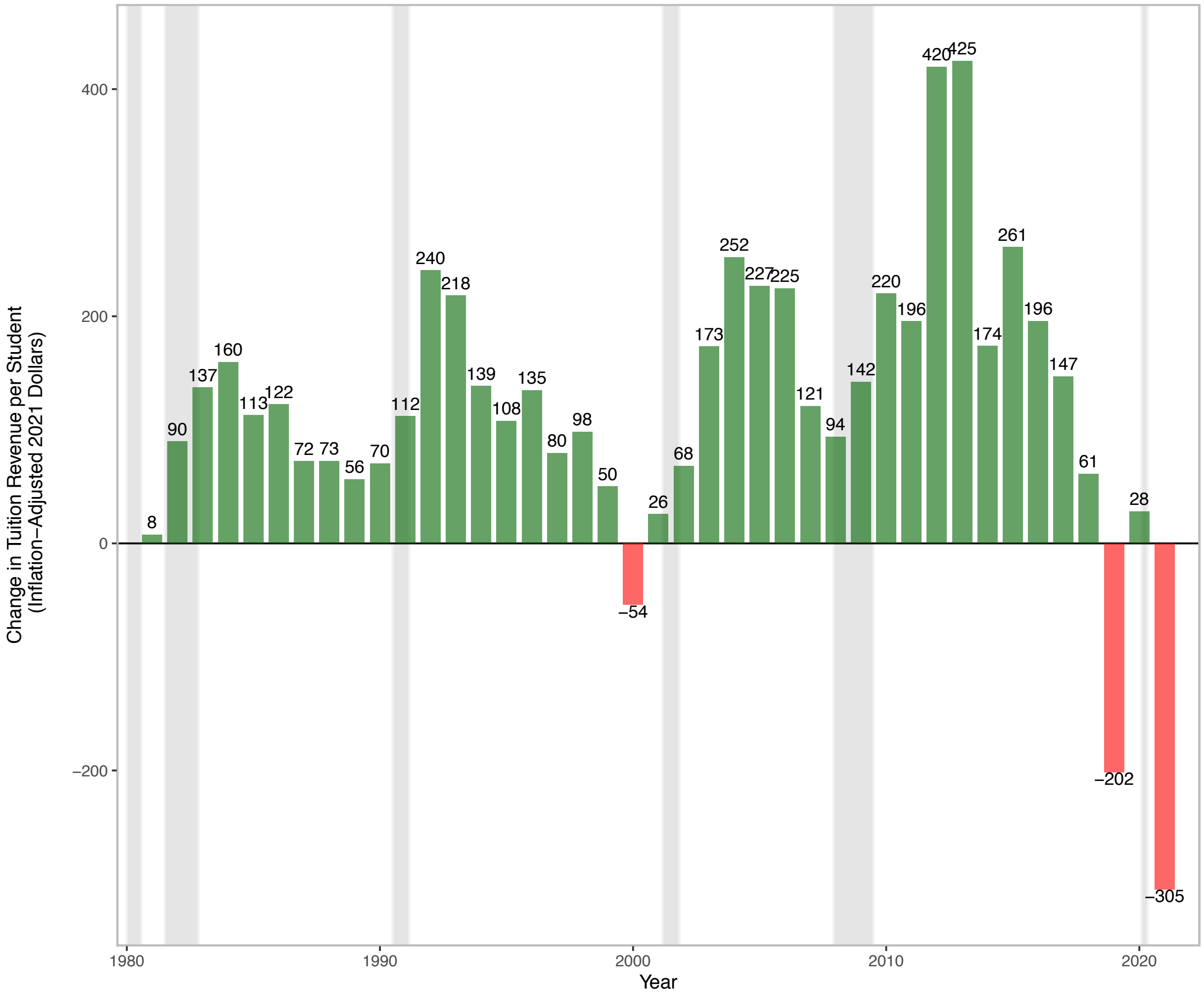
Higher Education Tuition Revenue: 1980–2021



Note. Data from *SHEF State Higher Education Finance FY 2021*, by State Higher Education Executive Officers Association, 2022 (https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Report.pdf) and author's calculations.

