

**Tuition as a Path for Affordability?
The Pursuit of a Progressive Tuition Model at the University of California**

John Aubrey Douglass
UC Berkeley

Patrick A. Lapid*
Bureau of Consumer Financial Protection

Abstract

In an environment of declining public funding and rising tuition rates, many public universities in the US are moving toward a “*progressive tuition model*” that attempts to invest approximately one-third of tuition income into institutional financial aid for lower-income and middle-class students. The objective is to mitigate the cost of rising tuition and keep college affordable. But is this model as currently formulated working? Utilizing data from the Student Experience in the Research University (SERU) Survey of undergraduates and other data sources, this study explores these issues by focusing on students at the University of California (UC) and 10 research-intensive public institutions that are members of the SERU Consortium. Focusing mostly on survey data from 2014, we find that increases in tuition, and costs related to housing and other living expenses, have not had a significant negative impact on the number of lower-income students attending UC or on their behaviors. Since the onset of the Great Recession, there has been an actual increase in their number—a counterintuitive finding to the general perception that higher tuition equals less access for the economically vulnerable. At the same time, there is evidence of a “middle-class” squeeze, with a marginal drop in the number of students from this economic class. With these and other nuances and caveats discussed in this study, the *progressive tuition model* appears to have worked in terms of affordability and with only moderate indicators of increased financial stress and changed student behaviors. This study indicates that tuition can and should be a part of the search for a viable funding model for many public universities, like UC, and that demanding lower or no tuition does not appear to be based on any substantial analysis of the correlation of tuition and affordability.

* John Aubrey Douglass, Senior Research Fellow—Public Policy and Higher Education, Center for Studies in Higher Education, Goldman School of Public Policy, UC Berkeley; Patrick A. Lapid, Economist, Office of Research, Bureau of Consumer Financial Protection. This article is the result of the author’s independent research and does not necessarily represent the views of the Bureau of Consumer Financial Protection or the United States. Corresponding author: John Aubrey Douglass, UC Berkeley—Center for Studies in Higher Education, Berkeley, CA, USA, e-mail: douglass@berkeley.edu.

Tuition as a Path for Affordability? The Pursuit of a Progressive Tuition Model at the University of California

John Aubrey Douglass
UC Berkeley

Patrick A. Lapid*
Bureau of Consumer Financial Protection

The cost of enrolling in college or a university has been steadily rising, generating considerable concern among American families and intense media attention (Quinton 2016). Among lower-income and middle-class students, there is a sense that a public college or university education is increasingly out of reach or a financial burden on a scale never experienced before (Goldrick-Rab 2016). Student debt levels are at an historic high—although largely fueled by dramatic increases in the number of students entering for-profit institutions and the rising tuition in professional graduate programs (Looney and Yannelis 2015). And the cost of attending a public university or college emerged as a major campaign issue in the 2016 presidential election, at least within the Democratic Party.

Why has tuition gone up so much in public institutions in the US? The most significant reason is the long-term decline in public investment in public higher education over the past two decades, with a sharp acceleration of this trend with the arrival of the Great Recession in 2008. State disinvestment has resulted in a shift of the financial burden to students. One study notes that between 2001 and 2011, some 79 percent of the tuition hikes at public universities was due to declining state appropriations, some five percent was due to increased administrative spending, and another six percent was due to construction costs. Rising administrative costs linked to regulatory requirements, the growing complexity of institutions and service desires of students and other stakeholders are also a factor (Hiltonsmith 2015).

Even as the economy has slowly recovered, state funding for higher education remains far below prerecession levels for most states. In 1988, public colleges and universities received, on average, 3.2 times as much in revenue from state and local governments as they did from students. They now receive about 1.1 times as much from states and localities as from students (Mitchell and Leachman 2015).

At most public research universities, like the University of California, students now pay substantially more toward their education than the state does—an historic shift (Legislative Analyst's Office 2016). Yet, increased tuition has not fully made up for the huge decline in state subsidies to cover the operational costs of modern universities.

* John Aubrey Douglass, Senior Research Fellow—Public Policy and Higher Education, Center for Studies in Higher Education, Goldman School of Public Policy, UC Berkeley; Patrick A. Lapid, Economist, Office of Research, Bureau of Consumer Financial Protection. This article is the result of the author's independent research and does not necessarily represent the views of the Bureau of Consumer Financial Protection or the United States. Corresponding author: John Aubrey Douglass, UC Berkeley—Center for Studies in Higher Education, Berkeley, CA, USA, e-mail: douglass@berkeley.edu.

Within this environment, most state universities have pursued significant reductions in operating costs. This has included cuts in the number of permanent faculty and staff, hiring even more part-time instructors, rising student-to-teacher ratios, and reductions in the number of classes and program offerings (Mitchell and Leachman 2015). In some states, the search for additional revenue has included limits or cuts in the number of state-resident undergraduates *and* the recruitment of out-of-state and international students who pay higher tuition fees.

Compounding the challenges faced by public higher education, in states like California the population is growing and the labor market is in need of students with a bachelor's degree or higher. One study estimates that California faces a severe shortage of highly educated workers unless there is a substantial expansion of its public higher education system.¹

In the midst of rising tuition and fee costs for students, the University of California (UC) and many other public universities have re-invested a portion of their tuition income and other campuses resources into need-based aid (known as “return-to-aid”). The scale of return-to-aid policies is significant and relatively new. The objective is to mitigate rising costs for lower- and middle-income students. The dramatic growth in institutional aid then compliments federal financial aid including Pell Grants, direct loan programs, as well as state-based financial aid programs such as California's Cal Grants.

This has resulted in a “*progressive tuition model*” that charges higher-income students more to help reduce the cost and debt for lower-income students and their families. State governments use to do this via tax and spending policies, providing subsidies to universities who then charged uniformly low tuition and fees. But with the precipitous declining funding support by lawmakers, now public universities are taking an increasing role in taxing the wealthy to pay for the poor (Douglass 2015).

But is this evolving financial aid model as currently formulated working? What levels of financial stress are students of all income groups experiencing? And are they changing their behaviors?

This study explores these questions by utilizing data from the Student Experience in the Research University (SERU) Survey of undergraduates and other data sources. We focus the analysis on students at the nine undergraduate campuses of the University of California (UC). The UC network of campuses has made a concerted effort to mitigate costs for low-income students. As a result, some 55 percent of all UC undergraduates pay no tuition.

We also explored SERU data at 10 other major public flagship universities that are members of the prestigious Association of American Universities (AAU)—a group of 62 major research universities. All of these campuses collaborate in administering SERU surveys and share data to gauge changes in student demographics, experiences, behavior patterns, and postgraduate plans. SERU data is also linked to other institutional data sets.

We also limit our analysis to the survey results from 2014 which was preceded by significant tuition increases and in which lower-income and middle-class students and their families experienced significant economic difficulties in the slow aftermath of the Great Recession. The 2014 cohort includes survey responses from 130,125 students. We also provide some limited longitudinal analysis from previous SERU surveys in 2010 and 2012.

In summary, we find that significant increases in tuition and costs related to housing and other living expenses have not had a negative impact on the number of lower-income students attending UC. Reflecting to some degree UC's robust financial aid policies, and perhaps the growing number of lower-income families in California, there has been an actual increase in their

¹ Public Policy Institute of California, *Will California Run Out of College Graduates?* October 2015.

number—a counterintuitive finding to the general perception that higher tuition equals less access for the economically vulnerable. We also find that students’ academic performance and satisfaction with their academic and social experiences are not related to family income.

At the same time, there is evidence of a “middle-class” squeeze, with a marginal drop in the number of students from this economic class. Students’ concerns for paying for higher education and accumulated student debt in the 2014 SERU are predictably higher among lower-income students, yet upper-middle-income students (with annual family incomes from \$80,000–125,000) are the least likely to agree that the cost of attendance is manageable. With these and other nuances and caveats briefly discussed in this study, the *progressive tuition model* appeared to work in terms of affordability and with only moderate indicators of increased financial stress and changed student behaviors. These results are not necessarily predictive of the future if tuition rates go up further. In addition, housing and living costs are increasing for most students. In the period we studied, 2010 through 2014, these costs rose but appear to have been manageable for most students. However, since then, living costs have climbed considerably in most areas of California and in the communities that surround the AAU campuses we include in our analysis. While they are not inseparable, it does appear that housing and living costs are a much more significant factor related to university affordability than tuition among the research-intensive universities we focus on.

More results from our study shortly, but first a discussion of the allure of free tuition, and the realities of declining public investment in higher education.

The Allure of Free Tuition

Throughout the world, tuition at any level is regarded as a significant barrier for university access to disadvantaged socioeconomic groups. In South Africa, students have protested and demanded free tuition at all its public universities. The “fees must fall” movement has resulted, thus far, in classes being suspended and student occupation of university buildings. (Hauser 2016). Similar protests occurred in Brazil (Pregaman and Dilorenzo 2016). And in Chile, the promise of free university tuition at public universities for students from public high schools propelled president Michelle Bachelet into power (O’Boyle 2016) and, subsequently, the difficulties of defining who should get a highly sought and limited public good for free, and how a nation can pay for it.

The political movement for free tuition is often demanded by stakeholders without a significant plan on how to make up lost revenue or concern about the cost-benefit ratio of providing large subsidies for more wealthy students. Universities are like other organizations in society, if they lose significant income there are consequences. In the case of public universities, this can include reductions in enrollment capacity, in the number of courses offered, and in rising student-to-faculty ratios.

There are many different types of higher education institutions in the US with different missions and costs, and different demographic mixes of students—community colleges, vocational institutions, liberal arts colleges, master’s granting universities and research-intensive universities, most public and some private, some open to all students with many being enrolled part-time and some highly selective with full-time students. Hence, there are very different dynamics among the institutions related to the operational costs of educating students, what students are charged, and what levels of debt they may or may not incur.

Thus far, there is very little research on the impact of rising tuition on students when matched in some form with evolving financial aid policies. Nor is there significant analysis on the socioeconomic costs and benefits derived by tuition-free higher education.² Indeed, while economists have focused attention on the market relationship of rising costs for consumer goods on consumer choices, the complex relationship between rising tuition, financial aid, and access at public universities has only recently emerged as a significant area of research.

Our study does not portend to fully explore all of these important public policy issues, but rather to provide a case example of a group of peer public research-intensive universities, focusing mostly on the University of California, and on student satisfaction and behaviors. All of these universities have raised tuition in the face of state disinvestment; all are pursuing in one form or another the *progressive tuition model*.

UC and the Progressive Tuition Model

Reflecting national trends, over the past two decades state funding for California higher education on a per student basis has declined considerably. In part, economic downturns and an inadequate tax model led to cuts in funding for the University of California and other public colleges and universities. Another reason for the decline in per student funding is the increased public mandated costs of health care and pensions, and large-scale investment and costs related to prisons. Higher education must compete for tax dollars as “discretionary” spending (not mandated by law).

The onset of the Great Recession accelerated the disinvestment pattern, resulting in a 30 percent drop in state funding to California’s world-renowned public university system between 2008 and 2012 (Cook, Murphy, and Johnson 2016; Parker 2015). At the same time, UC continued to enroll more students to meet a social contract to accept students who graduate in the top 12.5 of high school graduates. UC faced a significant conundrum.

A growing state population and increased high school graduation rates meant increased demand for access. Should UC continue to grow in the midst of declining state funding per student? Or continue to enroll students to meet its social contract. UC’s political calculation was to continue to grow in enrollment. As a result, the number of undergraduate degrees awarded grew by 47 percent between 2000 and 2014, from 32,741 to 48,069 degrees (University of California 2015).³

To partially make-up for the loss in state funding, UC increased student tuition and fees. In the 2005–2006 academic year, tuition and fees was \$7,430 per year at UC’s nine undergraduate

² An increase in grant aid by \$1,000 is predicted to increase the probability of college enrollment by four percentage points; this finding is supported in reviews of financial aid research in the 1980s (Leslie and Brinkman 1987), 1990s (Kane 2003), and 2000s (Dynarski and Scott-Clayton 2013). Bettinger (2004); Castleman and Long (2013); Page, Castleman, and Sahadewo (2016); and Goldrick-Rab et al. (2016) provide causal evidence of need-based aid increasing retention and degree attainment, as well as reducing time to completion. A recent review of these and related studies is by Page and Scott-Clayton (2016). Lastly, the use of grants versus loans to finance college can influence early career choices as well (Rothstein and Rouse 2011).

³ During that same period, the state withdrew from providing capital funds critical for expanding enrollment and program capacity to meet the growing demand for one or more forms of postsecondary education—in California, for example, the state provides virtually no funds for capital construction, let alone the adequate funding of maintenance and the upgrading and retrofitting of old buildings.

campuses; by 2011–2012 it climbed to \$14,460. In this period, UC continued to enroll additional students to help maintain its social contract with the people of California—even though it was not receiving state funding for the increased workload. The result? Student-to-faculty ratios climbed, and the overall expenditures per student declined from approximately \$18,000 per student (undergraduate and graduate) to \$16,500 (University of California 2015).

