Evidence Against the Free-College Agenda: An Analysis of Prices, Financial Aid, and Affordability at Public Universities

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Key Points

- Tuition prices at public universities have increased far less than what prominent free-college advocates claim, thanks to generous financial aid policies.
- Among low- and middle-income students, average net tuition prices increased less than $600 between the 1995–96 and 2015–16 academic years.
- During that time, average annual financial aid for these students increased from $1,618 to $6,442 in inflation-adjusted terms.
- Financial aid has also increased to cover more of these students' living expenses, but not enough to fully offset rapidly rising non-tuition costs.

The 2020 Democratic presidential primary elevated free-college plans to the top of the national agenda, with many candidates proposing expansive programs to help states make public colleges and universities free for in-state students. Several House and Senate lawmakers have also advanced these federal-state matching grant programs to finance free college.[1] Proponents of these plans argue that tuition at public colleges and universities has become increasingly unaffordable largely because states have failed to fund them adequately. They argue that unaffordable tuition at public colleges and universities jeopardizes the key role these institutions play in ensuring affordable access to higher education for state residents from all income backgrounds. Through federal matching grants to the states, free-college policies aim to restore the affordable access these institutions were meant to provide while ensuring that prices do not rise to unaffordable levels in the future.

The concern over rising tuition at public universities, and the free-college agenda that has emerged in response, is based largely on an incomplete picture of what students actually pay to attend public universities. Many free-college advocates base their claims about college affordability on the "sticker price" that institutions publish as their official price even though it does not reflect discounts and financial aid.[2] Others focus on isolated policies that affect prices for students, such as state appropriations to universities or the value of the federal

Pell Grant, but ignore the effect that students' *total* financial aid awards have on prices.[3]

This report questions the need for free-college policies by assessing affordability and prices at public universities for in-state students after all financial aid is applied and how these "net prices" have changed since the mid-1990s. It also distinguishes between tuition prices, which generally cover educational costs, and living expenses students incur while enrolled.

This report focuses on two groups of students at public four-year institutions that broadly encompass the students whom free-college policies are meant to assist: those from families earning less than $125,000 and those who receive federal Pell Grants, which are generally restricted to families earning less than $75,000. While there is significant overlap between the two groups, this analysis covers both separately, because free-college advocates have proposed a range of income eligibility cutoffs for the policy. Some proposals, such as the one presidential candidate Joe Biden supports, limit eligibility to students from families earning less than $125,000.[4] Others would target free-college policies to students who receive federal Pell Grants, thereby creating a lower income cutoff, such as the proposal sponsored by Sen. Brian Shatz (D-HI) and cosponsored by Sen. Elizabeth Warren (D-MA).[5]

The findings in this report show that popular claims about sharply rising tuition prices at public universities are greatly exaggerated. While sticker prices have indeed increased markedly since the mid-1990s (they have more than doubled), financial aid has increased by almost as much—enough to nearly offset the rise in sticker prices. And net tuition prices at these institutions are a fraction of the $10,000 sticker prices prominent free-college advocates frequently cite.[6] The findings in this report also show that financial aid has increased to cover more of students' living expenses at public universities during the period analyzed, but not by enough to fully offset cost increases that have greatly exceeded inflation.

These findings highlight the unsung successes of existing student aid programs in keeping tuition prices low at public universities and offer evidence that contradicts the case for a new federal-state matching grant that would fully subsidize tuition at public universities. The findings also suggest that rising living expenses, not tuition prices, are to blame for major changes in affordability at public universities, a topic that deserves more attention in debates about college affordability. Policymakers need to better understand why these expenses have risen at rates that far exceed inflation, whether such increases are truly necessary, and whether cost containment strategies might be a better solution than more generous grant aid to help students afford these costs.

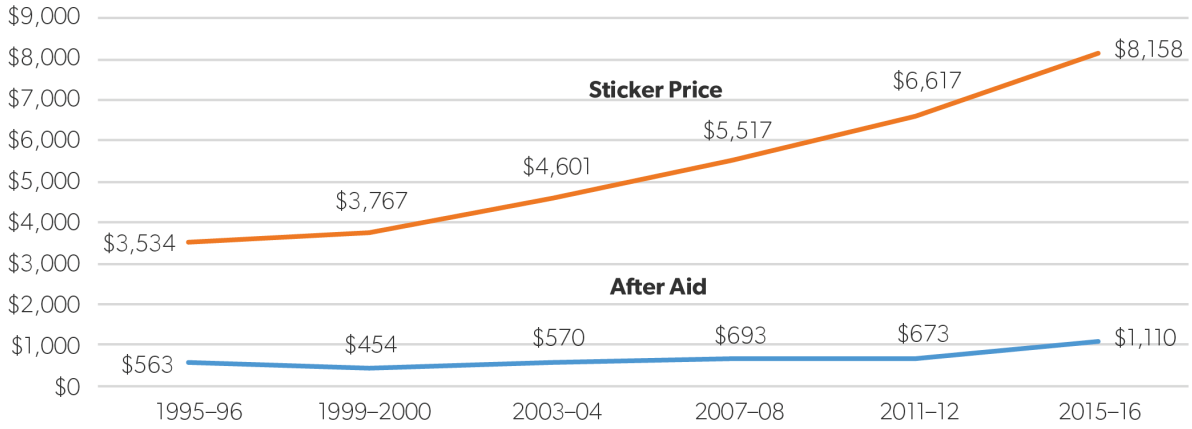
Sticker Price Versus Net Price

The prices that institutions of higher education charge for tuition and fees (hereafter referred to as simply "tuition") are best understood as two separate prices: the sticker price that universities publish as their official price before any financial aid is factored in and the net tuition price that students pay after their financial aid is applied. It is important to measure net prices instead of sticker prices when assessing affordability because the net price that students actually pay out of pocket is often a fraction of the sticker price. Thus, the sticker price can make universities appear far more expensive than they actually are.[7]

The vast majority of students attending public universities receive direct financial aid to offset the sticker prices that universities charge. Such aid includes grants, scholarships, tuition discounts from the university, and federal tax benefits.[8] (This report excludes student loans from all financial aid and net price calculations.) Only a comprehensive accounting of this aid can provide an accurate picture of the net tuition prices students pay at public universities. Further, students may receive enough combined aid to fully offset the sticker price for tuition, which allows them to use remaining aid to cover a portion of their living expenses while enrolled. Financial aid is usually applied to tuition first and then to living expenses if any aid remains, and this report follows that approach in calculating net prices.[9]

