

# APPENDIX

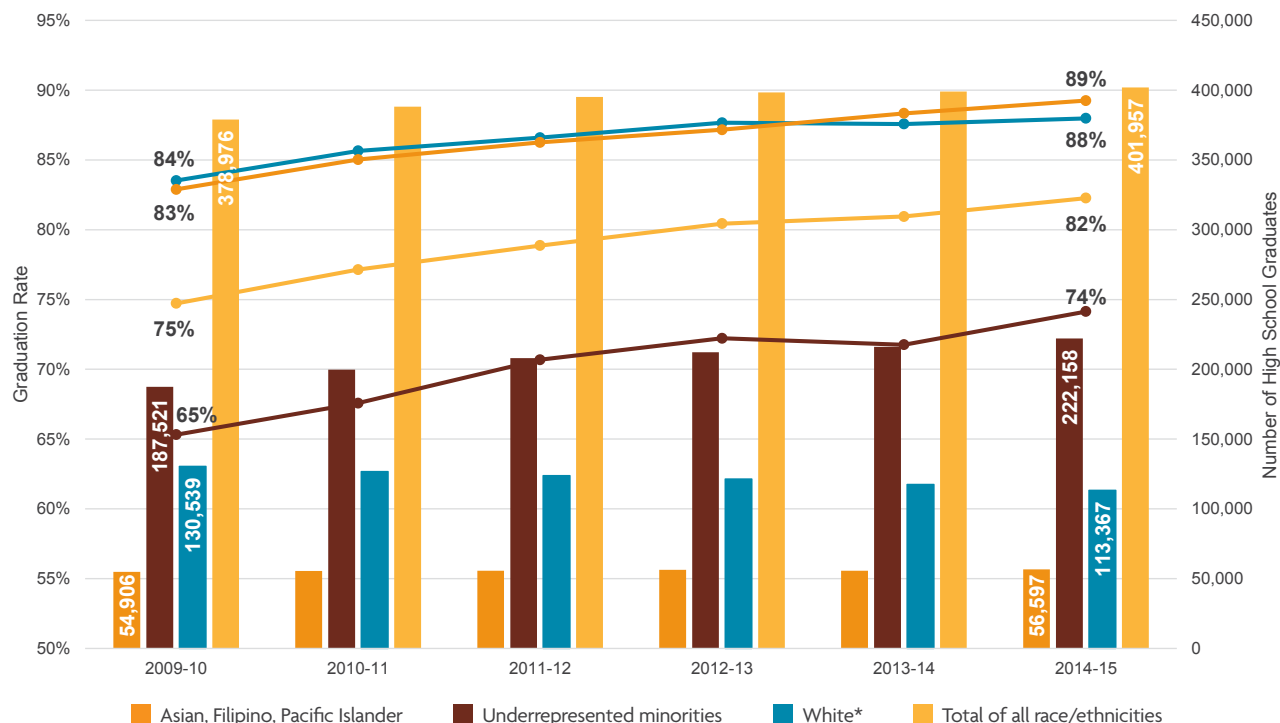
## SUPPLEMENTAL ANALYSES, SOURCE DATA

### High school graduation and A-G course completion

Source data for information on K-12 enrollments, high school graduations and A-G course completions comes from the California Department of Education, KidsData ([bit.ly/chhealth](http://bit.ly/chhealth)), the California Longitudinal Pupil Achievement Data System (CALPADS, [bit.ly/CALPADS](http://bit.ly/CALPADS)), and the California Basic Educational Data System (CBEDS, [bit.ly/CBEDS](http://bit.ly/CBEDS)). Cohort graduation rates are only available from 2010 to 2015.

**Figure 1** shows both the number of high school graduates (the vertical columns) and the graduation rates (the rising lines), for all races and for select subgroups, from 2010 to 2015. For all races, the cohort high school graduation rate increased from 75% to 82% during this time period. The graduation rate for students from underrepresented minorities (URM, ethnic groups underrepresented in higher education, e.g., African-American, Hispanic and Native American students) started at a lower level (65%), but saw similar improvement, rising to 74%. Additional data on enrollment trends by race and ethnicity may be found in the companion background paper by Patrick Kelly, Dennis Jones, and Darcie Harvey ([bit.ly/impequity](http://bit.ly/impequity)).