To help mitigate the impact of increased tuition for lower- and middle-class students, UC devotes some 33 percent of all tuition income to need-based financial aid that differentiates net costs across income groups. This is in addition to federal and state programs for lower-income students, such as Pell Grants and Cal Grants. Approximately \$8,500 dollars of the current \$14,460 in tuition and fees for an academic year goes now to financial aid primarily for lower income students (University of California 2013).⁴

Between 2007–2008 and 2015–2016, institutional aid spending more than doubled at the universities, growing from \$313 million to an estimated \$735 million at UC. Institutional aid includes the Blue and Gold Opportunity Plan, established in 2009–2010, which fully covers tuition and fees for students with family income under \$80,000 a year. The Middle-Class Scholarship, a state funding aid program, partially covers tuition for families up to \$150,000 in annual income.⁵

As noted, about 55 percent of undergraduate students at UC receive aid sufficient to fully cover systemwide tuition and fees; an additional nine percent receive partial tuition coverage. In determining need-based aid, UC first applies applicable federal and state aid on a student's behalf and assumes each student must contribute \$9,500 through work or borrowing. It then uses institutional aid to fill any remaining gap between available resources and the cost of attendance. UC's average gift aid per recipient from all sources exceeds tuition by about \$4,600—meaning the average aid award pays for some living costs (Legislative Analyst's Office 2016).

Socioeconomic Background of UC Students

How do these combined aid policies impact the net costs of attendance and student debt levels? Figure 1 shows the percentage of UC undergraduates with parents in the indicated income categories, from the 2005–2006 academic year up to 2013–2014. We see that the percentage of undergraduates attending UC from lower-income families has risen, particularly since 2009 and among families making less than \$26,000 a year. In 2009, approximately 35 percent of UC's undergraduates were from family incomes of \$53,000 or less, and by 2014 it rose to 40 percent.

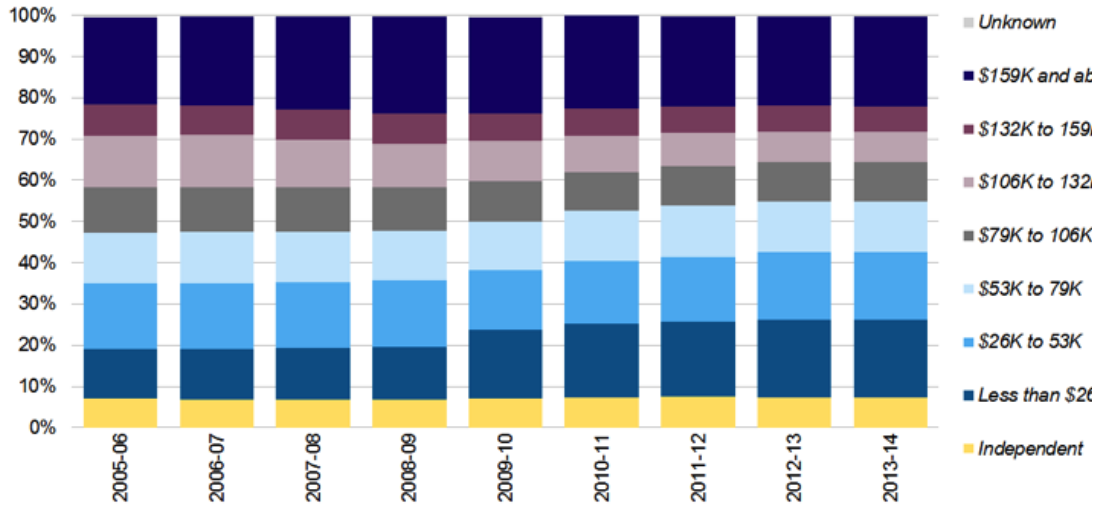
There has been a slight decline in attendance among students from upper-income backgrounds, particularly from families in the \$106,000–132,000 income range. The share of students from the highest-income families (over \$159,000 in income) rose slightly during the Great Recession but is constant now at about 20 percent of total UC attendance.

Since stated tuition rose at UC, it is important to note how net costs have diverged for lower- and upper-income students over the past decade at UC, as shown in Figure 2. The net cost of attendance (taking into account grants, scholarships, and other gift aid, and adjusting for inflation)

⁴ Since the early 1990s, tuition policy includes a return-to-aid 33 percent of new tuition and fee revenue will be returned to financial aid, and a 33 percent in return-to-aid for professional school students and 50 percent in return-to-aid for graduate academic students.

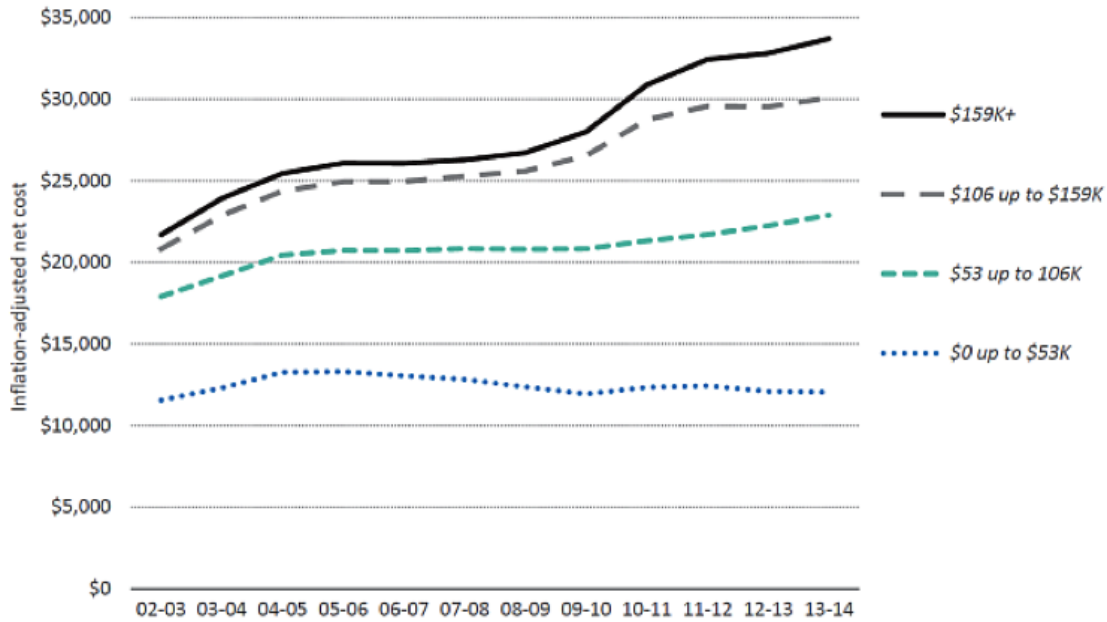
⁵ UC's own information on the following programs: the Blue and Gold Opportunity Plan (<http://admission.universityofcalifornia.edu/paying-for-uc/glossary/blue-and-gold/>) and the Middle Class Scholarship Program (<http://admission.universityofcalifornia.edu/paying-for-uc/glossary/middle-class-scholarship/index.html>).

Figure 1. Trends in the parent income of UC undergraduates, 2013 constant dollars, UC-wide, 2005–06 to 2013–14.



Source: Indicator 2.2.3, 2015 Accountability Report, University of California.

Figure 2. Net cost of attendance by family income, UC-wide, 2002–03 to 2013–14.



Source: Indicator 2.1.2, 2015 Accountability Report, University of California.

has stayed flat for lower-income families. By comparison, the net cost for middle-income families has risen slightly, while the net costs for upper-middle and upper-income families making over \$106,000 annually has risen close to \$30,000.

In recent years, more students have been borrowing to finance their college education. Figure 3 shows the inflation-adjusted student loan debt burden of graduating seniors in the UC system, from 1999–2000 to 2013–2014. Up until 2008–2009, the average debt among students who borrow had been declining slightly, to \$17,600, with an increase to \$20,600 over the following years. Close to 50 percent of graduates had no student loan debt, although this fraction has declined to 45 percent in the most recent years. We see that the shares of students borrowing above \$22,000 for college have risen since 2009.

Focusing on student loan debt burden by parent income groups in Figure 4, we see that lower-income students have always been more likely to borrow, but that the likelihood of borrowing and the average amount of cumulative borrowing among these students has only risen slightly since 2009. There are larger increases in cumulative borrowing among the middle- and upper-income groups, and larger increases in the likelihood of borrowing among graduating seniors whose families make \$53,000 to \$159,000.

It appears that higher aid, combined with tuition increases, has resulted in greater net cost differentiation by income. Lower-income students in the UC system are paying similar net costs when compared to students a decade ago, with only a slight increase in their debt burden. Students from higher-income groups are paying greater net costs and taking on more debt.

At least to date, the increase in tuition, and costs related to housing and other living expenses, has not had a negative impact on the number of lower-income students attending UC. Reflecting to some degree UC's robust financial aid policies, and perhaps the growing number of lower-income families in California, there has been an actual increase in their number—a counterintuitive finding to the general perception that higher tuition equals less access to the economically vulnerable.

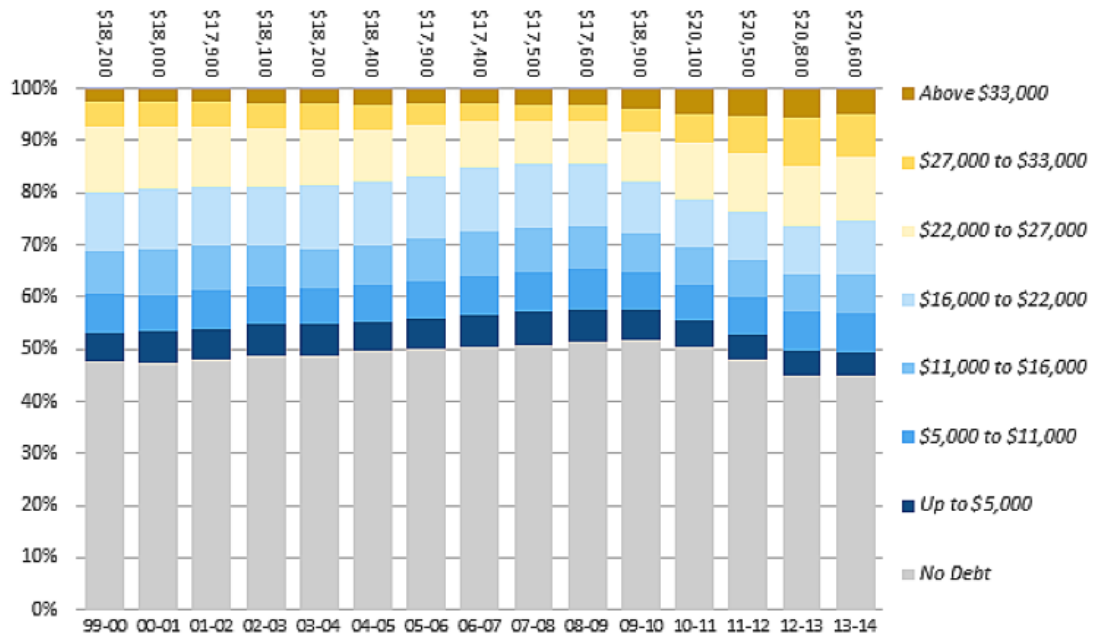
At the same time, there is evidence of a “middle-class” squeeze (particularly among students that report upper-middle-class family incomes of \$106,000 to \$159,000) with a marginal decline in their enrollment numbers. This also may partially reflect an overall decline in middle-class families in California's population, as well as concerns over affordability and market shifts with more Californians seeking higher education in other states.

SERU Survey Data

Among the lower-, middle-, and high-income students at UC, what level of economic stress are they experiencing? Do students' academic and social experiences and behaviors vary by income? The SERU Survey provides a window for examining these questions.