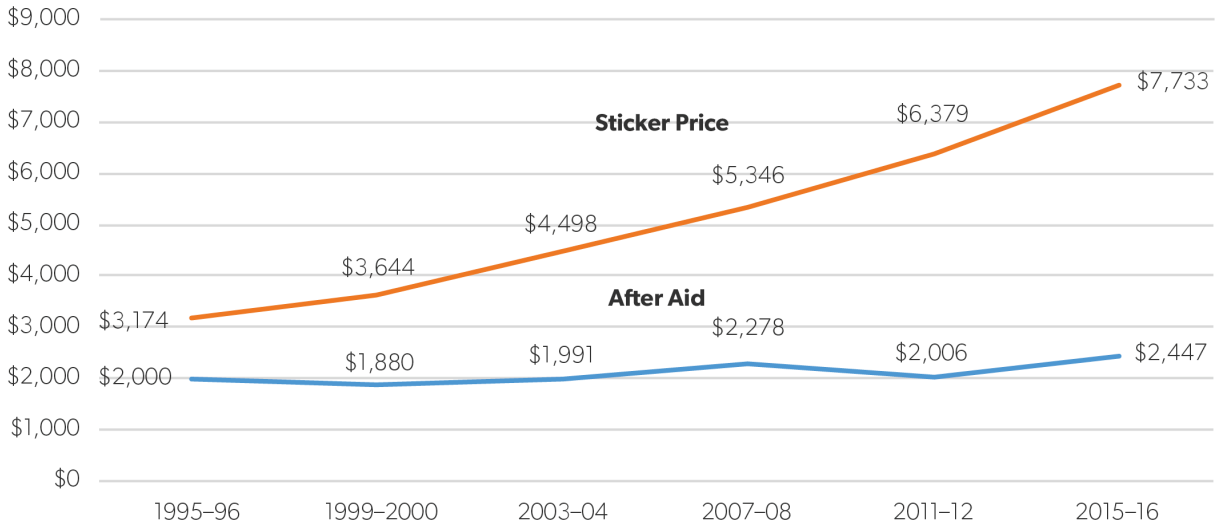
This report now turns to an analysis of the sticker and net tuition prices that in-state students paid at public four-year institutions from 1995–96 to 2015–16, with statistics presented at four-year intervals for the intervening years, reflecting the available data. The data for the analysis come from the National Postsecondary Student Aid Study (NPSAS), which provides a representative sample

Figure 1. Average Tuition and Fees at In-State Public Universities for Pell Grant Recipients by Academic Year



Note: Figures are in constant 2015 dollars. Aid includes grants, scholarships, discounts, and federal tax credits or deductions for tuition, but not loans. It includes prices for all bachelor's degree students, including those attending less than full time.
Source: Author's calculations using National Center for Education Statistics, National Postsecondary Student Aid Study, https://nces.ed.gov/surveys/npsas/.

Figure 2. Average Tuition and Fees at Public Universities for In-State Students from Families Earning Less Than $125,000 by Academic Year



Note: Figures are in constant 2015 dollars. Aid includes grants, scholarships, discounts, and federal tax credits or deductions for tuition, but not loans. It includes prices for all bachelor's degree students, including those attending less than full time.

of the undergraduate population for the 1995–96, 1999–2000, 2003–04, 2007–08, 2011–12, and 2015–16 academic years.[10] The NPSAS includes data from administrative records on the prices that students paid before and after aid was applied, and it details the sources of that aid. The 1995–96 academic year is the earliest year for which data are available in a format consistent with later years. The 2015–16 academic year is the most recent year for which data are available.

Not all in-state students who attended public universities are included in this analysis. Some of the most prominent free-college plans include income limits for eligible students, although other plans would make eligibility open to students regardless of their financial situation.[11] Moreover, many claims about declining affordability at public universities are mainly concerned with low- and middle-income students. Therefore, this report focuses on the prices paid by students from the two groups that most free-college proposals are meant to benefit.

The first group, which includes only low- and middle-income students who receive financial aid, is defined here as students who received a federal Pell Grant. A second group, students from families with household incomes below $125,000 in 2015, captures students more broadly while excluding the highest-income students who would be ineligible for some free-college programs.[12] (All statistics in this report are in constant 2015 dollars, adjusted for inflation using the Personal Consumer Expenditures index, unless otherwise noted.)[13]

Average prices and financial aid statistics in this report reflect all in-state students in the stated group who are pursuing bachelor's degrees at public four-year institutions at any level of attendance status, unless otherwise noted.[14] While students attending less than full time usually pay attendance-adjusted tuition prices, including all students regardless of attendance status in this analysis has little effect on the key findings. It also helps provide a more comprehensive view of enrollment and financial aid at public universities.[15] Comparable statistics for only full-time students are included in endnotes throughout this report.

Figures 1 and 2 show the average sticker and net tuition prices for Pell Grant recipients and students from all families earning less than $125,000, respectively. The change in sticker prices confirms the popular view that college prices increased sharply in recent decades. For both groups, sticker prices for tuition more than doubled since the mid-1990s, after adjusting for inflation. On average, public universities charged students from these two groups between $3,000 and $3,500 in annual sticker prices for tuition in the mid-1990s. By 2015–16, sticker prices had increased to about $8,000 for both groups.

While sticker prices increased markedly, net tuition prices tell a completely different story. As shown in Figures 1 and 2, student aid—which includes grants, scholarships, tuition discounts, and federal tuition tax benefits—reveals that net tuition prices for these students increased far less than the sticker price.[16] For Pell Grant recipients, average net tuition prices increased from $563 in the mid-1990s to $1,110 in 2015–16, a $547 increase over 20 years after adjusting for inflation.[17] For students from families earning less than $125,000, the amount is similar. Net tuition prices rose from an average of $2,000 in the mid-1990s to $2,447 in 2015–16.[18] In short, both groups of students saw net tuition prices increase by far less than sticker prices.