Figure 11

Change in Tuition Revenue per Student by Year



Note. Data from *SHEF State Higher Education Finance FY 2021*, by State Higher Education Executive Officers Association, 2022 (https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Report.pdf) and author's calculations.

Trends in Total Educational Revenue

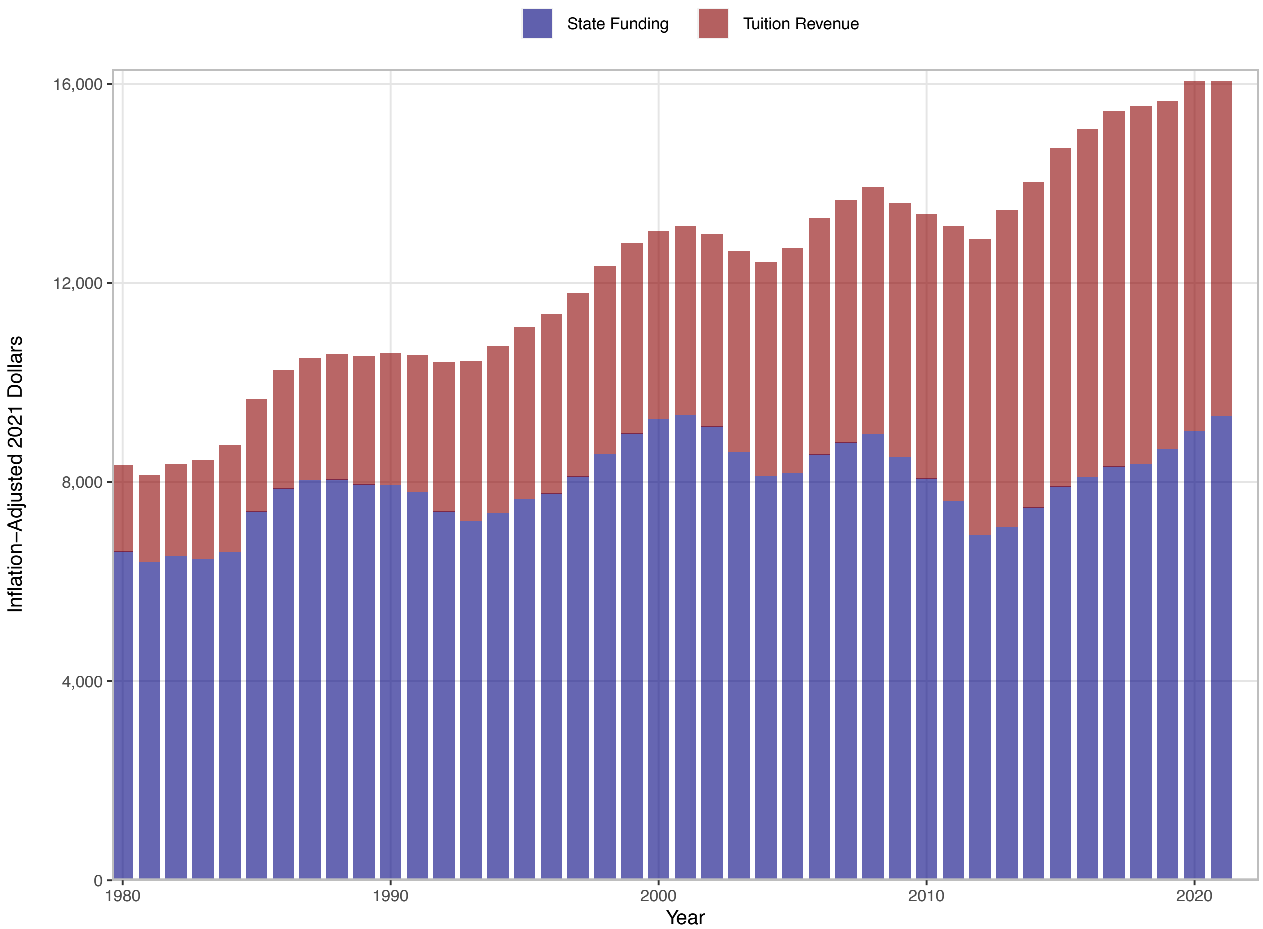
Steady and sizable increases in inflation-adjusted annual tuition revenue per student ($132 to $148) combined with less steady and smaller increases in state funding per student ($19 to $54) have led to increases in total educational revenue per student. **Figure 12** shows inflation-adjusted total educational revenue per student from 1980 to 2021. While total educational revenue per student fell by $9 from 2020 to 2021, over the past four decades, total educational revenue per student has almost doubled, from $8,351 in 1980 to $15,959 in 2021.