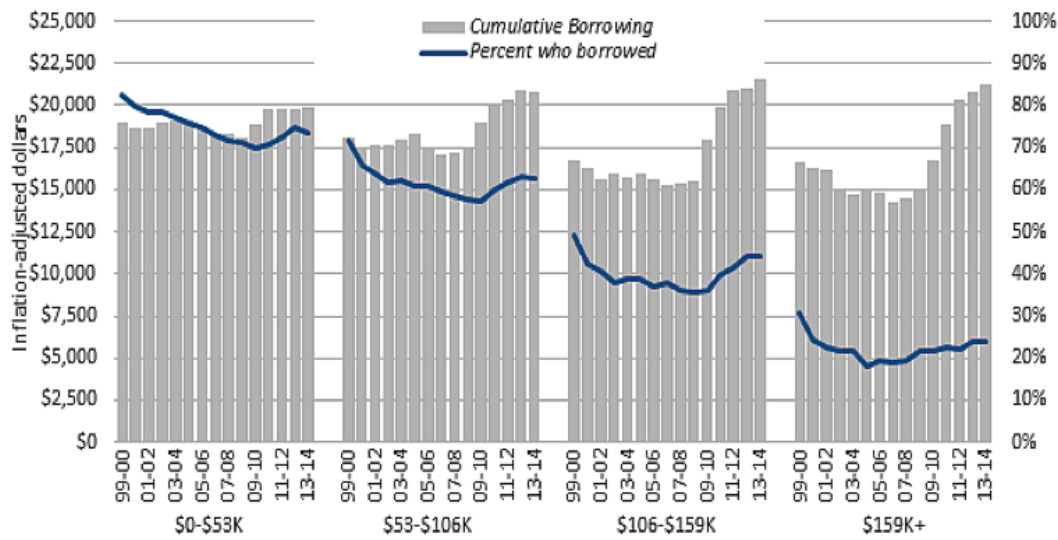
SERU is administered as an on-line survey administered to all undergraduates at participating universities, including all nine of UC's undergraduate campuses and more than 20 major public universities in the US, all of which are members of the Association of American Universities (a version is also administered internationally at top-tier national universities). Undergraduate students answer questions about their background (socioeconomic status, parental education, personal characteristics, high school GPA, goals and aspiration, reason for attending their university), their various forms of academic engagement (for example, time allocation, student to faculty interaction, research engagement, campus climate, community and civic engagement, co-curricular activities), their satisfaction (academic and social experience, sense of belonging, val-

Figure 3. Student loan debt burden of graduating seniors, inflation-adjusted, UC-wide, 1999–2000 to 2013–14 (average debt of those with debt shown above each year).



Source: Indicator 2.5.2, 2015 Accountability Report, University of California.

Figure 4. Student loan debt burden of graduating seniors by parent income, inflation-adjusted UC-wide 1999–2000 to 2013–14.



Source: Indicator 2.5.3, 2015 Accountability Report, University of California.

ue for money), and their self-assessed learning outcomes (understanding their field of study in the major, quantitative and writing skills, and leadership skills).

Our analysis uses data largely from the 2014 administration of the undergraduate survey at the nine undergraduate campuses of the University of California and 10 other public AAU universities outside of California:

SERU: University of California

- **Berkeley**
- **Davis**
- **Irvine**
- **Los Angeles**
- **Merced**
- **Riverside**
- **San Diego**
- **Santa Barbara**
- **Santa Cruz**

SERU: Other AAU Institutions

- Indiana University
- Purdue University
- Rutgers University
- Texas A&M University
- University of Iowa
- University of Michigan
- University of Minnesota
- University of Pittsburgh
- University of Virginia
- University of Washington

As noted, for the 2014 cohort of data, we analyze over 130,000 survey responses (see Appendix A information on total responses by family income, parental education, and race/ethnicity. We also utilize data and analysis from previous SERU surveys in 2010 and 2012 (Chatman 2011) to look for changes in behaviors and perceptions among income groups, and by race and ethnicity.

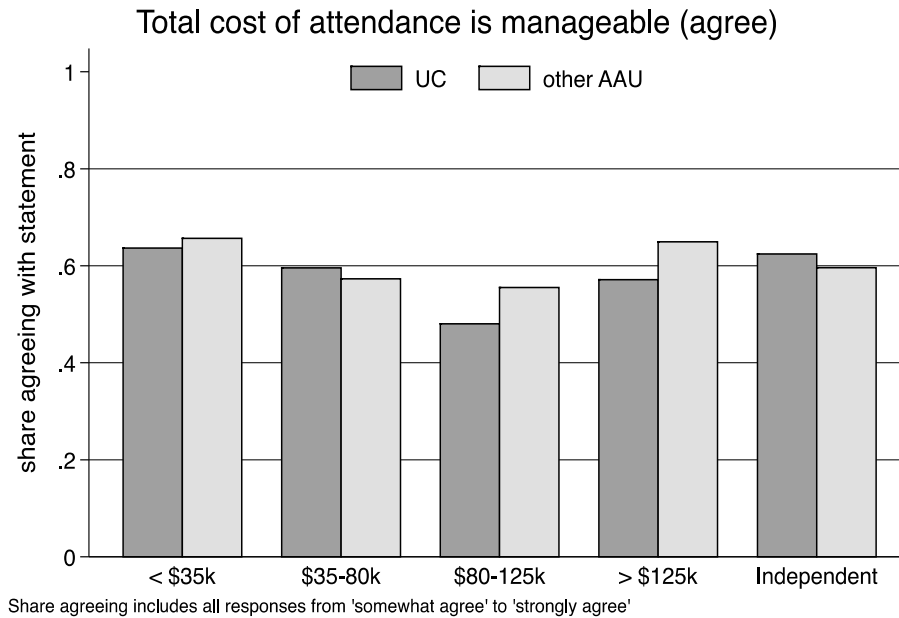
Affordability and Academic Engagement

We first focus on responses related to the issues of affordability, academic engagement, and the concerns of students by socioeconomic status. Students are categorized by their self-reported family income: under \$35,000, \$35,000–79,999, \$80,000–124,999, and \$125,000 and over. This grouping reflects a general equal distribution of students among the income groups and past categories of students by family income in previous SERU research.

All financially independent students are classified together as a separate group. These income groups are separated by campus type (the nine UC campuses compared to the 10 other AAU institutions participating in the SERU Survey in 2014) for comparisons across income groups and between the UC system versus other research institutions.

When asked if the total cost of attendance is manageable, around 60 percent of students in the lowest- and highest-income groups agree with the statement (see Figure 5; data for all henceforth figures are provided in Appendix B). The share of students agreeing falls in the middle-income groups before rising again for the highest-income students. These perceptions about managing cost of attendance are similar when comparing UC and other AAU institutions' respondents: lower-income students are the most likely to agree, while upper-middle-income students from families making \$80,000–125,000 in income are the least likely to express agreement. UC students from families making over \$80,000 a year are less likely to agree that the cost of attendance is manageable compared to other AAU students.

Figure 5. Shares of student respondents agreeing with the statement “the total cost of attendance is manageable,” by family income and UC/other AAU institution type.



Source: SERU 2014.

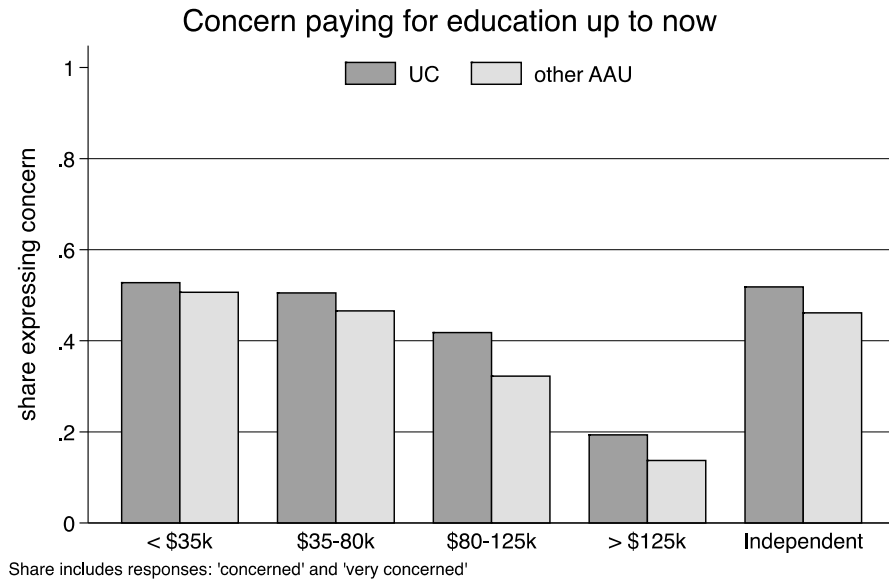
Students’ concerns with paying for their education and accumulated college debt follow a more predictable pattern; these concerns are highest among students from families making under \$35,000 in annual income and are similar for students in the \$35,000–80,000 range before falling among students from higher-income families (Figures 6 and 7). This pattern of concern for paying for undergraduate education is similar across institutional types, but concerns about paying for education and educational debt are somewhat lower at other AAU campuses versus among students in the UC system.

The overall concerns about financing college appear to be rising over time (Figure 8), at both UC and other AAU campuses; current concerns about financing a college education and educational debt appear to be more salient. What actions did students take in 2014 to meet their costs of attending college? To mitigate increasing costs, some students may have taken on- or off-campus employment, as well as taken action to cut back on academic and personal expenses.

Student Behaviors—Employment

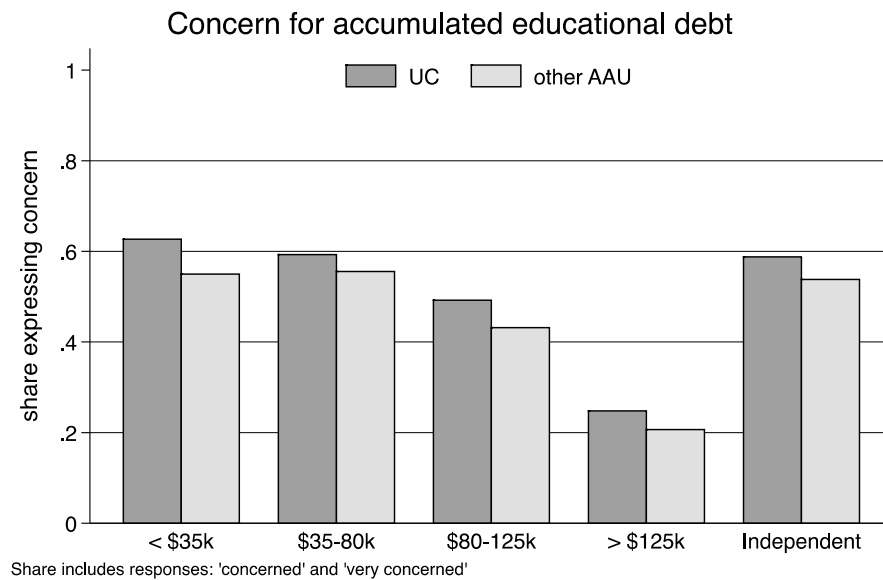
SERU data indicates that the likelihood of working is negatively correlated with family income for dependent students. We do have concerns that students who are employed more than 20 hours may be underrepresented among SERU survey responses. Among those that did respond, working students at both UC and other AAU institutions work a similar number of weekly hours.

Figure 6. Shares of student respondents expressing concern with paying for education up to now, by family income and UC/other AAU institution type.



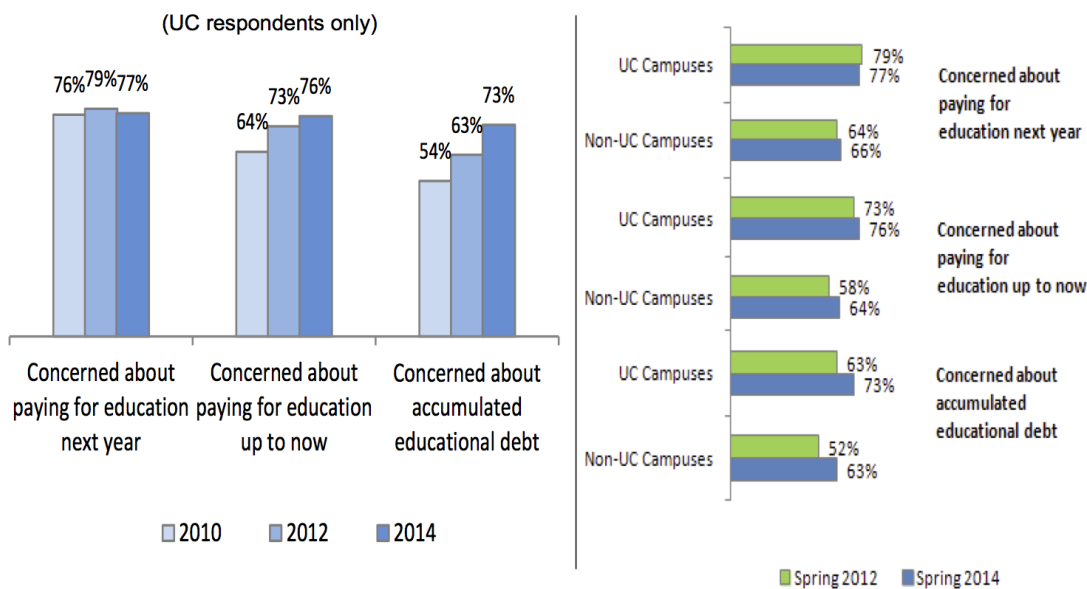
Source: SERU 2014.