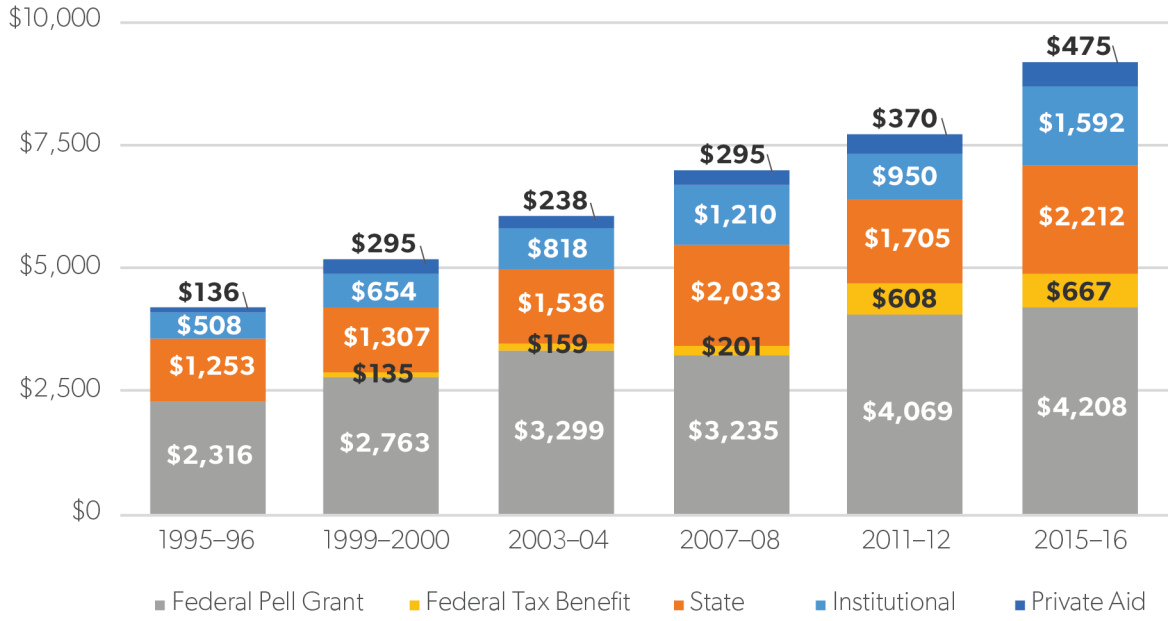
Financial Aid

Many free-college advocates may not appreciate the extent to which rising sticker prices at public universities have been offset by increases in financial aid. All forms of aid have increased substantially in real terms since the mid-1990s, and a greater share of students qualify for some form of aid today than they did in the mid-1990s.[19]

Figures 3 and 4 show the average financial aid that students from the two groups received at public universities over the period analyzed.[20] Both groups saw large real increases in average aid across all sources. Combined aid for Pell Grant recipients increased from an average of $4,214 in the mid-1990s to $9,153 today.[21] These amounts actually exceed average sticker prices, which demonstrates that many Pell Grant recipients have enough aid left over to pay some of their living expenses after applying their aid to fully offset tuition. For students from families earning less than $125,000, the increase in financial aid is even more pronounced. Average aid for these students was just $1,618 in 1995–96, after adjusting for inflation. Twenty years later, it had increased to $6,442, or four times the amount in the mid-1990s.[22]

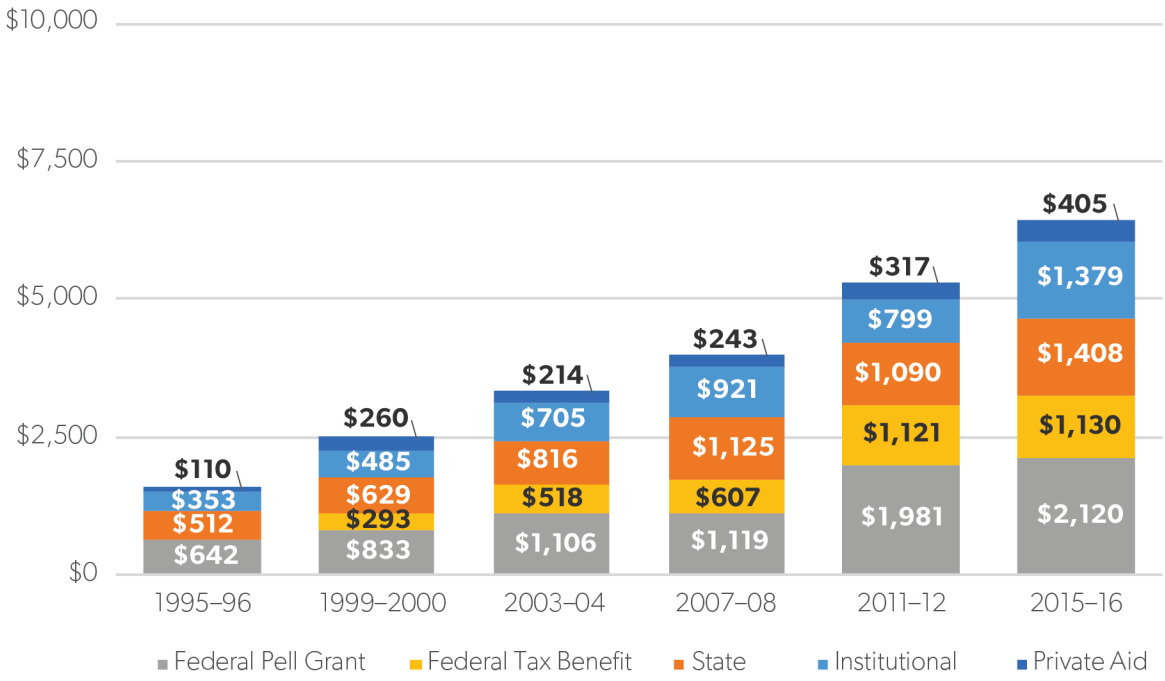
While some observers argue that policymakers and universities have inadequately funded financial aid programs for low- and middle-income students, these statistics reveal that funding for these programs has, in fact, increased substantially on a per-student basis and in real terms. These findings also suggest that financial aid, when taken as a whole, has largely maintained its purchasing power relative to tuition prices (at least since the mid-1990s) for students at public universities. In contrast, many advocacy groups claim that aid has generally failed to keep up with rising prices and that a new federal-state matching grant program is needed in response.[23] To be sure, these findings do not refute the claims about purchasing power outright, which often focus only on the Pell Grant and compare it to the combined cost of tuition and living expenses over a longer period than in this analysis.

Figure 3. Average Student Aid Received by Pell Grant Recipients at In-State Public Universities by Academic Year



Note: Values are in constant 2015 dollars and reflect average aid for all bachelor's degree students, including those attending less than full time.
Source: Author's calculations using National Center for Education Statistics, National Postsecondary Student Aid Study, https://nces.ed.gov/surveys/npsas/.

Figure 4. Average Student Aid Received by In-State Students at Public Universities with Family Income Less Than $125,000 by Academic Year



Note: Values are in constant 2015 dollars and reflect average aid for all bachelor's degree students, including those attending less than full time. Values also include students who received no financial aid.
Source: Author's calculations using National Center for Education Statistics, National Postsecondary Student Aid Study, https://nces.ed.gov/surveys/npsas/.

Furthermore, the data presented here also show that the Pell Grant covers a smaller share of the sticker price for tuition, consistent with the claim about declining purchasing power. Even so, these findings provide a different perspective on that claim, suggesting that despite declining purchasing power, net tuition prices for Pell Grant recipients have not increased as much since the mid-1990s as the claim might otherwise suggest.