State Disinvestment Does Not Explain Rising Tuition

For those under the impression that state disinvestment is real, one of the natural corollaries is the belief that tuition is rising to make up for state disinvestment.

The first problem with this idea is that, in a typical year, inflation-adjusted state funding increases by between $19 and $54 per student. If changes in tuition are driven by changes in state funding, inflation-adjusted tuition revenue should be *falling* over time, not rising by $132 to $148 per year.

Figure 12
Higher Education Total Educational Revenue per Student: 1980–2021



Note. Data from *SHEF State Higher Education Finance FY 2021*, by State Higher Education Executive Officers Association, 2022 (https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Report.pdf) and author's calculations.

The second problem is that there is little relationship between changes in state funding and changes in tuition revenue. Recall that many observers lament that state funding per student is lower in 2021 than it was in 2001. It is certainly within the realm of possibility that colleges would raise tuition to try to make up for that loss of revenue. But if that is the case, since state funding per student in 2021 was only $17 lower than in 2001, we might expect tuition revenue to have increased by $17. But tuition revenue did not increase by $17—it increased by $2,923. In other words, for every $1 they lost in state funding, colleges raised tuition revenue by almost $172.

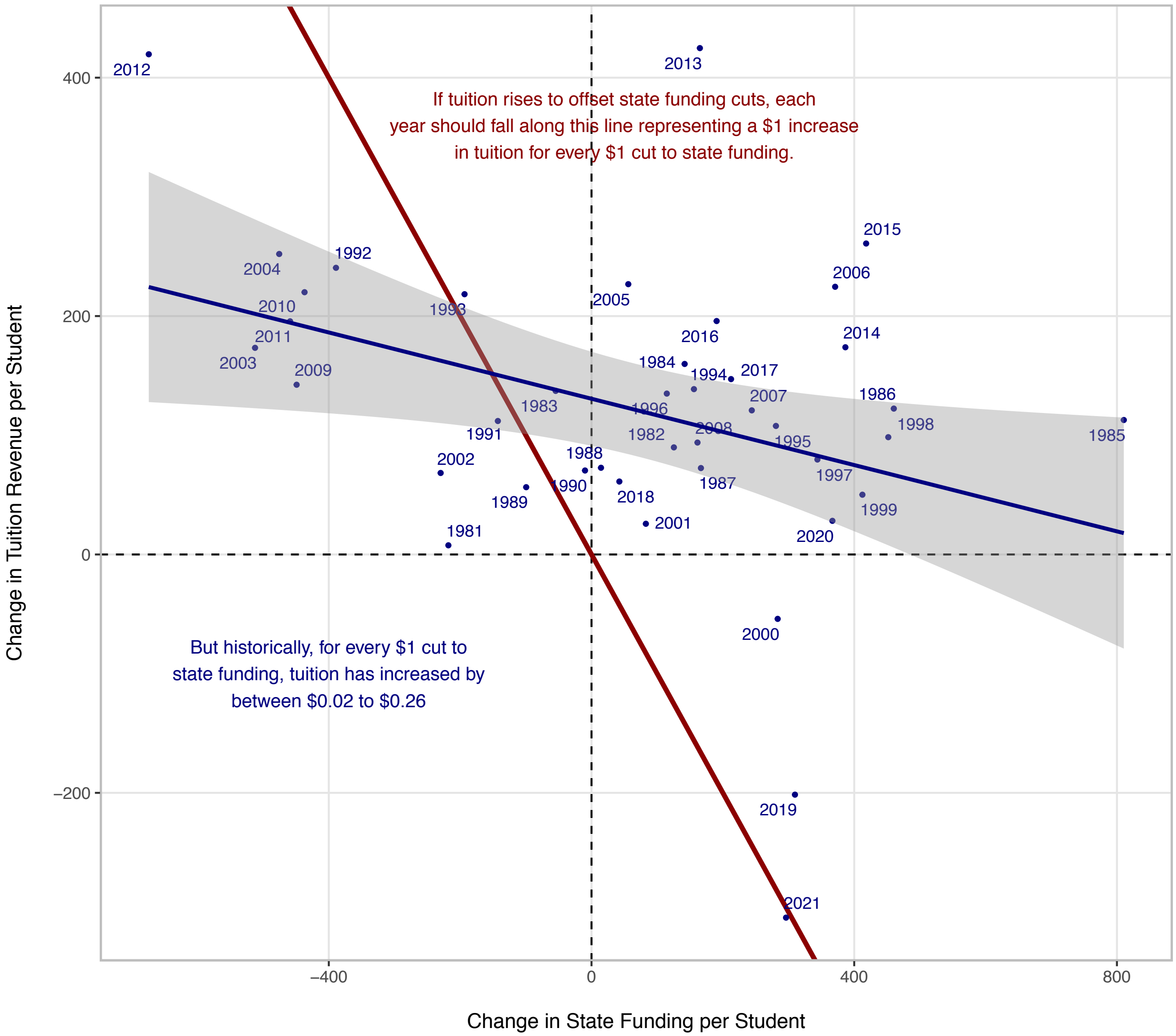
To further explore the relationship between changes in state funding and changes in tuition revenue, **Figure 13** plots each year's change in state funding and its change in tuition revenue. If tuition rises to make up for cuts in state funding, then each year should fall roughly along the red line, which shows a $1 increase in tuition for every $1 cut in state funding.