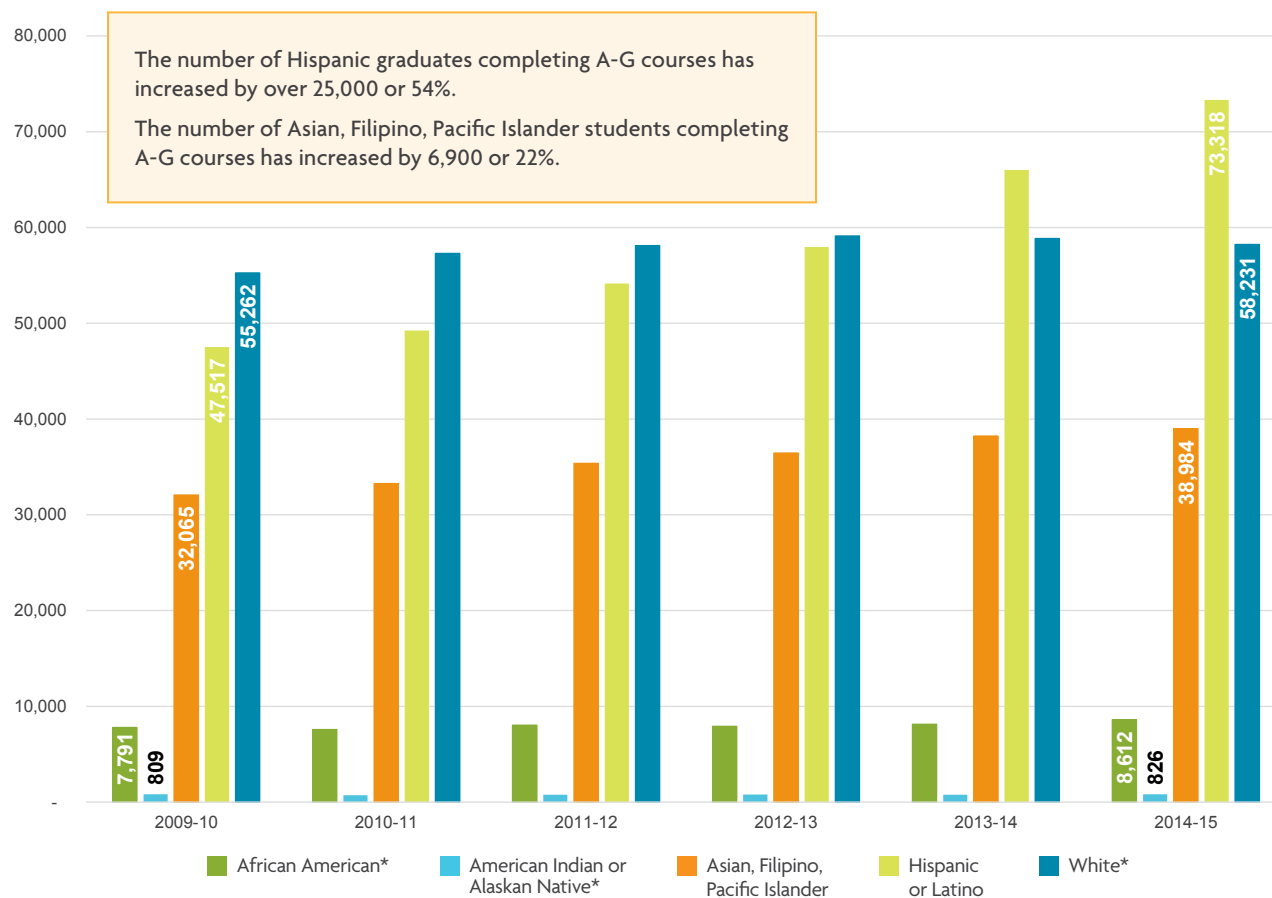
**FIGURE 1:**  
Graduation Rates are Improving Across Racial Categories  
Cohort High School Graduation Rates by Select Racial Subgroups, 2010-2015



\*Category labels have been simplified for greater consistency across all figures.

**Figure 2** shows recent trends in the number of high school graduates who have completed the college preparatory curriculum (commonly known as the A-G course sequence) by ethnicity. Completion of the A-G sequence is not synonymous with being either CSU or UC eligible; eligibility criteria also include grades in these courses as well as test scores. For more detailed requirements about the A-G course sequence and eligibility criteria for UC and CSU, see University of California Admissions ([bit.ly/UCAGreqs](http://bit.ly/UCAGreqs)) and CSU Mentor High School Subject Requirements ([bit.ly/CSUreqs](http://bit.ly/CSUreqs)).

**FIGURE 2:**  
Number of Graduates Who Have Completed A-G Courses, 2010-2015



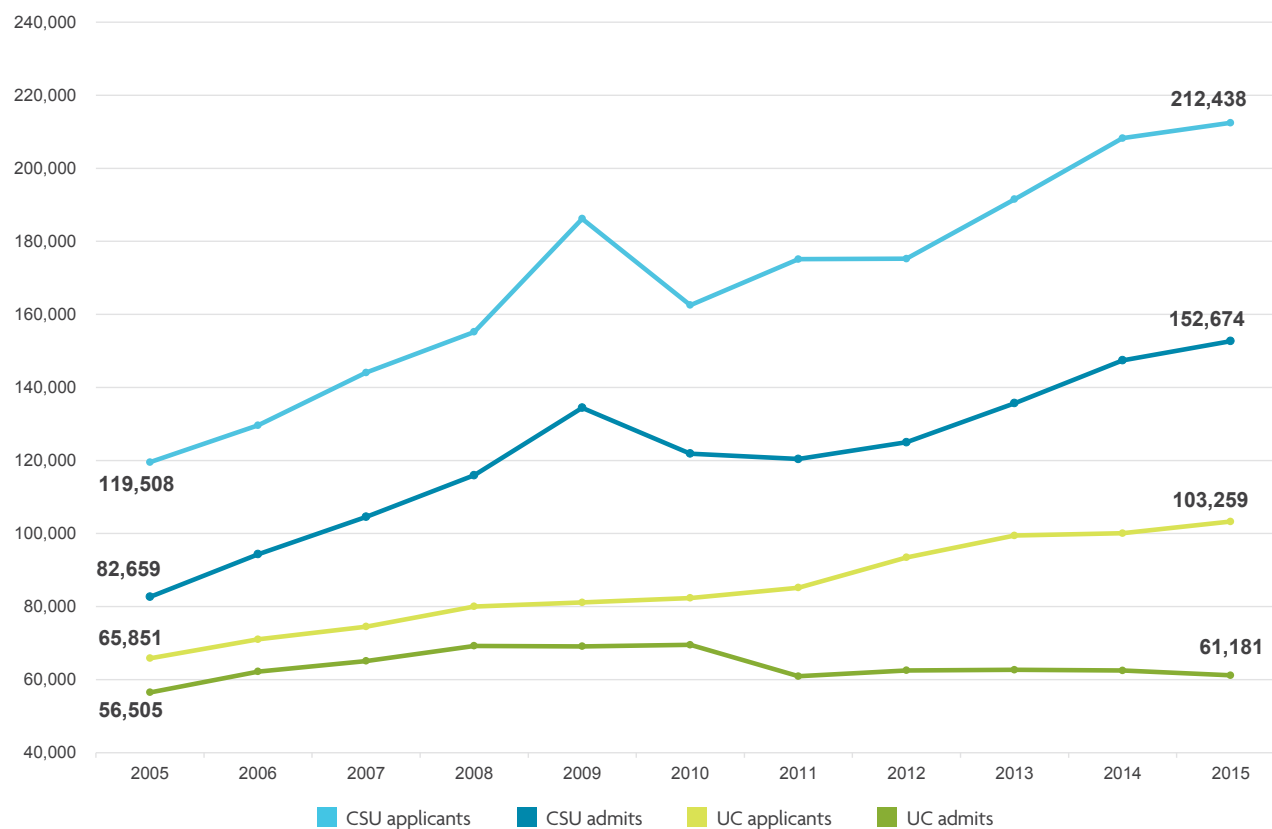
\*Category labels have been simplified for greater consistency across all figures.