When looking at the broader group of students, those from families earning less than $125,000, Pell Grants were also a major factor in the dramatic increase in financial aid, with average grants increasing from $642 in the mid-1990s for these students to $2,120 in 2015–16. That change was enough to increase the purchasing power of the Pell Grant relative to tuition for this group of students. The average grant covered 27 percent of sticker prices in the 2015–16 academic year, up from 20 percent in 1995–96.

The increase in the Pell Grant is due to policymakers not only enacting a larger maximum grant but also effectively raising the income cutoff for eligibility such that more middle-income families qualify.[24] For example, in the 1995–96 academic year, only 28 percent of students from families that earned between $50,000 and $60,000 (in 2015 dollars) who applied for aid and attended an in-state public university received a Pell Grant. In the 2015–16 academic year, 63 percent of these students received a Pell Grant.[25]

Another notable change for this group of students is the financial aid provided by federal tax benefits. This form of aid was not available in the 1995–96 academic year because policymakers did not enact tax benefits for tuition until 1997. These included the Hope and lifetime learning tax credits, which allowed tax filers to claim a credit against their income taxes for tuition expenses up to $1,500 or $1,000 (in 1997 dollars), respectively.[26]

Lawmakers expanded these benefits multiple times during the period covered in this report. They raised the value of the Hope credit in 2009 to its current maximum of $2,500 while boosting the income eligibility cutoff to $180,000 for joint filers and renaming it the American opportunity tax credit.[27] Students and families claimed over $20 billion in tax reductions through these benefits in 2019.[28] By the 2015–16 academic year, students from families earning less than $125,000 attending in-state public universities qualified for an average tax benefit of $1,130.

Average tax benefits are about half as much for the Pell Grant recipient group because these students pay less tuition and therefore qualify for smaller benefits. Additionally, students who have all their tuition offset by grants have no expenses with which to claim a tax credit.[29] While this report treats tax benefits like grants and scholarships, students and families do not receive this form of aid upfront when tuition is due. Instead, they must finance the tuition costs out of pocket (or with loans) and wait to realize the tax benefit through lower taxes throughout the year or when they receive a refund after filing their tax returns.

The large and broad-based increase in student aid that occurred during the past 20 years is one of the most overlooked trends in higher education policy and discussions about affordability at public universities. A closer look at these trends also reveals a hidden feature of the student aid system: When one source of aid is flat or falling, another is often increasing to fill the gap, such that total aid still grows.

For example, between 2003–04 and 2007–08, the average Pell Grant was largely unchanged because lawmakers did not increase the grant in line with inflation during that time. During the same period, states and universities increased their average per-student aid in real terms by a combined $888 for Pell Grant recipients and $525 for students from families earning less than $125,000. Over the next four years, the opposite happened. States and institutions cut financial aid in the wake of the Great Recession, while federal policymakers provided an increase in average per-student aid of $1,241 and $1,376 for the two groups of students, respectively. Those increases more than made up for cuts at the state and institutional level, and total aid increased. In the final four years of the analysis, the trend appears to have reversed again, with state and institutional aid rising markedly as the economy recovered and federal aid plateauing.

This offsetting trend in available financial aid is largely absent from policy discussions. It also undermines a common narrative about prices at public universities in the years immediately following the Great Recession. Many observers argue that declining state appropriations for public universities during that time caused institutions to raise tuition, resulting

in "costs shifting from states to students," as analysts at the Center on Budget and Policy Priorities put it.[30]

Although states reduced funding for universities in response to the Great Recession and universities raised sticker prices during that time, the data reveal that higher tuition prices were not shifted to either group of students in this analysis. Between 2007–08 and 2011–12, average net tuition prices were about flat for the two groups because larger Pell Grants and federal tax benefits fully offset the increase in sticker prices.[31] Rising costs were shifted not to the students covered in this report, but to the federal government. Costs may also have shifted to groups of students outside the groups covered here, such as out-of-state students and in-state students from families earning more than $125,000. But many free-college proposals do not aim to lower tuition prices for these students anyway.

The most recent data in this report do not reflect changes in financial aid and state budgets that are surely to follow the economic effects of the COVID-19 pandemic. As of this writing, the economy is likely set to enter another recession, which will cause state revenue to decline and may lead lawmakers to cut appropriations to public universities. It remains to be seen if further increases in federal aid will offset any potential tuition spikes that follow state budget cuts.

Living Expenses

This report has so far focused on tuition prices and how much of those costs are covered by financial aid. Of course, students also incur non-tuition expenses while enrolled, such as housing, food, and transportation. Course materials such as books and supplies are also included in this category of expenses, although they are arguably part of a student's instructional expenses.

A detailed analysis of changes in non-tuition expenses (hereafter referred to as "living expenses") is beyond the scope of this report, but the NPSAS dataset can provide some insight into how these costs have changed over time. These data are, however, less reliable than those for tuition prices and financial aid because many of the costs students incur cannot be accurately captured through administrative records held by universities or the federal government.

Furthermore, about 75 percent of students at in-state public universities do not live on campus, and universities can estimate only what these students incur in living expenses while enrolled.[32] Surveying students about their living expenses poses other reliability challenges because students may not accurately assess their own costs. The NPSAS relies on estimates from universities and students for the data it includes on living expenses.[33]

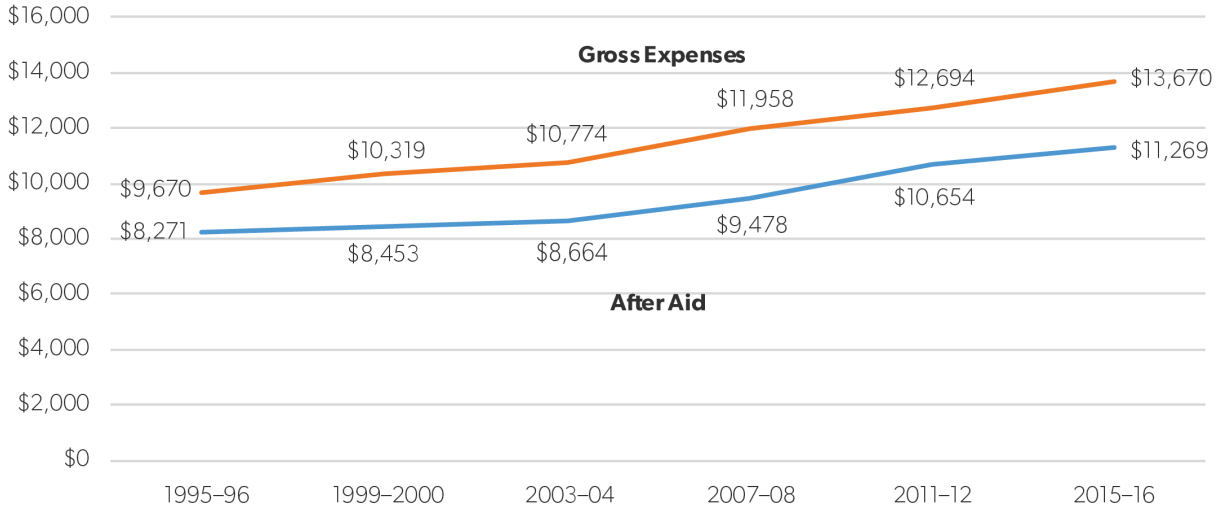
Figures 5 and 6 show gross living expenses and net living expenses for the two groups of students after financial aid in excess of tuition is applied. Gross living expenses are the costs students incurred before financial aid was factored in. Net living expenses are the estimated expenses students incurred after their financial aid was applied to these expenses. Both gross and net living expenses have increased at a rate that greatly exceeds inflation since the mid-1990s.