Most years do not fall close to the red line. In fact, the historical relationship, illustrated by the blue line, shows that for every $1 cut in state funding, tuition revenue increases by $0.02 to $0.26. The point estimate is an increase of $0.14, and it is statistically significant at the 5% level (only the second year this relationship has been statistically significant).

In addition, note where the blue line intercepts the dashed vertical line, at a value of $131. This means that even if there were no change in state funding per student, we

Figure 13

Changes in Higher Education Funding by Source: 1980–2021



Note. Data from *SHEF State Higher Education Finance FY 2021*, by State Higher Education Executive Officers Association, 2022 (https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Report.pdf) and author's calculations.

would still expect tuition revenue to rise by $131 per student. Since tuition revenue rises by $132 to $148 in a typical year, this means that the vast majority of the typical year's increase in tuition is unrelated to changes in state funding.

This data set uses nationwide averages. More reliable estimates of the relationship between changes in state funding and changes in tuition can be obtained from examining individual colleges. An earlier paper, *Why Does Tuition Keep Increasing,* which used a different data set and covered a different period found that over five years, a $1 cut in state funding was associated with an increase in tuition of around $0.10 (Gillen, 2015). This estimate is quite close to the estimate in this paper using nationwide averages, and both indicate that the statistical relationship between changes in state funding and changes in tuition is quite weak.

Conclusion

This study documents recent trends in inflation-adjusted state funding and tuition revenue.

Over the past four decades, state funding has typically increased by $19 to $54 per student per year, and tuition revenue has increased by $132 to $148 per student per year. The combined effect of these trends has led to sustained increases in total educational revenues per student, with total educational revenue reaching $15,959 per student in 2021.

The upward trend of state funding exposes that so-called state disinvestment is a myth at the national level. At the state level, state disinvestment is a reality for only 6 states, higher funding is evident for 22 states, and 22 states show no upward or downward trend in state funding.