### Applicants and admissions for first-time freshmen at CSU and UC

Source data for trends in applications and admissions comes from CSU: Analytic Studies, Statistical Reports, CSU Applications and Admissions by College Year, Disposition of Unduplicated Applications for Admission by Ethnic Group – First-time Freshmen Systemwide, 2005-2015 ([bit.ly/CSUapps](http://bit.ly/CSUapps)), UC Infocenter, Freshman Fall Admissions Summary ([bit.ly/UCadmits](http://bit.ly/UCadmits)). There are number of differences in definitions between the systems that mean that entirely comparable information is not available.

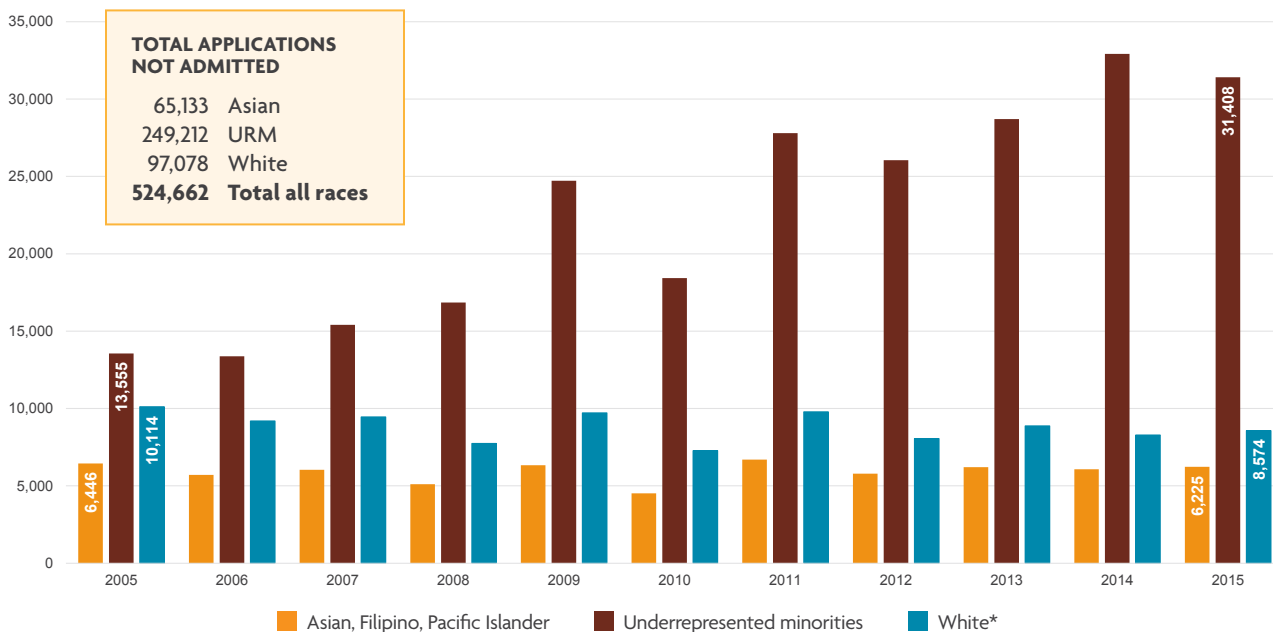
- CSU definition/aggregation on resident/nonresident for enrollments but not separated for application or admissions prior to 2012. UC reports applicants, admissions, and enrollees separately for residents and for nonresidents.
- For both UC and CSU, admission rates are based on unduplicated applicants, i.e., a student who applies to multiple campuses is counted only as a single applicant.
- CSU reports on a number of categories for admission/application status, including Applications Received, Applications Accommodated, Incomplete Applications, Denied Applicants, Denied Eligible Applicants, Denied Ineligible Applicants, Admitted Applicants, and Enrolled Applicants. CSU reports on the number of eligible applicants who are denied admission, UC does not. CSU excludes incomplete applications from the pool of eligible applicants. UC only reports on three categories, applicants, admissions, and enrollees. There may be inconsistencies between the systems in calculations of applications/admissions as a result.
- CSU freshmen applicants to CSU increased from about 120,000 in 2005 to about 212,000 in 2015, an increase of over 75% (see Figure 3), which is much higher than the rate of increase in high school graduates (20%) during this period (see Report Table 1). Over the decade, the bulk of CSU's admission increases occurred from 2005 to 2009. The university cut back on freshmen admissions after the recession and did not return to 2009 admission levels until 2013.