Despite student aid becoming more generous over time, it has not offset most of the increases in living expenses as it has for tuition. Financial aid does, however, cover more of students' living expenses than it did in the earlier years of this analysis. In the mid-1990s, Pell Grant recipients at public universities incurred $8,271 in average annual living expenses after factoring in student aid (Figure 5). This figure increased by $3,000 over the next 20 years after factoring in inflation.

However, that students incur higher out-of-pocket living expenses today does not necessarily mean their financial aid has become less generous in absolute terms. In fact, Pell Grant recipients received enough financial aid to offset $2,401 of their living expenses on average in 2015–16, which is up from $1,399 in the mid-1990s after adjusting for inflation. Put another way, the increase in out-of-pocket living expenses that Pell Grant recipients experienced would have been even larger ($4,000) if it were not for growth in financial aid. In short, financial aid has become more generous with living expenses, but not by enough to fully offset the large real increases in living expenses students incur.[34]

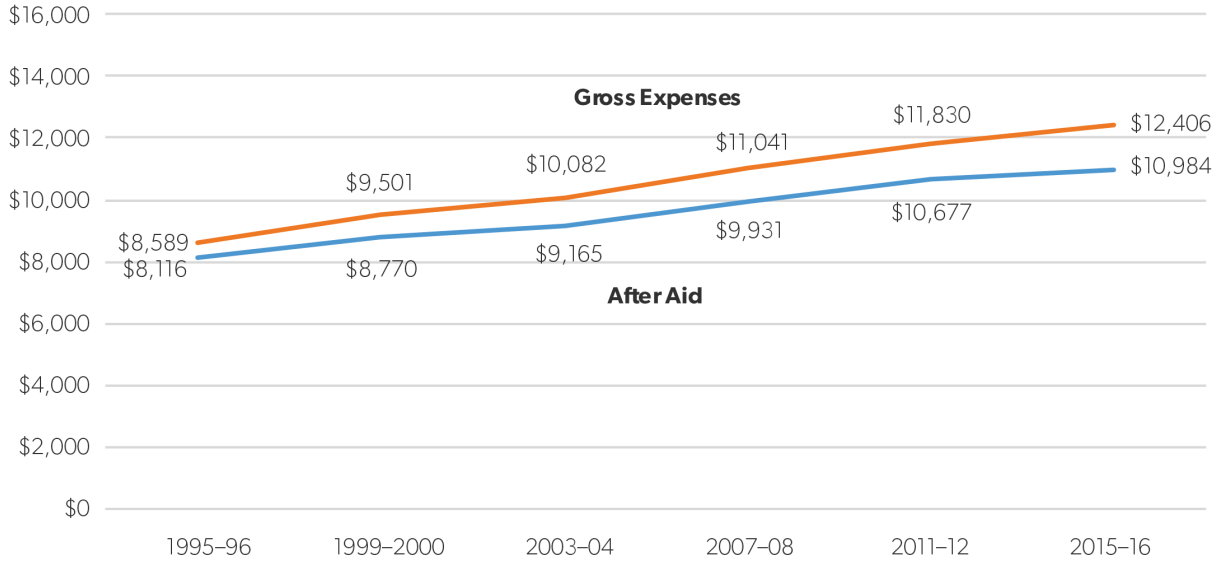
Trends in living expenses are similar for the broader group of students from families earning less than $125,000. Their living expenses also increased faster than inflation, and while financial aid became more generous for them as well, it was not enough to offset all those increases. Net living expenses for these students were some $3,000

Figure 5. Average Living Expenses Among Pell Grant Recipients at In-State Public Universities by Academic Year



Note: Figures are in constant 2015 dollars. Aid includes grants, scholarships, discounts, and federal tax credits or deductions for tuition, but not loans, that remain after tuition is fully offset. It includes prices for all bachelor's degree students, including those attending less than full time.
Source: Author's calculations using National Center for Education Statistics, National Postsecondary Student Aid Study, https://nces.ed.gov/surveys/npsas/.

Figure 6. Average Living Expenses Among In-State Students at Public Universities from Families Earning Less Than $125,000 by Academic Year



Note: Figures are in constant 2015 dollars. Aid includes grants, scholarships, discounts, and federal tax credits or deductions for tuition, but not loans, that remain after tuition is fully offset. It includes prices for all bachelor's degree students, including those attending less than full time.
Source: Author's calculations using National Center for Education Statistics, National Postsecondary Student Aid Study, https://nces.ed.gov/surveys/npsas/.

higher in 2015–16 than in the mid-1990s, even while financial aid grew to cover about $950 more of these students' living expenses during that time.[35]

These findings suggest that public perceptions about declining affordability at public universities may be driven more by changes in living expenses than tuition. Higher living expenses may also help explain why student debt levels among the two groups of students analyzed increased markedly even though tuition prices have remained relatively flat.[36] And if rising living expenses are the main factor affecting affordability at public universities, then the trend deserves more attention from researchers, policymakers, and universities.[37]

Most policy discussions about rising college costs and prices tend to focus only on tuition, or they lump tuition and living costs together, obscuring any distinct trends between the two. But the dynamics driving each set of costs are almost certainly different, as are the range of solutions and trade-offs that can help keep them affordable for students. For example, tuition prices are tied to instructional spending—and educational quality—such that it may be preferable to subsidize those costs to ensure affordability rather than force universities to cut spending. But with living expenses, the trade-off between spending and *educational* quality is tenuous at best. Thus, with living expenses, it makes sense to focus affordability policies on driving costs down rather than subsidizing them further.