Figure 7. Shares of student respondents expressing concern with accumulated educational debt, by family income and UC/other AAU institution type.



Source: SERU 2014.

Figure 8. Comparison of student affordability concerns across recent years, at UC and selected non-UC AAU institutions.



Source: UCUES 2010, 2012, 2014 and SERU 2012, 2014.

Independent students are both more likely to work, and tend to work many more hours, with over half of working independent students reporting 20 or more weekly hours of paid work.

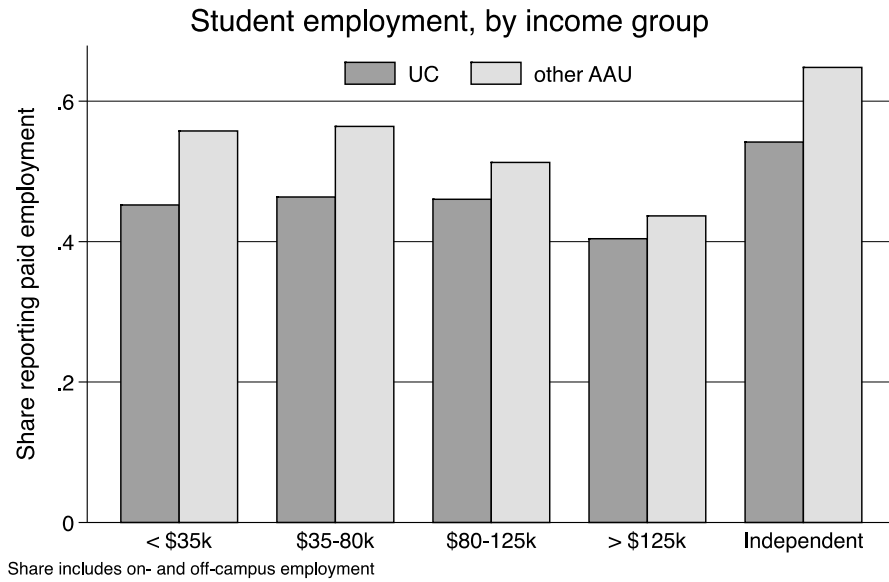
The share of students having any employment (both on- or off-campus) is smaller overall at UC campuses versus other AAU institutions participating in the 2014 SERU survey (Figure 9). Almost 46 percent of all UC survey respondents reported working for pay in 2014; this proportion is similar among UC students with family income under \$35,000 up to family incomes of \$80,000 to \$125,000.

Over 52 percent of students at other AAU institutions reported working, with almost 56 percent working among dependent students from families making under \$80,000, down to 43.6 percent of students from the highest-income families. About 54 percent of UC independent students work for pay, compared to 65 percent of independent students attending other AAU campuses.

This difference between UC and other AAU students in employment applies across all family income categories and among independent students. UC campus respondents from families making under \$80,000 year, as well as independent students, were 10 percent less likely to report having any employment in the 2013–2014 academic year. This gap in employment between UC and other-AAU students closes among students from higher-income families, but UC students are still less likely to work overall. Among working students, the distribution of hours of work is remarkably similar for students from the poorest families up to upper-middle-income families, for both UC students and students attending other AAU institutions (Figure 10).

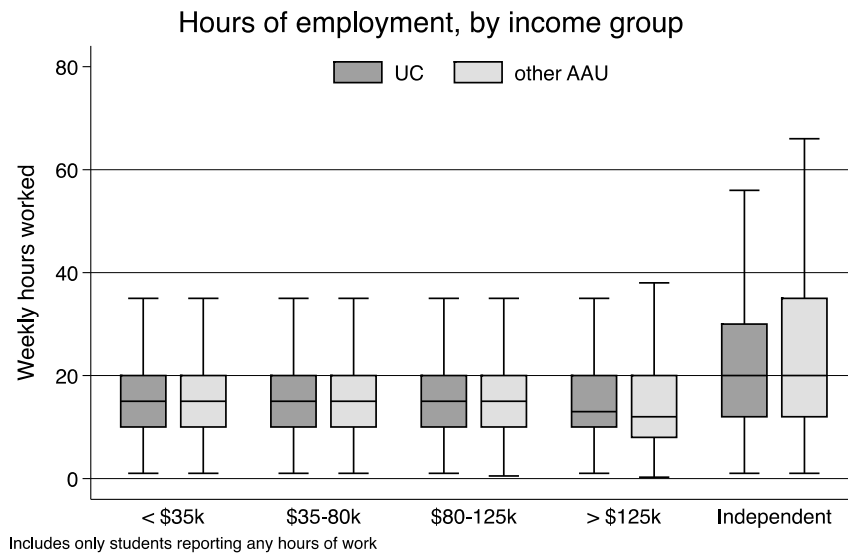
Working students from all families in the lower three income categories (under \$35,000; \$35,000 up to \$80,000; and \$80,000 to \$125,000) have a median of 15 hours/week of work in each income group. Students in each income category reported 10 hours/week at the 25th percent

Figure 9. Shares of students reporting any paid employment, by family income and UC/other AAU institution type.



Source: SERU 2014.

Figure 10. Box plot of weekly hours worked, conditional on working, by family income and UC/other AAU institution type.



Source: SERU 2014.

tile of working students in each income group, and 20 hours/week at the 75th percentile for the same income groups.

Working students from upper-income families have a slightly lower reported median for hours worked, although the distribution of hours worked is still similar to other dependent students. Independent students who work report many more hours of work; the median hours worked per week is 20 for UC and other-AAU students, with the 75th percentile of hours worked at 30 hours/week for UC students and 35 hours/week for students attending non-UC SERU institutions.

Student Behaviors—Cost Saving

Turning to cost-saving behaviors reported by students in the 2014 SERU, we see that UC students across all income groups were more likely to report skipping meals versus other AAU students. Students from lower-income families were more likely to report cutting personal spending or skipping meals. Almost 26 percent of UC students reported skipping meals to meet college expenses, compared to 18 percent of non-UC students in SERU (Figure 11).

Over 30 percent of UC students from the poorest families (under \$35,000 in family income) and independent students reported skipping meals; for non-UC students, this rate ranges from 25–29 percent. Within each income group, UC and non-UC students were equally likely to report cutting personal spending in the previous academic year, with independent UC students more likely to report this compared to non-UC students (Figure 12).

The 2014 SERU includes more detail on cost-saving behaviors taken among UC students only. As one may expect, students from lower-income families are more likely to say “yes” to any of these activities versus students from higher-income families. (See Appendix table A.2) However, there are some actions that are taken slightly more often by students from middle-income families (with incomes between \$35,000 to 80,000 and \$80,000 to \$125,000) versus poorer students, such as:

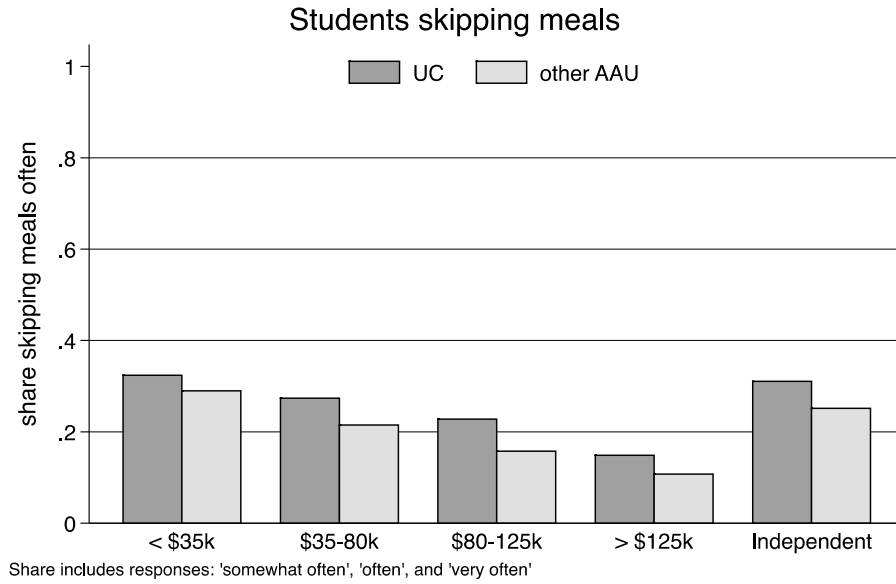
- Asking for a re-evaluation of a financial aid package;
- Saving cash on books, either by buying fewer books or used books, or by using books on reserve at the library;
- Taking more courses per term;
- Taking other actions to graduate quickly;
- Using AP or similar credit to substitute for college courses;
- Taking lower-cost community college courses.

Only 1–5 percent of all income groups of students reported “cost hasn’t been a problem” except for dependent UC students from families making \$125,000 or more in income, where almost 18 percent agreed with this statement.

Compared to a previous SERU Consortium generated analysis of the 2010 SERU Survey data, the mean counts of cost-saving behaviors by income category is very similar (Chatman 2011). Behaviors include applying for financial aid and scholarships for the first time, buying few books, taking a leave of absence for financial reasons, taking more courses per quarter to graduate earlier, opting not to do study abroad, getting a job for the first time, increasing the number of working hours, increasing the student loan amount and similar questions.

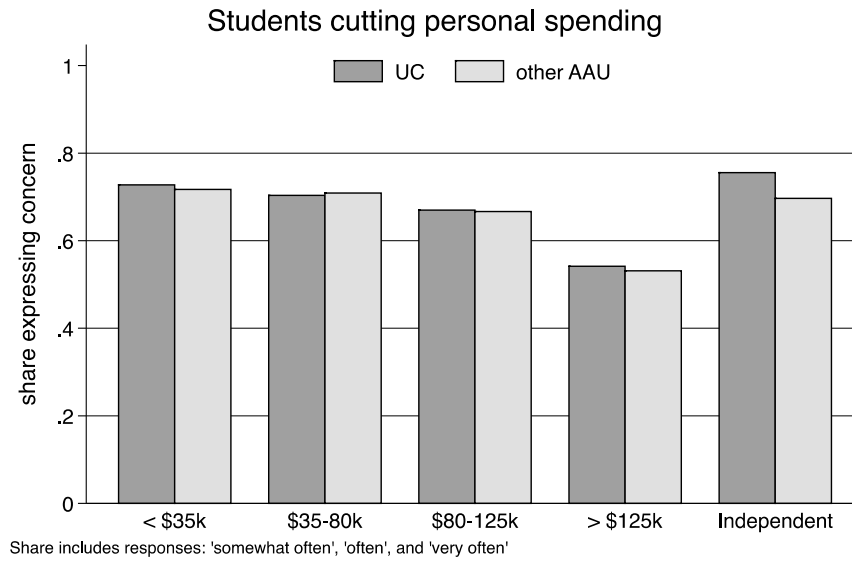
The accompanying Table 1 summarizes the number of cost-saving behaviors taken by students to meet college expenses. There were increases in these behaviors among students from middle- and upper-middle-income families (from \$65,000 to \$199,000); the mean behavior count

Figure 11. Shares of students reporting skipping meals often, by family income and UC/other AAU institution type.



Source: SERU 2014.

Figure 12. Shares of students reporting cutting personal spending, by family income and UC/other AAU institution type.



Source: SERU 2014.

increased by 0.4 to 0.5 for each of these groups from 2010 to 2014. Students from lower-income families and the highest-income families had little change in the number of actions taken to meet college costs.

Academic Performance and Satisfaction

What does the 2014 SERU tell us about academic performance, academic satisfaction, and other campus experiences of students in different income groups? Figure 13 is a box plot of student respondents' campus GPAs, by income group and institutional type (UC/other AAU). Each box indicates the median, 25th, and 75th percentile GPAs of respondents; the whiskers indicate outlying GPAs within 1.5 times the interquartile range (IQR). We see that these students' GPAs are largely similar across income and institutional groups, with a slight increase in the 25th, 50th, and 75th percentiles in higher-income groups.

However, satisfaction with one's GPA appears to be higher among students from higher-income families (Figure 14); more students express their satisfaction with their GPA in the over-\$125,000 family income group compared to the under-\$35,000 income group. Also, students at other AAU institutions in all family income groups are more likely to be satisfied with their GPA compared to UC students with similar incomes.

SERU measures of student satisfaction with the academic and social experience in college are strikingly similar across income categories. The majority of students at all campuses are somewhat-to-strongly satisfied with their overall academic and social experiences in college, with lower-income students slightly less likely to express satisfaction (Figures 15 and 16). Students across institutional types and across income groups are also likely to agree with the statements "I belong at this institution" and "I would still choose to enroll here" (Figures 17 and 18). For all of these statements, UC students in each income group were slightly less likely to express positive satisfaction or agreement with the statement compared to other AAU students.