**FIGURE 3:**  
The Number of Applicants and Admitted Students is Increasing  
CSU and UC Number of Applicants and Admits, 2005-2015



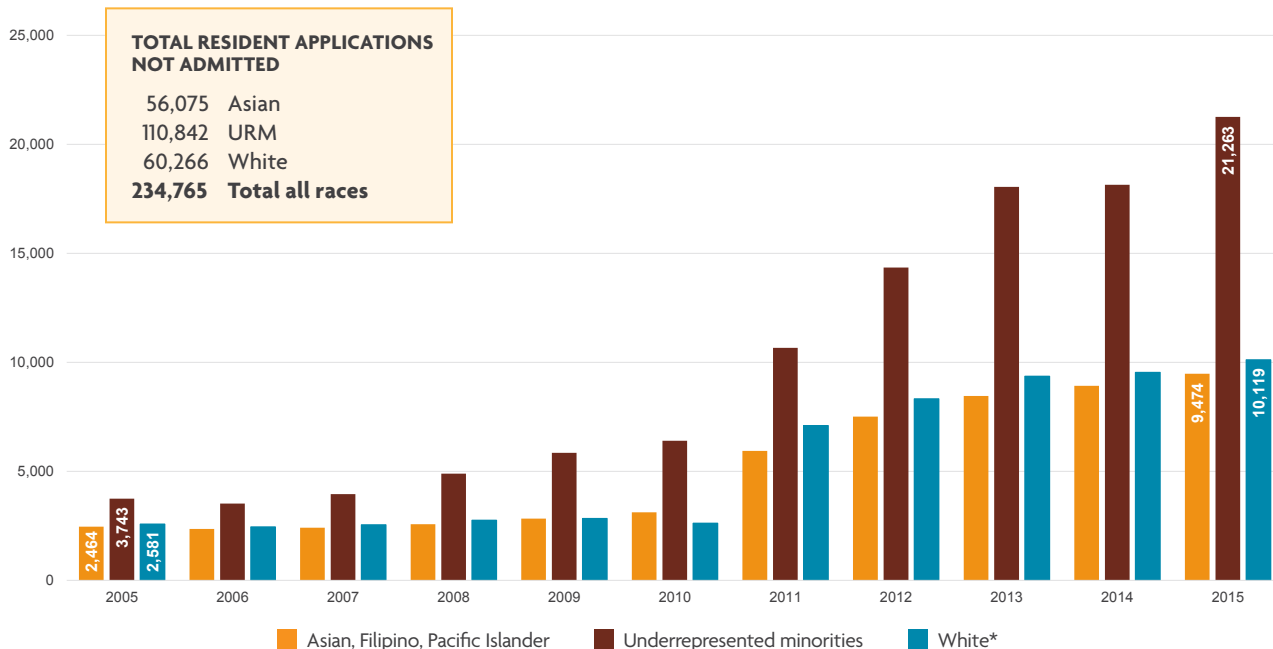
Over 520,000 freshman applicants were denied admission at CSU during the decade; UC turned away more than 230,000 resident applicants (see Figures 5 and 6). At CSU, about 28% of all freshman applicants were not admitted annually, on average, from 2005 to 2015, whereas about 24% of freshman applications to UC were denied each year.

**FIGURE 5:**  
CSU: Number of Freshman Applicants not Admitted, 2005-2015



\*Category labels have been simplified for greater consistency across all figures.

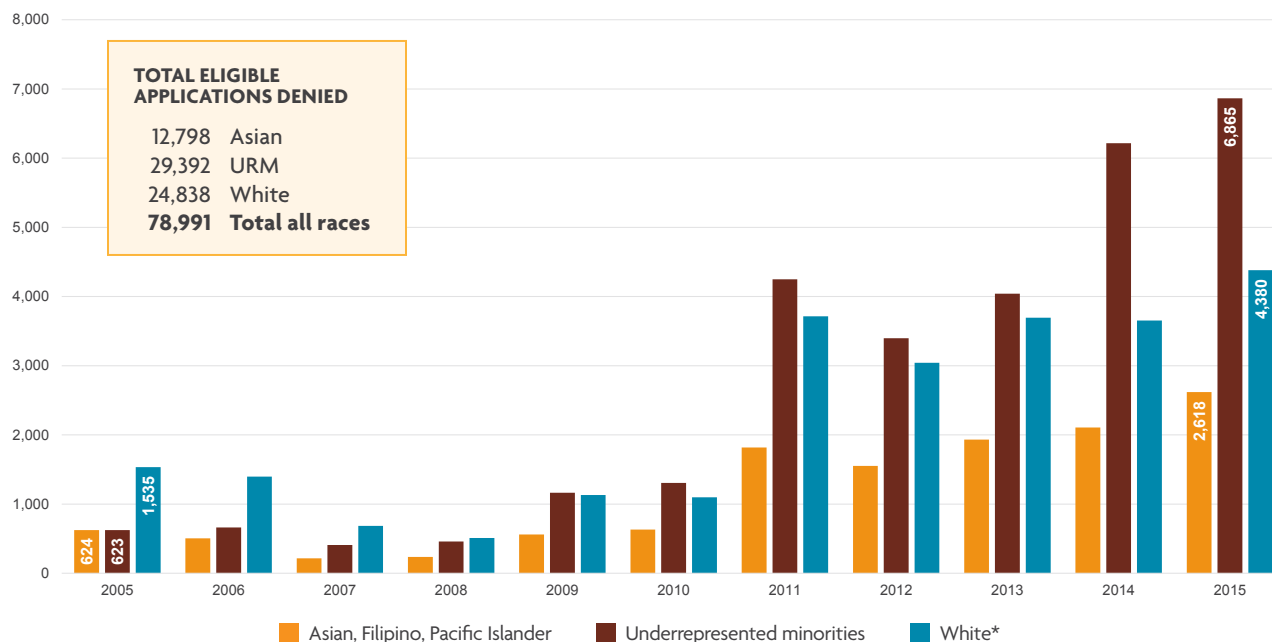
**FIGURE 6:**  
UC: Number of Resident Freshman Applicants not Admitted, 2005-2015