Conclusion

Federal proposals to fully subsidize tuition at public universities have entered the political mainstream. Every major Democratic presidential candidate in 2020 offered some version of a federal-state matching grant program to support free tuition for in-state students at public universities. This report suggests that the main rationale for such policies—that public universities have grown evermore unaffordable—is significantly overstated.

Concern over rising tuition at public universities often ignores the generous financial aid policies already in place and how that aid has grown substantially over time, even after adjusting for inflation. Existing financial aid policies have successfully held average net tuition prices at public universities nearly constant between the 1995–96 and 2015–16 academic years for the students whom free-college policies typically target. The increase in financial aid has even been enough to cover more of a student's living expenses than during the mid-1990s.

These findings do not, however, contradict other concerns about the cost of a four-year degree at public universities. The data confirm that the cost of providing these educations are rising at rates that greatly exceed inflation, assuming that sticker prices generally reflect the educational costs that universities incur. While students have not had to pay these rising costs, other entities have, mainly the federal government and state governments to a lesser extent.

To some observers, rising higher education costs are a problem in and of themselves. In their view, rising costs reveal that higher education providers are inefficient or unnecessarily costly. Others might view the increased role of federal funding as something to be avoided, as it could enable states to abandon their historic role in financing public universities.

This report illustrates that federal aid has indeed done some of the heavy lifting in sheltering students from higher tuition prices at public universities. However, the findings presented here show that federal aid has not simply supplanted state aid but has acted more like a balancing wheel when states are hit with budget pressures, such as in the aftermath of the Great Recession in the late 2000s. When the economy is strong, state governments and universities ramp up their financial aid, while federal aid remains flat.

The rising living expenses for students enrolled at public universities documented in this report also align with concerns about declining affordability. This component cost of attending public universities has not, however, received the same rigorous scrutiny from researchers and policymakers as tuition prices have, and free-college policies typically focus on directly offsetting tuition prices, not living expenses. Living expenses may be rising for reasons that merit more generous financial aid, such as students' changing needs, including childcare for older independent students raising families while enrolled.

Alternatively, the trend may be the result of the so-called "amenities arms race" and rising expectations among students for high-end facilities such as dormitories, recreation centers, and dining facilities. In that case, policymakers and universities should pursue cost-containment efforts, not ever-larger public subsidies.

Overall, the findings in this report show that the existing framework of financial aid is far more capable of keeping college tuition affordable for those with the least resources to pay than popular narratives claim. Reformers should consider incremental changes to this system instead of the radical transformation envisioned in the free-college proposals that would establish new federal-state matching grants to fully subsidize tuition.

To be sure, this will likely require an increase in federal aid to students and families, especially during economic crises, and a further transfer of higher

education financing from states to the federal government. But that is more moderate than the larger federal role—and the unintended consequences—that would result from a new matching grant plan to fund free college. As the findings in this report show, this approach is far more effective than most observers may have considered.

Acknowledgments

I would like to thank Mamie Voight of the Institute for Higher Education Policy and other anonymous reviewers for their thoughtful comments on this report. Of course, the views expressed are my own, and I take full responsibility for any errors that remain.

About the Author

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Appendix A. Estimates for Federal Tuition Tax Benefits

All the estimates in this analysis are based on variables included in the National Postsecondary Student Aid Study (NPSAS), except for the value of federal tuition tax benefits. The author estimated these values in each of the NPSAS years using the relevant eligibility rules and corresponding data in the NPSAS. For example, the estimates rely on the reported adjusted gross income of the parents of dependent students (and of the students themselves in the case of independents), the tuition prices that students paid out of pocket or using loans, their attendance intensity, and so forth. Respondents in the NPSAS who did not file a federal tax return in the prior year of the NPSAS were assigned a tax benefit of $0.

The 1999–2000 NPSAS does not include a variable for whether a respondent filed a tax return, so one is estimated based on the 2003–04 NPSAS. Tax filers are often eligible for multiple tuition tax benefits but are allowed only one under the tax rules. The estimate in this analysis assigns respondents the tax benefit for which they are eligible that results in the largest tax reduction. The tax benefits included in the estimates for the relevant years in which they were available are the Hope tax credit, the lifetime learning tax credit, the American opportunity tax credit, and the deduction for tuition and fees.

The tax benefit estimates in this analysis reflect eligibility for a benefit, not whether families actually claimed these benefits. However, the estimates closely match actual IRS filing data in recent years. The estimated tax benefits in the 2015–16 NPSAS average $1,505 for all undergraduates eligible for a benefit. A College Board analysis of IRS statistics for tax filers claiming a tax benefit in 2016 shows that the average benefit claimed was $1,500.[38]

Another way to test the accuracy of the tax benefit estimates using the NPSAS is to compare the distribution of the total benefits with IRS statistics of the tax benefits filers have actually claimed. The College Board and the Congressional Research Service have produced estimates of the distribution of these benefits across income groups using IRS statistics. Tables A1 and A2 compare the estimates using the NPSAS and those analyses. Generally, the NPSAS estimates developed for this analysis closely match the IRS statistics, especially for the lowest-earning groups and families earning between $75,000 and $100,000. The NPSAS estimate, however, slightly undercounts the tax benefits claimed by families with incomes above $100,000 and slightly overcounts the benefits claimed by those with incomes between $50,000 and $75,000.

Table A1. Distribution of Tax Credit Dollars Claimed by Adjusted Gross Income College Board Comparison

	Distribution According to College Board and IRS Statistics, 2014 Income	Distribution According to Author's Estimates Using NPSAS Undergraduate Dataset, 2014 Income
$0–$25,000	23%	24%
$25,000–$50,000	23%	24%
$50,000–$75,000	16%	19%
$75,000–$100,000	13%	13%
$100,000–$180,000	24%	20%

Note: Estimates may not sum to 100 percent due to rounding.
Source: College Board, "Trends in Student Aid 2016," 2016, https://research.collegeboard.org/pdf/trends-student- aid-2016-full-report.pdf.

Table A2. Distribution of Tax Credit Dollars Claimed by Adjusted Gross Income Congressional Research Service Comparison

Adjusted Gross Income	Distribution According to Congressional Research Service and IRS Statistics, 2015 Income	Distribution According to Author's Estimates Using NPSAS Undergraduate Dataset, 2014 Income
$0–$30,000	31%	30%
$30,000–$50,000	19%	18%
$50,000–$75,000	16%	19%
$75,000–$100,000	12%	13%
$100,000–$200,000	23%	20%

Note: Estimates may not sum to 100 percent due to rounding. The Congressional Research Service estimate is for the American opportunity tax credit. The author's estimate includes all undergraduate tax benefits.
Source: Margot L. Crandall-Hollick, "The American Opportunity Tax Credit: Overview, Analysis, and Policy Options," Congressional Research Service, June 4, 2018, https://fas.org/sgp/crs/misc/R42561.pdf.