These findings on student experiences from the 2014 SERU are largely similar to findings in the 2010 study of UC's SERU data; academic and social satisfaction was slightly higher among students from higher-income families, but that the overall shares were similar across income groups (Douglass and Thomson 2012). This brief expands the scope to non-UC AAU institutions participating in SERU, and we see similar responses among these institutions.

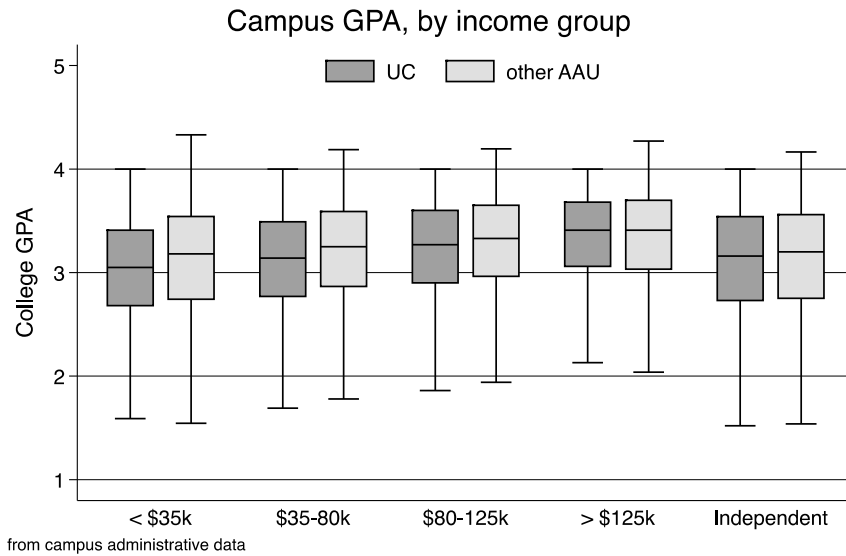
Similarly, the 2014 SERU responses do not show a "middle-class" squeeze in students' academic and social behaviors and satisfaction; responses of satisfaction or agreement do not follow a U-shape by income group. The only question where this applies was for "the total cost of attendance is manageable"; students from families making \$80,000–125,000 in income were the least likely to agree with this statement, compared to students from both lower-income and the highest-income families.

However, no U-shape in the responses is seen regarding student concerns about paying for education and for student debt; concerns are uniformly higher among lower-income students, and these financial concerns lessen as incomes rise.

Race and Ethnicity

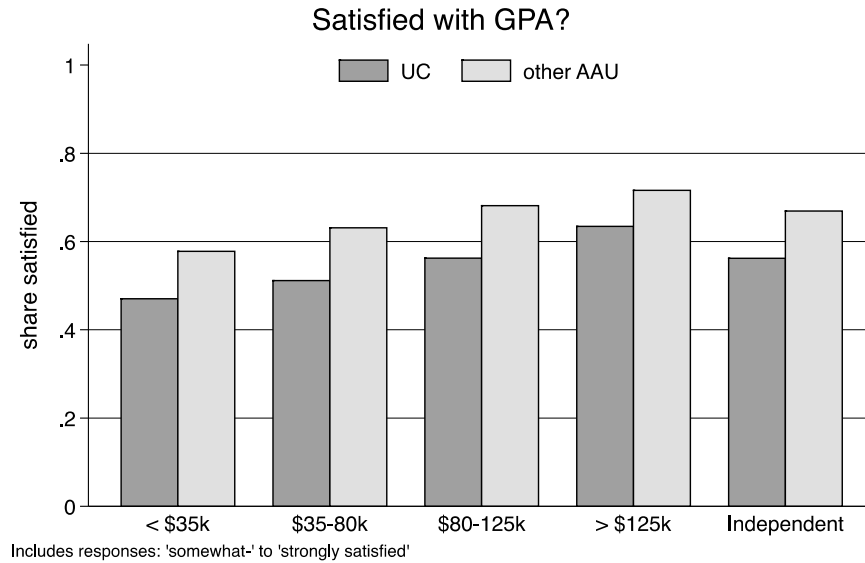
Within UC campuses, students who identify with an underrepresented minority group (URM), such as Latina/os, Hispanics, American Indians, African Americans, Native Hawaiians, and Pa-

Figure 13. Distribution of college GPA, by family income and UC/other AAU institution type.



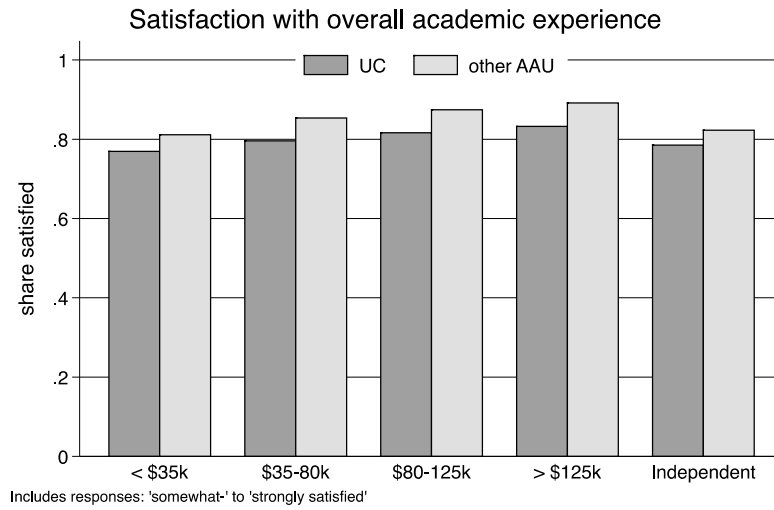
Source: SERU 2014.

Figure 14. Shares of student respondents satisfied with GPA, by family income and UC/other AAU institution type.



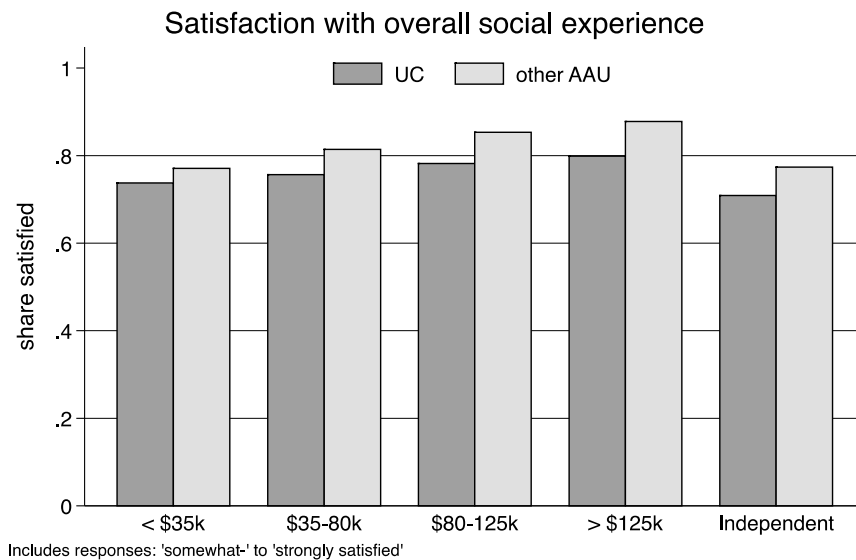
Source: SERU 2014.

Figure 15: Shares of student respondents satisfied with their overall academic experience in college, by family income and UC/other AAU institution type.



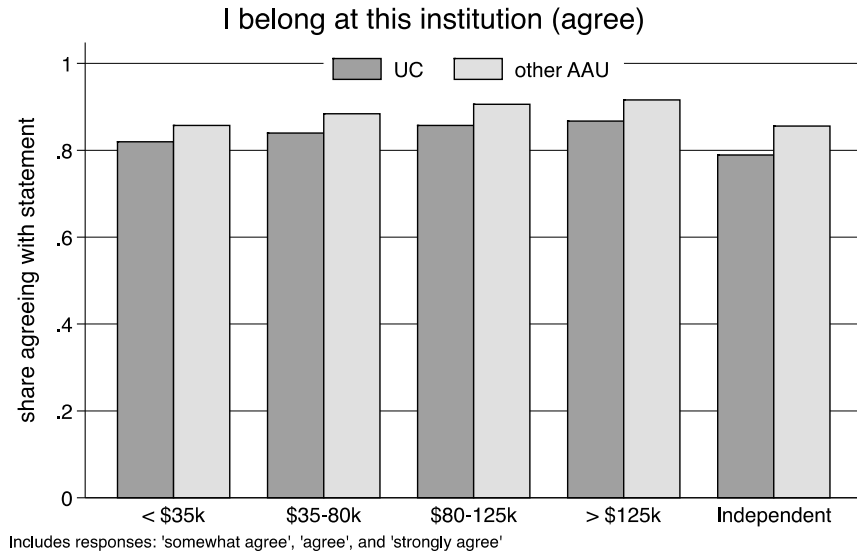
Source: SERU 2014.

Figure 16. Shares of student respondents satisfied with their overall social experience in college, by family income and UC/other AAU institution type.



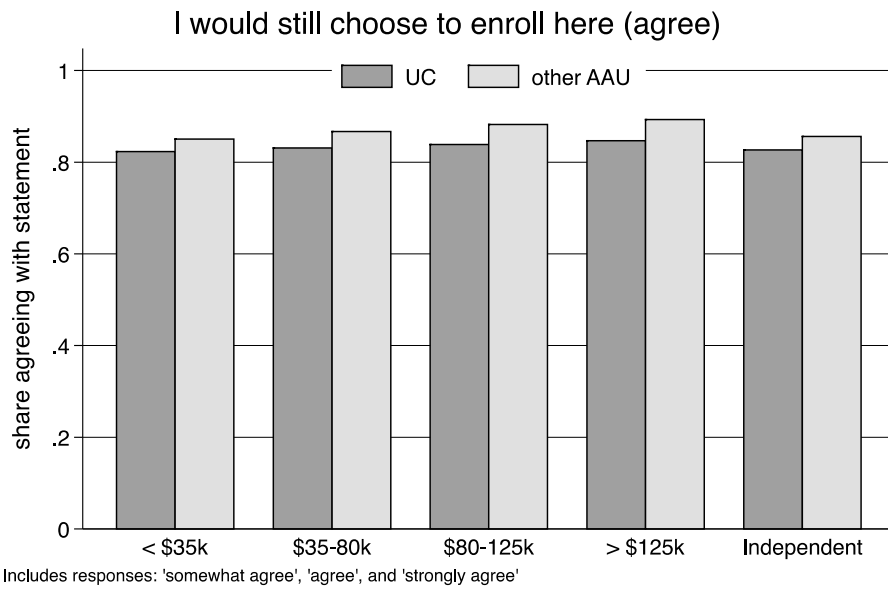
Source: SERU 2014.

Figure 17. Shares of student respondents agreeing with the statement “I belong at this institution,” by family income and UC/other AAU institution type.



Source: SERU 2014.

Figure 18. Shares of student respondents agreeing with the statement “I would still choose to enroll here,” by family income and UC/other AAU institution type.



Source: SERU 2014.

cific Islanders, are more likely to express concern with financing their education when compared to Asian and white students in the same income groups. Concern with paying for their education, as well as student debt, is considerably higher among URM students and slightly higher among Asian students, compared to white students in similar income categories.

When asked if the cost of attendance is manageable, lower-income URM students agree at similar rates to white and Asian students, but URM students from families making over \$80,000 a year are slightly less likely to agree, compared to higher-income Asian and white peers. At the same time, URM students, followed by Asian students, had higher concerns over debt accumulation than white students, again across income groups. Yet a lower percentage of Asian students across all income groups also reported to be less likely to be employed than their URM and white counterparts (see Figures 19 through 22).

This again raises the issue of cultural, racial, and ethnic differences among students regarding the reality and their perceptions of affordability that could, in addition, be further illuminated by looking at variables such as the discipline or major that students are pursuing. It also indicates that income alone is an incomplete measure of the ability to pay for college; asset ownership of real estate and savings, which is considerably higher among white and lower among URM families, are likely very important in understanding the perception of students regarding college costs. This is a topic we plan to further explore with the SERU data.

In our cursory look at broad categories of race and ethnicity by income group, satisfaction and belonging across ethnic categories for students in the UC system, underrepresented minorities (URM) students across income groups express similar levels of satisfaction and belonging as white students with similar family incomes. Levels of satisfaction are slightly lower for students with Asian backgrounds across income groups, particularly with regards to satisfaction with their academic experiences in college (see Figures 23 through 24).