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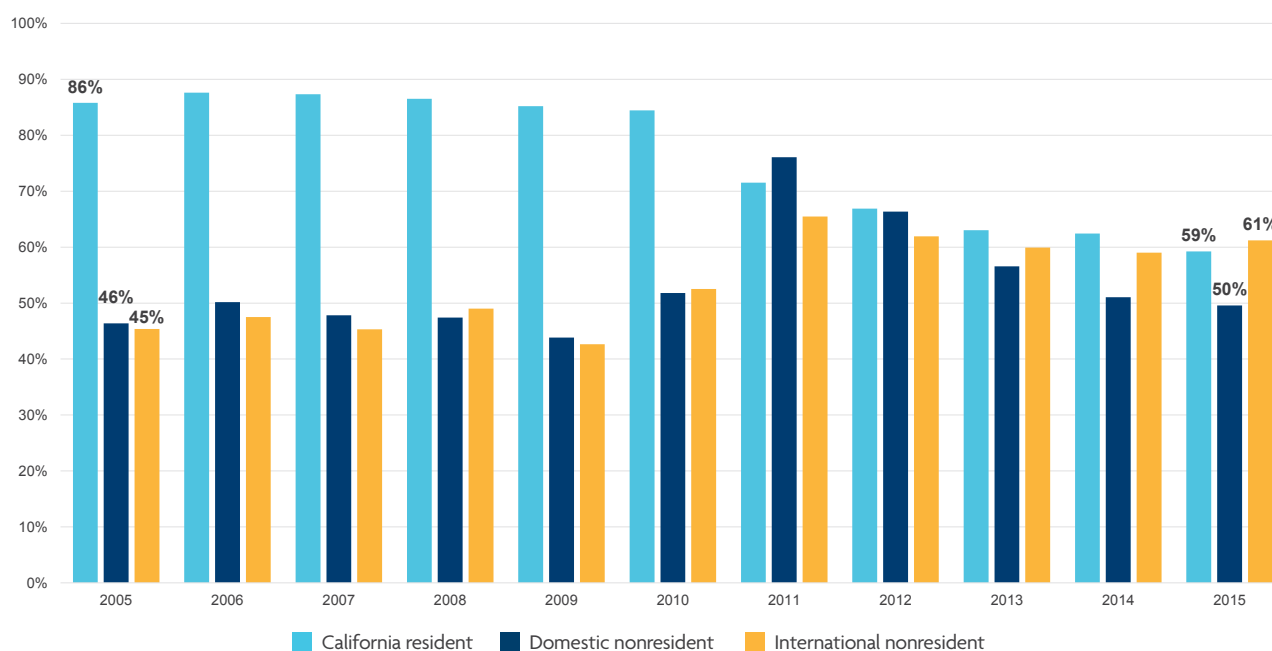
UC does not report how many academically eligible students it turned away due to the university's lack of funding, but CSU estimates that about 79,000 were turned away from 2005 to 2015 despite their meeting admissions requirements, due to the university's lack of adequate funding to enroll them (see Figure 7). UC reports indicate that from 2005 to 2015 the admission rate for California residents declined from 86% to 59% while the admission rate for both international students and domestic nonresidents increased (Figure 8).

**FIGURE 7:**  
CSU: Denied Eligible Freshman Applicants, 2005-2015



\*Category labels has been simplified for greater consistency across all figures.

**FIGURE 8:**  
University of California Admissions Rate for Resident and Nonresident Students, 2005-2015



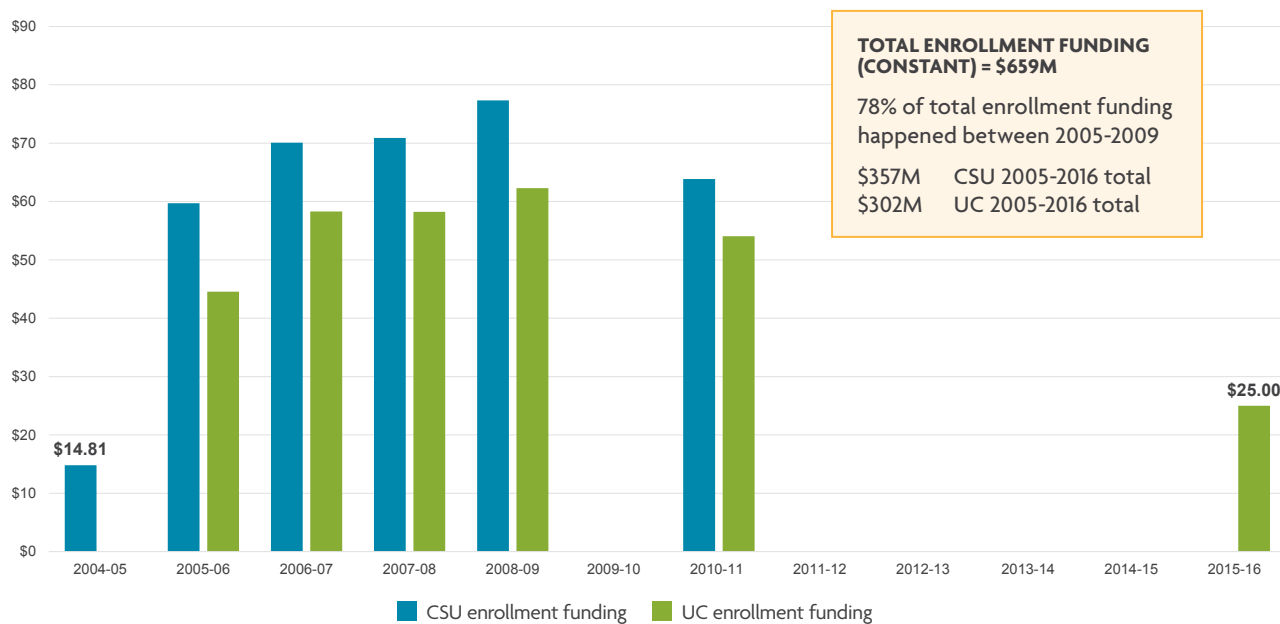
## Applicants and admission for transfer students to CSU and UC