There are several plausible explanations for the slight mismatch between the analyses of tax filing statistics and the estimates using the NPSAS that might suggest the NPSAS figures are even more accurate than these comparisons suggest. The analyses that use IRS statistics for all tax benefits (College Board) include tax filers claiming benefits for graduate education (i.e., the lifetime learning tax credit and the tuition and fees deduction). The IRS statistics do not break out whether the tax benefits claimed were for graduate or undergraduate education. The distribution of undergraduate benefits in the NPSAS analysis may differ from the IRS statistics because the former does not include graduate students and the latter does.

The Congressional Research Service analysis excludes graduate students by analyzing statistics for only the American opportunity tax credit. It also excludes undergraduates who are ineligible for that benefit but can still claim the smaller benefits provided by the lifetime learning tax credit and the tuition and fees deduction. The NPSAS estimates include all federal tuition tax benefits for which undergraduates are eligible, which may explain some of the discrepancy.

Another reason for the discrepancy is that the NPSAS estimate cannot assign a tax benefit to students who study at more than one institution. Students who attend more than one institution therefore do not have tuition information reported in the NPSAS, although these students' tuition payments would qualify for a tax benefit. This limitation only applies to the comparison with the IRS statistics and not the larger analysis of financial aid and tuition prices in this report because all students categorized as having attended public four-year institutions in the data all must have attended only one institution by construction of the dataset. The NPSAS variable for institution type counts any student who attends more than one institution in a year as a separate category; only students who attend the same public institution throughout the year are counted as having attended a public institution. The NPSAS includes all these students' tuition information, which can be used to estimate tax benefit eligibility.

Notes

1. Brian Schatz, "Schatz, Pocan Reintroduce Legislation to End Student Loan Debt Crisis," Brian Schatz United States Senator for Hawai'i, March 6, 2019, https://www.schatz.senate.gov/press-releases/schatz-pocan-reintroduce-legislation-to-end-student-loan-debt-crisis.
2. For example, see Michael Mitchell, Michael Leachman, and Kathleen Masterson, "A Lost Decade in Higher Education Funding," Center on Budget and Policy Priorities, August 23, 2017, https://www.cbpp.org/sites/default/files/atoms/files/ 2017_higher_ed_8-22-17_final.pdf; Bernie Sanders, "College for All and Cancel All Student Debt," BernieSanders.com, https://berniesanders.com/issues/free-college-cancel-debt/; Mark Huelsman, "A 50-State Look at Rising College Prices and the New American Student," Demos, February 22, 2018, https://www.demos.org/sites/default/files/publications/The%20Unaffordable%20Era%20FINAL%202.22.18.pdf; and Jason D. Delisle, "The Cost of Ignoring College Aid," American Enterprise Institute, March 3, 2020, https://www.aei.org/education/the-cost-of-ignoring-college-aid/.
3. See Institute for College Access and Success, "How to Secure and Strengthen Pell Grants to Increase College Access and Success," October 16, 2018, https://ticas.org/wp-content/uploads/legacy-files/pub_files/pell_recs_one_pager.pdf.
4. Joe Biden, "The Biden Plan for Education Beyond High School," JoeBiden.com, https://joebiden.com/beyondhs/.
5. Schatz, "Schatz, Pocan Reintroduce Legislation to End Student Loan Debt Crisis."
6. Sanders, "College for All and Cancel All Student Debt"; and Biden, "The Biden Plan for Education Beyond High School." The claim about prices on Biden's campaign website links to information from the National Center for Education Statistics on college prices before financial aid is factored in. It can be found at National Center for Education Statistics, "Tuition Costs of Colleges and Universities," https://nces.ed.gov/fastfacts/display.asp?id=76.
7. Note that sticker prices already reflect the price reduction students receive because of the general funding that state governments provide to public universities through annual appropriations. The sticker price is what a university advertises after direct state funding has reduced the price but before any grants, scholarships, and tax credits issued to or claimed by the student are factored in.
8. In the 2015–16 academic year, 73.4 percent of students from the families earning less than $125,000 at in-state public universities received grant or scholarship aid. The number is higher when federal tax benefits are included because some students receive tax benefits as their only form of aid. National Center for Education Statistics, Datalab, https://nces.ed.gov/datalab/index. aspx?ps_x=cmccah3d.
9. Federal income tax rules treat grant and scholarship aid as tax-free income when applied to tuition, but if it is applied to non-tuition expenses, then the aid is treated as taxable income. Therefore, the default allocation of financial aid is usually to cover tuition expenses first. Furthermore, financial aid providers often restrict their funds to cover tuition expenses only, particularly state grants and aid provided by universities themselves as tuition discounts, although this is not the case for federal Pell Grant.
10. National Center for Education Statistics, National Postsecondary Student Aid Study, https://nces.ed.gov/surveys/npsas/.
11. Thomas Kaplan and Katie Glueck, "Biden, Courting Liberals, Backs Tuition-Free College for Many Students," *New York Times*, March 15, 2020, https://www.nytimes.com/2020/03/15/us/politics/biden-backs-free-college.html.
12. Income recorded in the National Postsecondary Student Aid Study (NPSAS) is based mainly on federal tax returns filed for the prior year. The $125,000 income cutoffs have been adjusted accordingly throughout. For example, for the 2015–16 academic year, the income cutoff for the group with earnings below $125,000 is actually $124,739 to convert 2014 dollars to 2015 dollars.
13. This was adjusted for inflation using the personal consumption expenditures price index as of February 2020. See Federal Reserve Bank of St. Louis, "Personal Consumption Expenditures (Chain-Type Price Index)," https://fred.stlouisfed.org/series/PCEPI.
14. Foreign students are excluded from each group of students.
15. Part-time students make up a stable share of the population analyzed over time (about 40 percent), and the long-term trend in prices is the same if these students are excluded. Average annual tuition prices are about $200 higher for exclusively full-time students across the years analyzed.
16. Net tuition prices are calculated by subtracting the average estimated tax benefit from the variable NETCST9 in the NPSAS dataset. The NETCST9 variable reflects the student's tuition after all grant and scholarship aid is applied, but not tax benefits; student loans are not included in the aid used to calculate NETCST9, nor are veterans and Department of Defense educational benefits. The NETCST9 variable for this analysis can be retrieved using the publicly available TrendStats and PowerStats. The author estimated the tax benefit values using the individual-level data. For example, in 2015–16, the NETCST9 variable for the Pell Grant recipient group is an average of $1,776.70. The average estimated tax benefit is $666.86. Therefore, the net tuition price for this group of students is $1,109.84. The table can be viewed using the Datalab or by entering in the retrieval code "bdcag4d" in TrendStats. See National Center for Education Statistics, Datalab.
17. The net tuition prices are $521 and $1,121, respectively, for exclusively full-time students.
18. The net tuition prices are $2,182 and $2,600, respectively, for exclusively full-time students.
19. In the 2015–16 academic year, 73.4 percent of students from families earning less than $125,000 at in-state public universities received grant or scholarship aid. The number is even higher when federal tax benefits are included. In the 1995–96 academic year, 45.6 percent of these students received grant or scholarship aid, and none received tax benefits because they had not yet been enacted. See National Center for Education Statistics, Datalab.