Across ethnic groups, the median and mean behavior counts taken by URM, Asian, and white students are similar, with higher-income URM students reporting slightly more actions taken to reduce expenses compared to white and Asian students

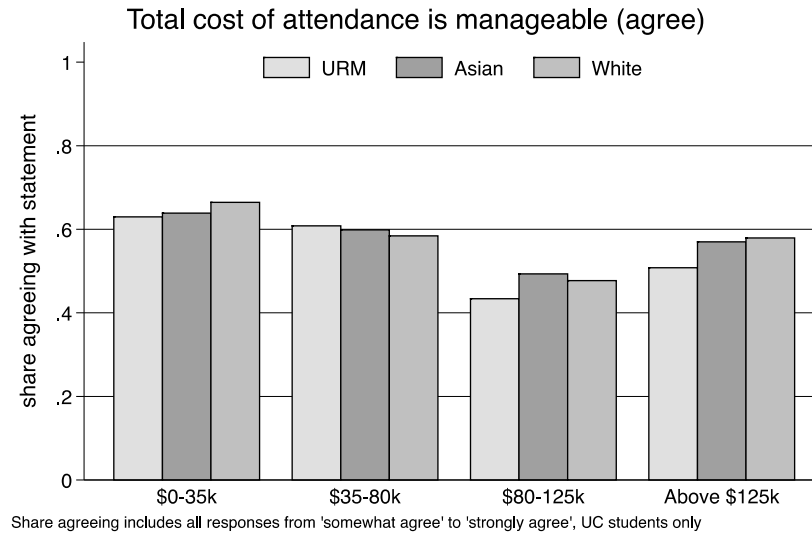
Graduation Rates

Finally, we think it is important to consider access, affordability, and student behaviors, and their correlation with graduation rates. Bowen, Chingos, and McPherson (2009) found that higher net prices at public flagship universities are associated with lower four-year and six-year graduation rates among students from the bottom quartile of family income. Conversely, higher-income students' graduation rates are unaffected by changes in the net price of attendance. This suggests that a shift in aid policy favoring lower-income students may increase graduation rates of these students.

We want to know if this change in financial aid policies across the income distribution ultimately improves the graduation rates of lower-income students. For this analysis, we have not yet explored the data that links family income, affordability, and student behaviors and experiences with graduation rates. But we do know that the overall retention and graduation rates of UC students have improved over the last 15 years. The four-year graduation rate for the 2010 entering UC freshman cohort was 62 percent, and 82 percent in six-years—among the highest of all public research universities.

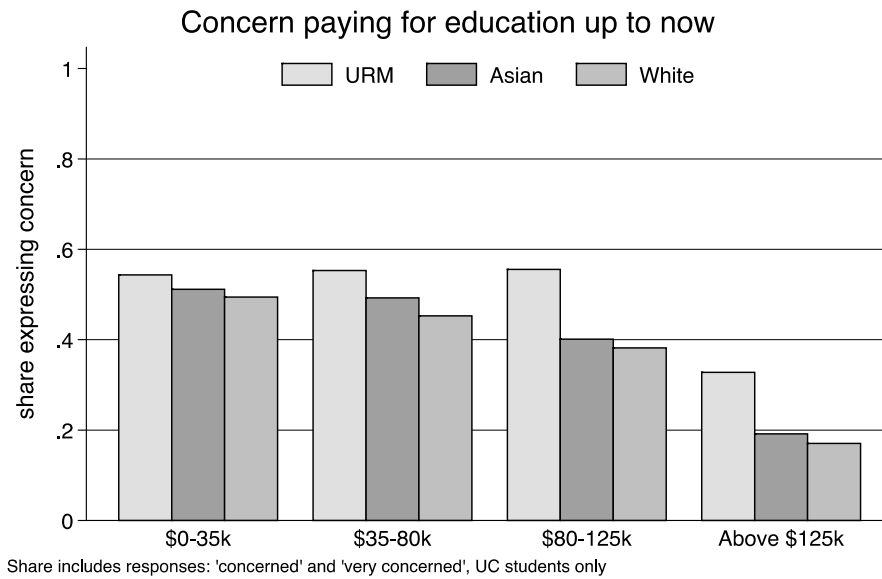
Approximately 18 percent of all undergraduates in the UC system are also community college transfer students entering one of its campuses at the junior year. Some 87 percent of these

Figure 19. Shares of student respondents agreeing with the statement “the total cost of attendance is manageable,” by family income and ethnicity, UC students only.



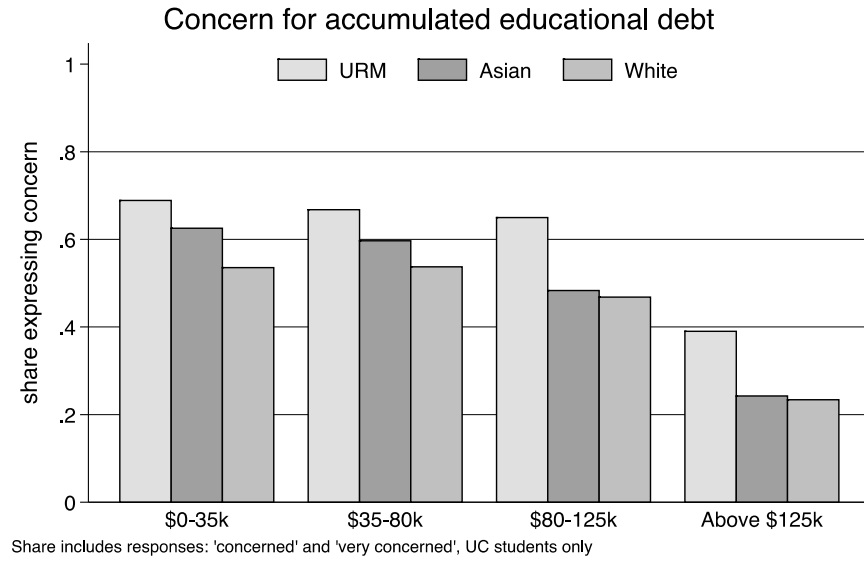
Source: SERU 2014.

Figure 20. Shares of student respondents expressing concern with paying for education up to now, by family income and ethnicity, UC students only.



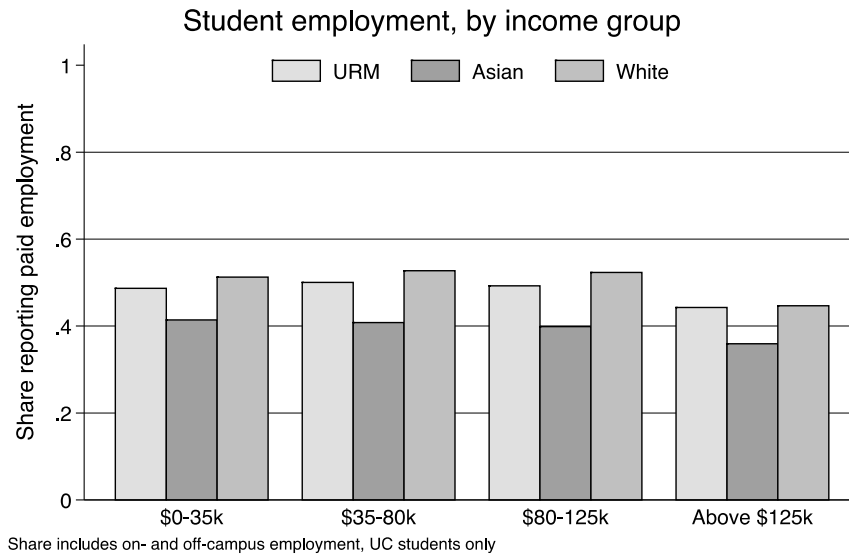
Source: SERU 2014.

Figure 21. Shares of student respondents expressing concern with accumulated educational debt, by family income and ethnicity, UC students only.



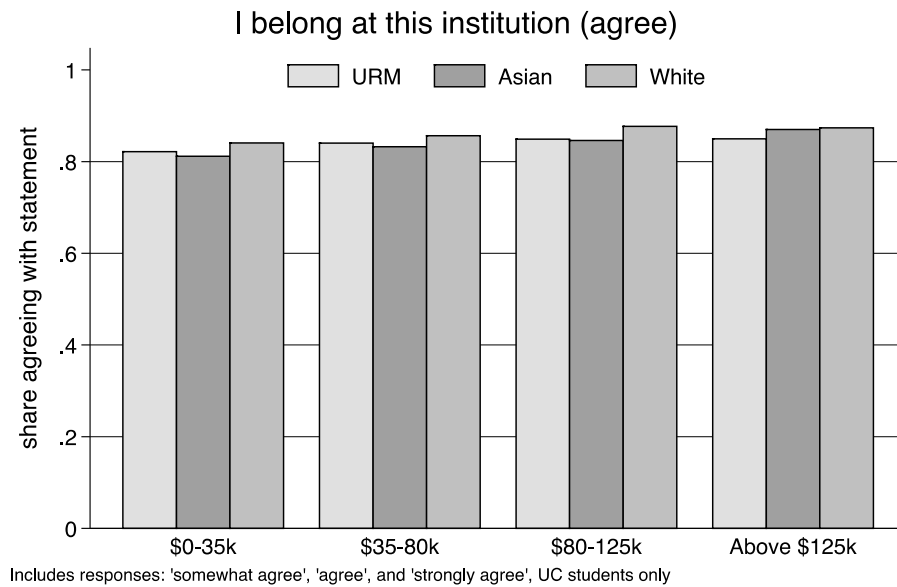
Source: SERU 2014.

Figure 22: Shares of students reporting any paid employment, by family income and ethnicity, UC students only.



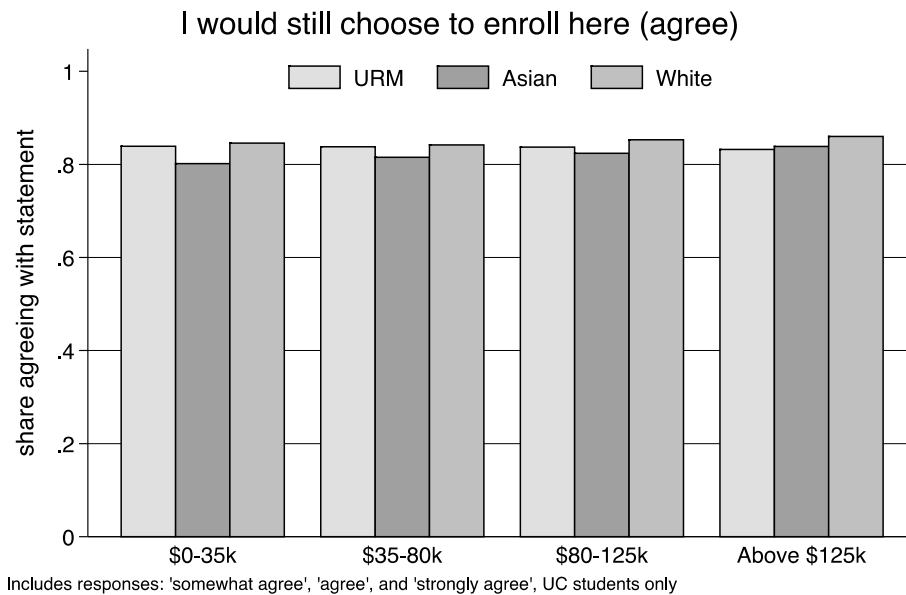
Source: SERU 2014.

Figure 23. Shares of student respondents agreeing with the statement “I belong at this institution,” by family income and ethnicity, UC students only.



Source: SERU 2014.

Figure 24. Shares of student respondents agreeing with the statement “I would still choose to enroll here,” by family income and ethnicity, UC students only.



Source: SERU 2014

transfer students who entered UC in 2010 also earned their bachelor's degree (University of California 2015). According to a recent report (part of a required statement on actual and targeted performance measures for UC adopted in recent budget language by the state legislature), lower income students are only slightly less likely to graduate in four years than students with greater family or personal wealth (Legislative Analyst's Office 2016).

Tuition as a Path for Affordability

With some important qualifications and concerns, the *progressive tuition model* appears to have worked during a period of quickly rising tuition. For most students, it kept college affordable for all or most income groups. Hence, our conclusion is that higher tuition rates at public universities, if accompanied by robust federal, state, and institutional financial aid, appears to be a viable path for maintaining access to lower-income students, and for generating income needed for institutions to maintain or improve student-to-faculty ratios and other measure of quality.

Low or no tuition at public universities also correlates with higher attrition rates and longer time to graduate; at the same time, higher tuition rates tend to push the average student to graduate in "norm" time (four years in the US) to avoid greater costs. Time-to-degree is important because it can mean less or more enrollment capacity for new students to enter selective universities, most of which can no longer grow in total enrollment.