Source data for trends in applications and admissions of transfer students comes from CSU: Analytic Studies, Statistical Reports, CSU Applications and Admissions by College Year, Disposition of Unduplicated Applications for Admission by Ethnic Group – California Community College Transfers Systemwide for calendar years 2005-2015 ([bit.ly/CSUnew](http://bit.ly/CSUnew)), UC Infocenter, Undergraduate Admissions summary, Transfer Applicants, Admits, and Enrollees, Full Year, from California Community Colleges 2005-2015 ([bit.ly/UCethnicity](http://bit.ly/UCethnicity)).

## Changes in state funding for base budgets at CSU and UC

**State funding of new enrollments.** Increases in state general funds for new enrollments have been uneven; for both systems over the 10-year period a total of \$659 million in new general fund revenues were provided, \$302 million for UC and \$357 million for CSU (see Figure 9). No funds were provided for enrollment increases in five of the 10 years. In 2015-16, new enrollment funding for UC was earmarked for that purpose but not provided until UC certified that it had met its enrollment targets. In the 2016-17 budget, new enrollment funding is again provided for CSU and UC, but the UC augmentation is being withheld until the system shows its targets have been met, while CSU has no demonstration requirement that it meet its enrollment target to receive funding. Source data for information about budget changes comes from: Department of Finance, Governor’s enacted budget ([bit.ly/Calbudget](http://bit.ly/Calbudget)); Legislative Analyst at ([bit.ly/laobudgan](http://bit.ly/laobudgan)), A Review of State Budgetary Practices for UC and CSU, 2014 ([bit.ly/laohighed](http://bit.ly/laohighed)); California State Assembly, Final Budget Actions 2015 Floor Report ([bit.ly/2015floor](http://bit.ly/2015floor)); California State Assembly, Final Budget Actions 2016-17 Floor Report ([bit.ly/2016floor](http://bit.ly/2016floor)).

**FIGURE 9:**  
“New” Money for Enrollment Increases has been Inconsistent  
Enrollment Funding at the CSU and UC, 2005-2016 (Constant 2015 Millions)



**Core funding increases for salaries and benefits in comparison with spending on enrollments.** To make comparisons between funding for enrollments contrasted to funding for salaries and benefits, we had to estimate spending increases for employees paid from core funds (general funds and tuition revenues primarily) versus employees paid from other funds (research, hospitals, auxiliaries). Because funding for salaries and benefits is not reported consistently across the two systems, we calculated the figures in **Report Table 3** based on spending for salaries and fringe benefits as they are reported to the federal government through IPEDS. We also do not have consistent information on the number of personnel, so some of the increases in spending could be attributed to increased hiring, versus pay or benefit increases to existing personnel.

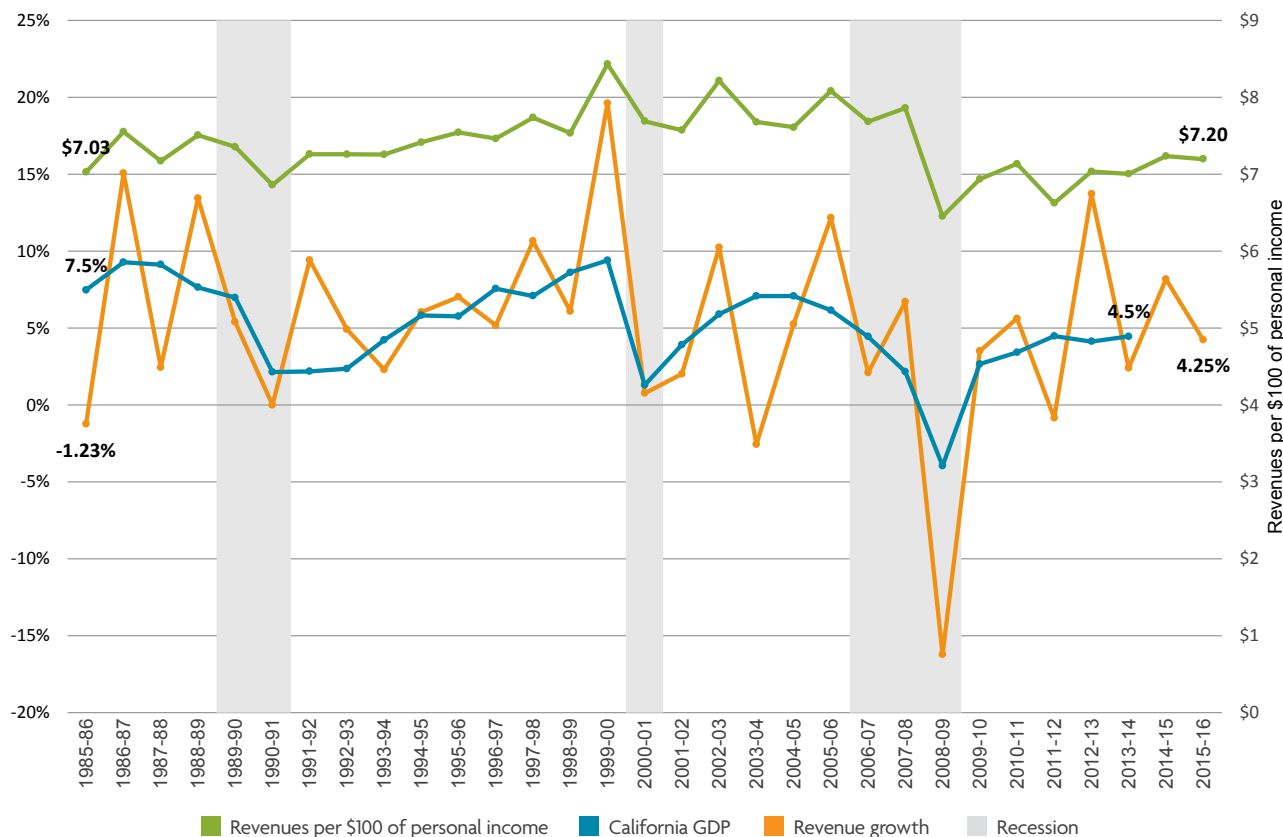
The figures show spending on salaries declining by around \$76 million over the 10-year period at CSU, against spending increases in benefits of \$244 million and enrollment funding increases of \$365 million. At UC, salaries increased an average of 3% per year, at an annual cost of \$116 million, and benefits by 18% per year, at an annual cost of \$116 million. So for UC, we estimate a total of about \$1.2 billion for increased salaries, about \$1.2 billion in increased spending on benefits, and \$284 million in increased funding for new enrollments.