20. Figures for students from families earning less than $125,000 include students who received no financial aid. Financial aid included in the statistics throughout this report include federal grants, which is mainly the Pell Grant; state grant and scholarship programs; scholarships, discounts, and grants that universities provide to students directly; scholarships and grants from private sources; and federal tuition tax benefits that can be claimed on federal tax returns. This analysis excludes any other sources of aid, such as federal veterans benefits and Department of Defense programs. The NPSAS dataset includes student-level data for all the included financial aid sources except the tax benefits. These are estimated based on the terms of the benefits and related data in the NPSAS, such as a family's annual growth income, and net tuition prices paid. Estimated tax benefits include the American opportunity tax credit, the lifetime learning tax credit, and the deduction for tuition and fees. See Appendix A for a discussion of these estimates and their accuracy.

21. For exclusively full-time students, the figures are $4,543 and $9,880, respectively.

22. For exclusively full-time students, the figures are $2,081 and $7,516, respectively.

23. Education Trust, "Beyond Pell: A Next Generation Design for Federal Financial Aid," October 1, 2014, https://edtrust.org/resource/beyond-pell-a-next-generation-design-for-federal-financial-aid/.

24. Jason D. Delisle and Cody Christensen, "Pell Grant Mission Creep," American Enterprise Institute, July 2019, https://www.aei.org/wp-content/uploads/2019/07/Pell-Grant-Mission-Creep.pdf. There is no stated income cutoff for the Pell Grant. Instead, eligibility is a function of the size of the maximum grant lawmakers set each year. When the maximum increases faster than inflation, which it has over long periods, students from families higher up the income distribution become eligible for a Pell Grant.

25. Figures are for dependent and independent students who filed the Free Application for Federal Student Aid and are US citizens or foreign residents, regardless of attendance intensity and dependency status. See National Center for Education Statistics, Datalab.

26. Taxpayer Relief Act of 1997, Pub. L. No. 105–34 § 20.

27. In the early 2000s, policymakers added a third benefit: a deduction for tuition and fees. See American Recovery and Reinvestment Act of 2009, Pub. L. No. 111–5.

28. For the president's fiscal year 2021 budget request, see White House, Office of Management and Budget, "Analytical Perspectives," https://www.whitehouse.gov/wp-content/uploads/2020/02/ap_13_expenditures_fy21.pdf. This figure includes tuition tax benefits claimed for graduate school.

29. Another reason average tax benefits are lower among Pell Grant rcipients is that the refundable portion of the $2,500 American opportunity tax credit, the largest tuition tax benefit, is limited to $1,000. Families with low or no tax liability to offset are thus limited to $1,000 through the benefit.

30. Michael Mitchell, Michael Leachman, and Kathleen Masterson, "A Lost Decade in Higher Education Funding," Center on Budget and Policy Priorities, August 23, 2017, https://www.cbpp.org/sites/default/files/atoms/files/2017_higher_ed_8-22-17_final.pdf.

31. State governments received block grants from the federal government under the American Recovery and Reinvestment Act of 2009 that they could use to fund their K–12 or higher education systems. These funds may have played a limited role in offsetting potential tuition increases at public universities. However, states opted to allocate most of these funds to their K–12 systems. In 2011, these funds accounted for about only 3 percent of state higher education funding. Thus, their effect is likely negligible on the findings in this report. State Higher Education Executive Officers, "State Higher Education Finance FY 2012," 2013, https://sheeo.org/wp-content/uploads/2019/03/SHEF_FY12-2.pdf.

32. In the 2015–16 academic year, only 26.0 percent of students in the group from families earning less than $125,000 lived on campus. In the 1995–96 academic year, 20.8 percent lived on campus. See National Center for Education Statistics, Datalab.

33. The variable used is BUDNONAJ or the equivalent in earlier years of the NPSAS dataset. Researchers have examined the reliability of estimates universities publish for living expenses and found wide variation in these figures with costs that students may actually incur. Robert Kelchen, Sara Goldrick-Rab, and Braden Hosch, "The Costs of College Attendance: Examining Variation and Consistency in Institutional Living Cost Allowances," *Journal of Higher Education* 88, no. 6 (March 9, 2017): 947–71, https://doi.org/10.1080/00221546.2016.1272092.

34. In 1995–96, 60.8 percent of the Pell Grant recipient group (64.6 percent among full-time students in this group) had enough financial aid left over after paying tuition expenses to apply aid to their living expenses. Among students in 2015–16, the figure had declined to 51.3 percent (or 52.4 percent among full-time students in this group). While fewer Pell Grant recipients received enough aid to cover some of their living expenses over time, the average amount of aid that was applied to living expenses still increased because financial aid grew enough among the shrinking share of students who had aid applied to living expenses to raise the average aid applied to living expenses for the whole group. This may be the result of more middle-income students becoming eligible for Pell Grants over time. These students receive relatively small grants, which are not large enough to cover all tuition and some of their living expenses, even when combined with other aid.

35. In 1995–96, 21.2 percent of students from families earning less than $125,000 (26.3 percent among full-time students) had enough financial aid left over after paying tuition expenses to apply aid to their living expenses. The figure increased to 30.9 percent (33.7 percent among full-time students) in 2015–16.

36. Annual borrowing among in-state students at public universities from families earning less than $125,000 (including those who did not borrow) was about $2,500 in the mid-1990s, after adjusting for inflation. By the 2015–16 academic year, it had doubled to $5,000.

Meanwhile, net tuition prices increased by about only $500 for this group. Changes in annual borrowing were similar for the Pell Grant recipient group. See National Center for Education Statistics, Datalab.

37. Other researchers have examined rising living expenses at universities and conclude that prices have increased faster than inflation has. See Kristin Blagg, Matthew M. Chingos, and Victoria Lee, "The Price of Room and Board," Urban Institute, October 2017, https://www.urban.org/sites/default/files/publication/94021/the-price-of-room-and-board_0.pdf.
38. College Board, "Trends in Student Aid 2018," 2018, https://research.collegeboard.org/pdf/trends-student-aid-2018-full-report.pdf.