This brings us to the concept that tuition and fees at public universities can be too high, but they can also be possibly too low, particularly if they starve institutions of funding and therefore their ability to meet their purpose in society. At least in our American case study, focused on a selective group of public universities within the SERU Consortium, and with the caveat of a robust financial aid system, demanding lower or no tuition does not appear to be based on any clear analysis of the correlation of tuition and affordability. It appears more as a politically attractive way to appeal to the public and voters, while ignoring the financial consequences for public colleges and universities and the quality of the student experience, and the regressive nature of free tuition. Particularly in societies with substantial disparities between the rich and poor, and without strong social welfare services, free tuition represents a substantial subsidy for more wealthy students who often crowd out lower-income students in the world's leading universities.

Yet we also stress that these results are not necessarily predictive of the future if tuition rates go up further, or if financial aid support declines relative to the cost of tuition and living expenses. The fact is that we still do not know much about the elasticity of tuition pricing and its effects when accompanied by robust financial aid policies, or, the effects of debt aversion and similar behaviors among socioeconomic groups, or within developed versus developing economies. This points to a significant gap in the research in an age where public universities must develop a dramatically revised funding model if they are to provide access that promotes significant levels of socioeconomic mobility.

Furthermore, and as noted previously, it appears that a greater barrier to university access and completion is the rising cost of living in California. There is evidence that a growing number of students face challenges to their food and housing security. Higher education policy experts increasingly view California's intersection of federal and state financial aid programs as adequately addressing tuition costs, but less effective in assisting lower-income students with housing and other costs of college attendance (TICAS 2018).

The University of California and each of its campuses are attempting to formulate new policies and programs to help address food and housing security (UC-GFI 2017). This includes plans

for additional university constructed and managed housing. For campuses in regions with rapidly escalating housing costs, a *progressive tuition model* might also include increasing tuition for upper-income students, with a larger proportion of the university tuition income designated for housing and living costs. However, in some fashion, this may ultimately require a renewed state investment to build affordable housing for students and for lower- and middle-class families in general. UC alone does not have the resources to fully address this vexing problem. California lawmakers should also consider increasing the maximum lower-income students can receive in the Cal Grant program, specifically targeted to help with rising living costs.

Our analysis reinforces the reality that the US is in a relatively new and not yet completed transition from a network of public universities with relatively robust public subsidization and low tuition and housing costs, to the new world of public disinvestment and an increased focus on funding from students and their families. This has been accompanied by expanding forms of institutional funded financial aid, with tuition being the most substantial funding source. How successful research-intensive universities are in making this transition will significantly influence the nation's socioeconomic mobility rates and, more generally, their economic viability.

It is our sense that the ability to pursue the *progressive tuition model* will determine the financial viability and quality of the University of California system in the future. UC is mandated to grow in enrollment and programs with the California population, to support socioeconomic mobility, and help meet the changing labor needs of regional and local economies. At least, that is its historic social contract. Yet this expansive mission was formulated on the foundation of a continuous rate of state investment. Without the prospect of a significant reinvestment by state government, or a dramatic federal investment (an unlikely scenario in today's political climate), increasing tuition needs to be one part of a revised funding model for California public higher education.⁶

⁶ California already ranks among the bottom 10 states in the number of young people receiving a bachelor's degree and there are estimates of a significant shortage of people with a B.A. or higher for California's labor force. At the same time, The number of students gaining a bachelor's degree in the traditional age cohort of 18–24 year olds has fallen behind the US's top economic competitors—an historic shift (Douglass 2007, OECD 2014). For most of its history, America had the highest percentage of young people going to college and gaining their degree, providing a distinct advantage in boosting socioeconomic mobility and economic development. See Douglass (2007) and OECD Education at a Glance; OECD data indicates that the United States has slipped behind many other countries in college completion and “educational mobility,” with fewer young Americans getting more education than their parents. About half of young people in OECD countries have at least matched their parents' level of education. But in the United States, a larger-than-average proportion had less education (so-called downward mobility) while a smaller-than-average population had more education (upward mobility). Twenty percent of US men and 27 percent of US women had more education than their folks, compared with the OECD average of 28 percent and 36 percent, respectively. According to the 2014 OECD report, in 2012 some 39 percent of young Americans were expected to graduate from college, compared with 60 percent in Iceland, 57 percent in New Zealand and 53 percent in Poland while close to matching of other developing economies.

References

- Bettinger, Eric. 2004. "How Financial Aid Affects Persistence." In *College Choices: The Economics of Where to Go, When to Go, and How to Pay For It*, edited by Caroline M. Hoxby, University of Chicago Press, 207–38. <http://www.nber.org/chapters/c10101>.
- Bowen, William G., Matthew M. Chingos, and Michael S. McPherson. 2009. *Crossing the Finish Line: Completing College at America's Public Universities*. Princeton University Press.
- Castleman, Benjamin L., and Bridget Terry Long. 2013. "Looking beyond Enrollment: The Causal Effect of Need-Based Grants on College Access, Persistence, and Graduation." National Bureau of Economic Research Working Paper 19306, <http://www.nber.org/papers/w19306>.
- Chatman, Steve. 2011. "Wealth, Cost, and the Undergraduate Student Experience at Large Public Research Universities." Research and Occasional Paper Series: CSHE 13.11. UC Berkeley: Center for Studies in Higher Education. <http://www.cshe.berkeley.edu/publications/wealth-cost-and-undergraduate-student-experience-large-public-research-universities>.
- Cook, Kevin, Patrick Murphy, and Hans Johnson. 2016. "Higher Education in California: Investing in Public Higher Education." Public Policy Institute of California, April. http://www.ppic.org/content/pubs/report/R_0416KCR.pdf.
- Douglass, John Aubrey. 2007. *The Conditions for Admissions: Access, Equity, and the Social Contract of Public Universities*. Stanford University Press.
- . 2015. Funding Challenges at the University of California: Balancing Quantity with Quality and the Prospect of a Significantly Revised Social Contract. *California Journal of Politics and Policy* 7 (4). <https://escholarship.org/uc/item/5tb9302t>.
- . 2016. *The Conditions for Admission*. Stanford University Press.
- Douglass, John Aubrey, and Gregg Thomson. 2012. "Poor and Rich: Student Economic Stratification and Academic Performance in a Public Research University System: Rich and Poor." *Higher Education Quarterly* 66 (1): 65–89. doi:10.1111/j.1468-2273.2011.00511.x.
- Dynarski, Susan, and Judith Scott-Clayton. 2013. "Financial Aid Policy: Lessons from Research." National Bureau of Economic Research Working Paper 18710. <http://www.nber.org/papers/w18710>.
- Goldrick-Rab, Sara. 2016. *Paying the Price: College Costs, Financial Aid, and the Betrayal of the American Dream*. University of Chicago Press.
- Goldrick-Rab, Sara, Robert Kelchen, Douglas N. Harris, and James Benson. 2016. "Reducing Income Inequality in Educational Attainment: Experimental Evidence on the Impact of Financial Aid on College Completion." *American Journal of Sociology* 121 (6): 1762–1817. doi:10.1086/685442.
- Hauser, Christine. 2016. "'Fees Must Fall': Anatomy of the Student Protests in South Africa." *The New York Times*, September 22. <https://www.nytimes.com/2016/09/23/world/africa/fees-must-fall-anatomy-of-the-student-protests-in-south-africa.html>.
- Hiltonsmith, Robert. 2015. "Pulling Up the Higher-Ed Ladder: Myth and Reality in the Crisis of College Affordability." Demos, New York. <http://www.demos.org/sites/default/files/publications/Robbie%20admin-bloat.pdf>.
- Kane, Thomas J. 2003. "A Quasi-Experimental Estimate of the Impact of Financial Aid on College-Going." National Bureau of Economic Research Working Paper 9703. <http://www.nber.org/papers/w9703>.
- Legislative Analyst's Office, State of California. 2013. "The 2013–14 Budget: Analysis of the

- Higher Education Budget.” Feb. 12. <http://www.lao.ca.gov/analysis/2013/highered/higher-education-021213.aspx>.
- Legislative Analyst’s Office, State of California 2016. “The 2016–17 Budget: Higher Education Analysis.” Feb. <http://www.lao.ca.gov/reports/2016/3372/higher-education-022516.pdf>
- Leslie, Larry L., and Paul T. Brinkman. 1987. “Student Price Response in Higher Education: The Student Demand Studies.” *The Journal of Higher Education* 58 (2): 181–204. doi:10.2307/1981241.
- Looney, Adam, and Constantine Yannelis. 2015. “A Crisis in Student Loans? How Changes in the Characteristics of Borrowers and in the Institutions They Attended Contributed to Rising Loan Default.” Brookings Institute, September 10, 2015.
- Mitchell, Michael, and Michael Leachman. 2015. “Years of Cuts Threaten to Put College Out of Reach for More Students.” Center for Budget and Policy Priorities, May 13. <http://www.cbpp.org/research/state-budget-and-tax/years-of-cuts-threaten-to-put-college-out-of-reach-for-more-students>.
- O’Boyle, Brendan. 2016. “Free College in Chile! So What Are Students So Mad About?” *Americas Quarterly*. January 28. <http://www.americasquarterly.org/content/free-education-frustration-chiles-student-activists>.
- Organization of Economic Cooperation and Development (OECD). 2014. *Education at a Glance Educational: Attainment and Labour-Force Status*. Paris.
- Page, Lindsay C., Benjamin Castleman, and Gumilang Aryo Sahadewo. 2016. “More than Dollars for Scholars: The Impact of the Dell Scholars Program on College Access, Persistence and Degree Attainment.” SSRN Scholarly Paper ID 2726320. <http://dx.doi.org/10.2139/ssrn.2726320>.
- Page, Lindsay C., and Judith Scott-Clayton. 2016. “Improving College Access in the United States: Barriers and Policy Responses.” *Economics of Education Review* 51 (April): 4–22. doi:10.1016/j.econedurev.2016.02.009.
- Parker, Phaelen. 2015. “State Spending Per Student at CSU and UC Remains Near the Lowest Point in More Than 30 Years.” *Data Hit: California Budget & Policy Center*, March. <http://calbudgetcenter.org/resources/state-spending-per-student-at-csu-and-uc-remains-near-the-lowest-point-in-more-than-30-years/>.
- Prengaman, Peter, and Sarah Dilorenzo. 2016. “Brazilian Students Are Occupying Their High Schools to Protest against Budget Cuts.” *The Independent*. November 25. <http://www.independent.co.uk/news/world/americas/brazil-students-occupy-protest-high-schools-budget-cuts-austerity-policies-president-michel-temer-a7438431.html>.
- Quinton, Sophie. 2016. “The High Cost of Higher Education.” *Stateline: The Pew Charitable Trusts*, Jan 25. <http://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2016/01/25/the-high-cost-of-higher-education>.
- Rothstein, Jesse, and Cecilia Elena Rouse. 2011. “Constrained after College: Student Loans and Early-Career Occupational Choices.” *Journal of Public Economics* 95 (1–2): 149–63. doi:10.1016/j.jpubeco.2010.09.015.
- The Institute for College Access and Success (TICAS). 2018. *Unpacking California College Affordability: Experts Weigh in on Strengths, Challenges, and Implications*. Oakland, CA and Washington, DC. <https://ticas.org/content/pub/unpacking-california-college-affordability-experts-weigh-strengths-challenges-and>.
- University of California. 2013. Budget for Current Operations: Summary and Detail. <http://regents.universityofcalifornia.edu/regmeet/nov12/f1attach3.pdf>.

University of California. 2015. *2015 UC Annual Accountability Report*. Oakland, CA: University of California. http://accountability.universityofcalifornia.edu/2015_

University of California Global Food Initiative (UC-GFI). 2017. *Global Food Initiative: Food and Housing Security at the University of California*. Oakland, CA. https://www.ucop.edu/global-food-initiative/_files/food-housing-security.pdf.