Source data and methodology for **Report Table 3** are as follows: New enrollment data from LAO budget analysis ([bit.ly/laobudgan](http://bit.ly/laobudgan)), salaries and benefits from Delta Cost Project and U.S. National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Expenditure Files ([bit.ly/deltacost](http://bit.ly/deltacost) and [bit.ly/ipedsdata](http://bit.ly/ipedsdata)). Salaries and benefits are calculated using the Delta Cost Project “education and related” calculation method, which is a sum of core operating expenditures spent on salaries and benefits (including instruction and student services and the instructional share of academic support, operations and maintenance, and institutional support). Delta Cost Project revenue and spending data for California by functional classification provided by internal communication with Delta Cost Project, marginal cost calculations per internal communication with CSU and UC.

## Revenue volatility and tuition increases

General fund volatility is increasing (see Figure 10) because of changes in the economy and the labor force, and the growing number of high wage earners.

**FIGURE 10:**  
**Growing Volatility From a Changed Economy and Wage Structure**  
General Fund Trends, 1985-2016

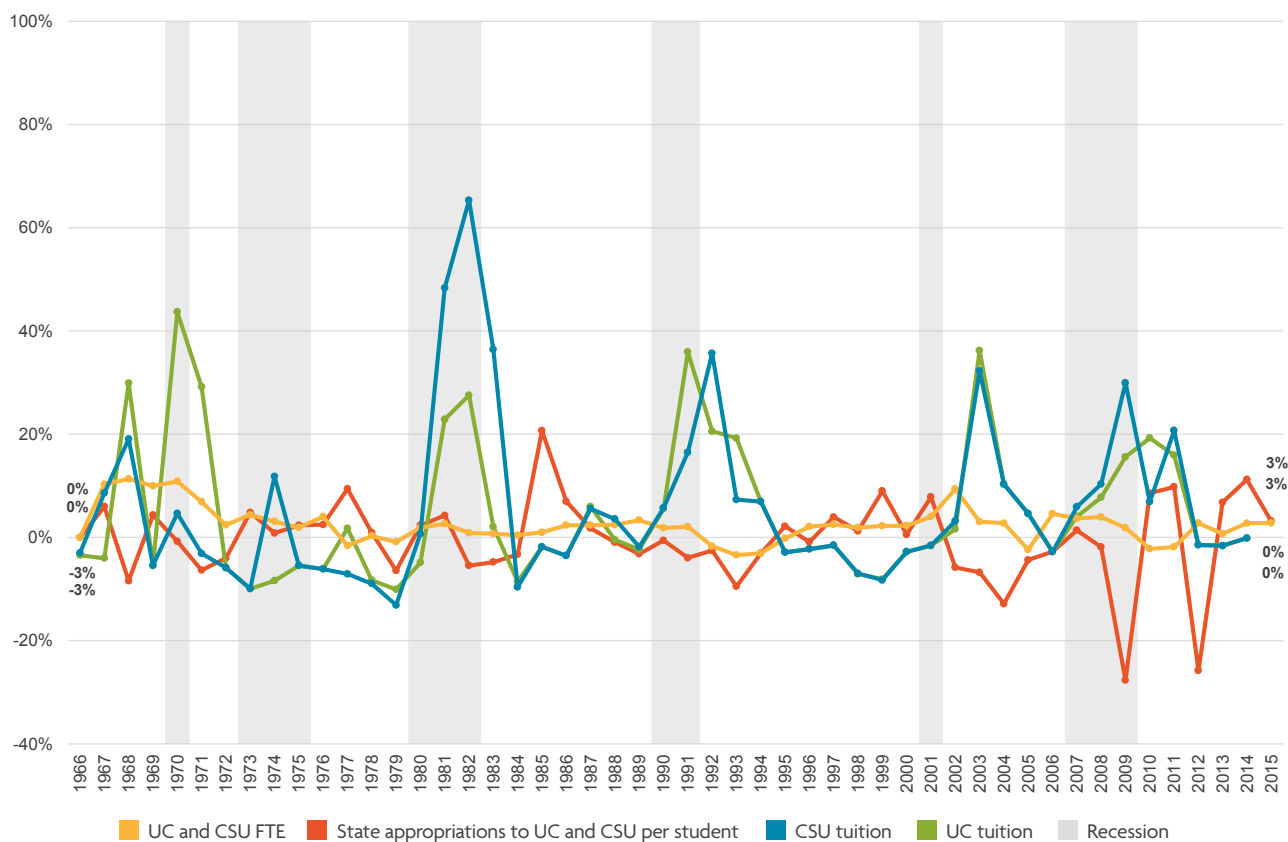


Source data: Analysis provided by Mark Hill in *Prospects for State General Fund Revenues for Higher Education*, from state revenue data maintained by the Legislative Analyst, and GDP and personal income data maintained by the California Department of Finance ([bit.ly/hillprospects](http://bit.ly/hillprospects)).