The common argument that tuition rises to make up for state disinvestment has three problems. First, state funding has increased over time, so tuition should be falling, not rising. Second, the statistical relationship between changes in state funding and changes in tuition is quite weak. Third, even during periods in which state funding falls, tuition rises by many multiples of the cut in state funding. For example, from 2001 to 2021, state funding fell by $17 per student, yet tuition revenue increased by $2,923.

We hope that these findings shed light on current misperceptions of the state of public higher education finance, and that this leads to more informed policy discussions about the path forward for American higher education.

References

Bullard, J. (2013, July 1). *President's message: CPI vs. PCE inflation: Choosing a standard measure*. The Regional Economist. https://www.stlouisfed.org/publications/regional-economist/july-2013/cpi-vs-pce-inflation--choosing-a-standard-measure

Gillen, A., & Robe, J. (2011). *Stop misusing higher education-specific price indices.* Center for College Affordability and Productivity. https://files.eric.ed.gov/fulltext/ED536149.pdf

Gillen, A. (2015). *Why does tuition keep increasing?* SSRN. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2663073

Gillen, A. (2019). *The myth of state disinvestment in higher education*. Texas Public Policy Foundation. https://www.texaspolicy.com/the-myth-of-state-disinvestment-in-higher-education/

Gillen, A. (2020). *Trends in state funding and tuition revenue for public higher dducation:1980-2019*. Texas Public Policy Foundation. https://www.texaspolicy.com/trends-in-state-funding-and-tuition-revenue-for-public-higher-education-1980-2019/

Gillen, A. (2021). *Trends in state funding and tuition revenue for public higher education:1980-2020*. Texas Public Policy Foundation. https://www.texaspolicy.com/trends-in-state-funding-and-tuition-revenue-for-public-higher-education-1980-2020/

State Higher Education Executive Officers Association. (2021, April 21). *Data definitions.* https://shef.sheeo.org/wp-content/uploads/2021/05/SHEEO_SHEF_FY20_Data_Definitions.pdf

State Higher Education Executive Officers Association. (2022a). *SHEF state higher education finance FY 2021*. https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Report.pdf

State Higher Education Executive Officers Association. (2022b, June 10). *Data definitions.* https://shef.sheeo.org/wp-content/uploads/2022/06/SHEEO_SHEF_FY21_Data_Definitions.pdf

Whitford, E. (2021). *How federal stimulus spending plays out for state higher ed*. Inside Higher Ed. https://www.insidehighered.com/news/2021/05/28/federal-stimulus-higher-ed-replay-2009

ABOUT THE AUTHOR

Andrew Gillen, Ph.D., is a senior policy analyst at the Texas Public Policy Foundation and an adjunct professor of economics at Johns Hopkins University. Dr. Gillen's recent work has focused on how to reform federal financial aid, how state disinvestment is a myth, and how post-college earnings and debt should be used to inform student choice and government accountability.

Prior to joining the Foundation, Dr. Gillen spent over a decade at nonprofit and philanthropic organizations researching and trying to improve higher education. He was a program officer for the Charles Koch Foundation and served in research roles for American Institutes for Research, Education Sector; the American Council of Trustees and Alumni; and the Center for College Affordability and Productivity. He was also on the U.S. Department of Education's Advisory Committee on Student Financial Assistance.

Andrew has a PhD in economics from Florida State University and a BBA (business) degree from Ohio University.

About Texas Public Policy Foundation

The Texas Public Policy Foundation is a 501(c)3 non-profit, non-partisan research institute. The Foundation promotes and defends liberty, personal responsibility, and free enterprise in Texas and the nation by educating and affecting policymakers and the Texas public policy debate with academically sound research and outreach.

Funded by thousands of individuals, foundations, and corporations, the Foundation does not accept government funds or contributions to influence the outcomes of its research.

The public is demanding a different direction for their government, and the Texas Public Policy Foundation is providing the ideas that enable policymakers to chart that new course.

Texas Public Policy Foundation

901 Congress Avenue | Austin, Texas 78701 | 512.472.2700 | www.TexasPolicy.com