Appendices

Appendix A—Student Survey Responses and Behaviors

Table A.1a. 2014 SERU Student Characteristics

			Non-UC AAUs	All UC Campuses	Total
Total			63,802	66,323	130,125
Family Income					
Under \$35,000	%		9.58	19.21	14.49
	<i>N</i>		<i>6112</i>	<i>12743</i>	<i>18855</i>
\$35,000-79,999	%		20.26	19.86	20.05
	<i>N</i>		<i>12925</i>	<i>13169</i>	<i>26094</i>
\$80,000-124,999	%		21.86	15.80	18.77
	<i>N</i>		<i>13946</i>	<i>10480</i>	<i>24426</i>
\$125,000 and over	%		22.65	12.87	17.67
	<i>N</i>		<i>14452</i>	<i>8537</i>	<i>22989</i>
Independent	%		11.32	10.15	10.73
	<i>N</i>		<i>7224</i>	<i>6735</i>	<i>13959</i>
Skipped/Missing	%		14.33	22.10	18.29
	<i>N</i>		<i>9143</i>	<i>14659</i>	<i>23802</i>
Parent Education					
Neither parent w/ BA degree	%		21.96	32.41	27.29
	<i>N</i>		<i>14013</i>	<i>21494</i>	<i>35507</i>
One/both parent(s) w/ BA degree	%		30.03	21.79	25.83
	<i>N</i>		<i>19162</i>	<i>14449</i>	<i>33611</i>
One/both parent(s) w/ graduate degree	%		35.45	25.71	30.49
	<i>N</i>		<i>22619</i>	<i>17053</i>	<i>39672</i>
Don't know / NA / skipped / missing	%		12.55	20.09	16.40
	<i>N</i>		<i>8008</i>	<i>13327</i>	<i>21335</i>
Race/Ethnicity					
American Indian	%		0.36	0.13	0.24
	<i>N</i>		<i>227</i>	<i>86</i>	<i>313</i>
African American	%		3.53	1.91	2.70
	<i>N</i>		<i>2251</i>	<i>1267</i>	<i>3518</i>
Hispanic	%		6.79	21.09	14.08
	<i>N</i>		<i>4332</i>	<i>13989</i>	<i>18321</i>
Asian	%		11.56	33.19	22.58
	<i>N</i>		<i>7375</i>	<i>22012</i>	<i>29387</i>
White	%		60.23	25.56	42.56

		<i>N</i>	38428	16951	55379
	Native Hawaiian / Pacific Isl.	%	0.16	0.36	0.26
		<i>N</i>	101	236	337
	Multiracial	%	2.14	5.13	3.67
		<i>N</i>	1366	3405	4771
	Non-resident	%	6.26	6.23	6.25
		<i>N</i>	3995	4135	8130
	Decline to state / Missing	%	8.97	6.40	7.66
		<i>N</i>	5727	4242	9969
Gender					
	Female	%	60.66	60.37	60.51
		<i>N</i>	38705	40039	78744
	Male	%	39.32	39.51	39.42
		<i>N</i>	25089	26205	51294

Table A.1b. 2014 SERU UC respondent counts, by income and ethnicity

Family income	Ethnic categories (collapsed)			
	URM	Asian	White	Other/ Decline
Under \$35,000	4,344	5,095	1,477	1,827
\$35,000-79,999	3,710	4,600	2,664	2,195
\$80,000-124,999	1,580	3,574	3,423	1,903
\$125,000 and over	758	2,469	3,730	1,580
Independent	1,764	1,490	2,081	1,400
Skipped / Missing	3,422	4,784	3,576	2,877

Note: URM (underrepresented minority) includes American Indian, African American, Hispanic/Latina/o, and Native Hawaiian/Pacific Islander students

Table A.2. Share of UC students reporting following behaviors to meet college costs, by family income

Behaviors to Meet College Expenses (% yes)	Dependent Students (by family income)				Indep. Students	Total
	under \$35,000	\$35,000 to \$80,000	\$80,000 to \$125,000	over \$125,000		
Applied for financial aid for the first time	45.6	41.3	37.6	23.8	34.4	37.1
Applied for continuing financial aid	85.0	79.0	55.3	22.9	78.1	64.4
Applied for outside scholarships/grants	49.6	49.7	45.4	31.8	49.9	44.7
Asked financial aid office to reevaluate application / aid package	15.1	16.1	13.0	5.6	22.8	13.9
Bought fewer/used books, used books on reserve	86.7	86.8	83.2	68.9	80.0	80.7
Took a leave of absence/quarter/semester off	2.4	2.1	1.8	1.4	6.5	2.5
Took more courses per term	33.9	34.6	34.3	27.2	32.3	32.4
Took action to graduate more quickly	22.9	25.3	27.1	21.9	27.6	24.5
Did not retake a class to improve grade	19.3	18.4	16.0	10.9	20.3	16.9
Accepted AP or similar credit instead of taking the course	34.3	37.7	41.8	37.8	17.3	34.6
Decided against study abroad	39.1	39.6	38.5	26.3	40.6	36.4
Took a community college course because it was cheaper	16.5	17.5	17.4	12.6	25.9	17.1
Took a job for the first time at college	27.2	26.3	24.6	19.8	17.4	23.5
Worked before but increased the number of hours worked	20.6	20.2	18.2	11.6	26.9	18.7
Increased the debt I carry on my credit card	16.7	14.4	11.0	6.2	31.5	14.6
Increased my annual student loan amount	30.5	27.2	20.8	9.6	38.4	24.3
Have cut expenses overall / have been more frugal	63.4	63.1	59.5	45.6	64.4	58.4
Cost hasn't been a problem (None of the above)	1.1	1.8	5.0	17.8	2.7	5.1
Heard about Blue and Gold Opportunity Plan	59.7	55.4	40.4	28.9	56.3	48.0

Table A.3. Total behavior counts to meet college expenses, by income and ethnicity; UC students only

	Median behavior count, 2014			Mean behavior count, 2014		
	URM	Asian	White	URM	Asian	White
Under \$35,000	6	6	6	6.4	6.0	6.4
\$35,000-79,999	6	6	6	6.4	5.9	6.2
\$80,000-124,999	6	5	6	6.4	5.3	5.6
\$125,000 and over	5	4	4	5	3.8	3.8
Independent	7	6	6	6.6	5.7	6.3

APPENDIX B—SERU Tabulations of Responses

Table B.1. Figure 5 Tabulations

Given grants/scholarships, total cost of attendance is manageable (Agree, somewhat to strongly):		Dependent Students (by family income)					
		under \$35,000	\$35,000 to \$80,000	\$80,000 to \$125,000	over \$125,000	Independent	Skipped / Missing
UC Campuses	% agreeing (<i>N in cell</i>)	63.66 (12703)	59.59 (13143)	48.01 (10447)	57.14 (8490)	62.45 (6708)	58.03 (3333)
Non-UC AAUs	% agreeing (<i>N in cell</i>)	65.68 (6092)	57.31 (12881)	55.53 (13916)	64.94 (14387)	59.61 (7183)	60.70 (2043)

Table B.2. Figure 6 Tabulations

Concern paying for undergraduate education up to now (concerned / very concerned):		Dependent Students (by family income)					
		under \$35,000	\$35,000 to \$80,000	\$80,000 to \$125,000	over \$125,000	Independent	Skipped / Missing
UC Campuses	% concerned (<i>N in cell</i>)	52.76 (12712)	50.49 (13145)	41.79 (10465)	19.34 (8520)	51.83 (6711)	39.69 (3820)
Non-UC AAUs	% concerned (<i>N in cell</i>)	50.64 (6098)	46.57 (12901)	32.23 (13929)	13.72 (14427)	46.14 (7195)	27.50 (2313)

Table B.3. Figure 7 Tabulations

Concern paying for accumulated educational debt (concerned / very concerned):		Dependent Students (by family income)					
		under \$35,000	\$35,000 to \$80,000	\$80,000 to \$125,000	over \$125,000	Independent	Skipped / Missing
UC Campuses	% concerned (<i>N in cell</i>)	62.68 (12614)	59.29 (13034)	49.23 (10376)	24.79 (8439)	58.78 (6637)	43.75 (3781)
Non-UC AAUs	% concerned (<i>N in cell</i>)	50.64 (6108)	46.57 (12910)	32.23 (13932)	13.72 (14439)	46.14 (7204)	27.50 (2318)

Table B.4. Figure 9 Tabulations

Had paid employment during academic year:		Dependent Students (by family income)					
		under \$35,000	\$35,000 to \$80,000	\$80,000 to \$125,000	over \$125,000	Independent	Skipped / Missing
UC Campuses	% yes (<i>N in cell</i>)	45.21 (12585)	46.34 (13025)	46.03 (10402)	40.40 (8458)	54.18 (6628)	44.36 (10914)
Non-UC AAUs	% yes (<i>N in cell</i>)	55.75 (6073)	56.40 (12884)	51.26 (13920)	43.65 (14406)	64.79 (7169)	48.97 (7730)

Table B.5. Figure 11 Tabulations

How frequently you skipped meals to save money (somewhat to very often):		Dependent Students (by family income)					
		under \$35,000	\$35,000 to \$80,000	\$80,000 to \$125,000	over \$125,000	Independent	Skipped /Missing
UC Campuses	%	32.39	27.36	22.78	14.85	31.05	21.53
	(<i>N in cell</i>)	(12691)	(13127)	(10448)	(8509)	(6698)	(3390)
Non-UC AAUs	%	28.96	21.50	15.75	10.74	25.13	14.20
	(<i>N in cell</i>)	(6091)	(12885)	(13916)	(14411)	(7174)	(2078)

Table B.6. Figure 12 Tabulations

How frequently you cut down on personal / recreational spending (somewhat to very often):		Dependent Students (by family income)					
		under \$35,000	\$35,000 to \$80,000	\$80,000 to \$125,000	over \$125,000	Independent	Skipped /Missing
UC Campuses	%	72.75	70.33	66.99	54.17	75.54	59.61
	(<i>N in cell</i>)	(12695)	(13119)	(10451)	(8495)	(6692)	(3387)
Non-UC AAUs	%	71.69	70.90	66.65	53.14	69.67	54.45
	(<i>N in cell</i>)	(6087)	(12890)	(13919)	(14412)	(7177)	(2079)

Table B.7. Figure 14 Tabulations

Satisfaction with GPA (Somewhat to strongly satisfied):		Dependent Students (by family income)					
		under \$35,000	\$35,000 to \$80,000	\$80,000 to \$125,000	over \$125,000	Independent	Skipped /Missing
UC Campuses	% satisfied	47.01	51.14	56.22	63.43	56.19	53.18
	(<i>N in cell</i>)	(12724)	(13155)	(10464)	(8530)	(6713)	(6485)
Non-UC AAUs	% satisfied	57.76	63.11	68.14	71.59	66.91	65.73
	(<i>N in cell</i>)	(6099)	(12910)	(13934)	(14436)	(7199)	(4327)

Table B.7. Figure 15 Tabulations

Satisfaction with overall academic experience (Somewhat to strongly satisfied):		Dependent Students (by family income)					
		under \$35,000	\$35,000 to \$80,000	\$80,000 to \$125,000	over \$125,000	Independent	Skipped /Missing
UC Campuses	% satisfied	76.94	79.60	81.63	83.26	78.52	78.75
	(<i>N in cell</i>)	(12647)	(13093)	(10425)	(8502)	(6686)	(6439)
Non-UC AAUs	% satisfied	81.14	85.34	87.44	89.16	82.26	83.71
	(<i>N in cell</i>)	(6086)	(12874)	(13913)	(14406)	(7183)	(4310)

Table B.8. Figure 16 Tabulations

Satisfaction with overall social experience (Somewhat to strongly satisfied):		Dependent Students (by family income)					
		under \$35,000	\$35,000 to \$80,000	\$80,000 to \$125,000	over \$125,000	Independent	Skipped /Missing
UC Campuses	% satisfied (<i>N in cell</i>)	73.75 (12678)	75.67 (13118)	78.19 (10439)	79.88 (8511)	70.88 (6694)	75.26 (6459)
Non-UC AAUs	% satisfied (<i>N in cell</i>)	77.09 (6081)	81.40 (12879)	85.32 (13912)	87.81 (14401)	77.38 (7183)	82.05 (4318)

Table B.9. Figure 17 Tabulations

I belong at this institution (Agree, somewhat to strongly):		Dependent Students (by family income)					
		under \$35,000	\$35,000 to \$80,000	\$80,000 to \$125,000	over \$125,000	Independent	Skipped /Missing
UC Campuses	% agreeing (<i>N in cell</i>)	81.94 (12719)	83.95 (13135)	85.70 (10456)	86.72 (8533)	78.90 (6707)	83.15 (6458)
Non-UC AAUs	% agreeing (<i>N in cell</i>)	85.70 (6098)	88.39 (12906)	90.58 (13933)	91.61 (14441)	85.58 (7204)	87.81 (4331)

Table B.10. Figure 18 Tabulations

I would still choose to enroll here (Agree, somewhat to strongly):		Dependent Students (by family income)					
		under \$35,000	\$35,000 to \$80,000	\$80,000 to \$125,000	over \$125,000	Independent	Skipped /Missing
UC Campuses	% agreeing (<i>N in cell</i>)	82.31 (12700)	83.08 (13130)	83.84 (10464)	84.69 (8524)	82.67 (6715)	81.54 (6456)
Non-UC AAUs	% agreeing (<i>N in cell</i>)	85.04 (6096)	86.69 (12897)	88.23 (13933)	89.29 (14438)	85.62 (7205)	85.62 (4324)