Over the past 50 years, as state general funds have declined, tuitions at UC and CSU were increased (see Figure 11). During periods when general funds increased, tuitions were held constant.

**FIGURE 11:**  
Annual Percent Change in CA State Appropriations to UC and CSU per Student and UC and CSU Resident Tuition, 1966-2015



Source data: 1966-2004 data from California Postsecondary Education Commission (CPEC) fiscal profiles 2005-2015 ([bit.ly/CPEC5-15](http://bit.ly/CPEC5-15)), from the California governor's enacted budget ([bit.ly/Calbudget](http://bit.ly/Calbudget)).

**TABLE 1:**  
Five- and Ten-Year Changes in Net Tuition per FTE, State Appropriations per FTE and E&R spending per FTE (In 2015 Dollars)

	2004	2009	2014	5-year change (2008-2013)	10-year change (2003-2013)	10-year % change	Average annual % change
<b>UC average*</b>							
Net tuition	\$7,793	\$8,858	\$17,018	\$8,159	\$9,225	118%	12%
State and local appropriations	\$14,854	\$11,064	\$10,287	-\$777	-\$4,567	-31%	-3%
Education and related expenses	\$23,597	\$25,882	\$29,131	\$3,249	\$5,534	23%	2%
<b>CSU average*</b>							
Net tuition	\$4,276	\$5,420	\$8,595	\$3,175	\$4,319	101%	10%
State and local appropriations	\$9,701	\$6,345	\$6,037	-\$308	-\$3,664	-38%	-4%
Education and related expenses	\$13,223	\$14,169	\$14,137	-\$32	\$914	7%	1%

\*UC: UCSF and Hastings College of Law are not included. CSU: CSU Maritime, CSU Channel Islands, and CSU Naval Postgraduate School are not included.

Source data: 2004 and 2009 Delta database of IPEDS data ([bit.ly/deltacost](http://bit.ly/deltacost)), 2014 IPEDS data ([bit.ly/ipedsdata](http://bit.ly/ipedsdata)). Inflation adjustments per Bureau of Labor Statistics CPI.

**State spending on student aid has increased over the past decade.** As general fund appropriations to institutions have been erratic, the state has substantially increased its spending on Cal Grants, effectively subsidizing institutions indirectly by funding a portion of the tuitions paid by needy students (see Tables 2 and 3). Total Cal Grant funding to students in public institutions increased from around \$560 million in 2004-05 to over \$1.5 billion in 2014-15. The lion's share of those increases went to students attending UC, where public sector tuition is highest. However, the CSU system saw the largest increase in the number of students receiving Cal Grants. Since some Cal Grants can be used to pay for living expenses as well as tuitions, not all of these resources can be said to be subsidized revenues to the institutions. Recognizing the limitations of the analysis, we estimate the state now subsidizes around a quarter of the tuition revenues to both UC and CSU.

**TABLE 2:**  
Cal Grant Paid Recipients and Disbursements by Segment, 2005-2015 (Constant 2015 Dollars)

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	Estimated 2013-14	Estimated 2014-15	2005 to 2015 increase	2005 to 2015 % increase
Millions of dollars													
CCC	\$90	\$90	\$85	\$83	\$82	\$85	\$87	\$90	\$88	\$102	\$122	\$32	36%
CSU	\$183	\$195	\$197	\$212	\$232	\$286	\$317	\$406	\$446	\$520	\$593	\$410	223%
UC	\$285	\$306	\$302	\$325	\$374	\$463	\$592	\$709	\$731	\$783	\$822	\$537	188%
Paid recipients													
CCC	64,316	66,750	65,405	66,155	64,481	67,384	70,791	75,856	79,445	91,337	100,200	35,884	56%
CSU	53,212	56,572	59,337	62,471	63,702	65,558	70,508	77,435	87,108	101,515	115,067	61,855	116%
UC	42,035	43,680	45,020	46,566	49,195	52,052	55,406	57,185	60,299	65,382	69,259	27,224	65%
Dollars per paid recipient													
CCC	\$1,396	\$1,342	\$1,300	\$1,250	\$1,270	\$1,261	\$1,225	\$1,187	\$1,112	\$1,117	\$1,217	-\$180	-13%
CSU	\$3,446	\$3,450	\$3,327	\$3,399	\$3,649	\$4,364	\$4,501	\$5,239	\$5,116	\$5,121	\$5,154	\$1,707	50%
UC	\$6,791	\$7,001	\$6,706	\$6,979	\$7,606	\$8,894	\$10,684	\$12,406	\$12,130	\$11,974	\$11,873	\$5,082	75%
Annual change in dollars per paid recipient													
CCC		-4%	-3%	-4%	2%	-1%	-3%	-3%	-6%	0%	9%		
CSU		0%	-4%	2%	7%	20%	3%	16%	-2%	0%	1%		
UC		3%	-4%	4%	9%	17%	20%	16%	-2%	-1%	-1%		

**TABLE 3:**  
Student Aid Subsidy of Higher Education Revenues by Sector, 2005-2015 (Constant 2015 Millions)

	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	Estimated 2013-14	Estimated 2014-15	2005 to 2015 increase	2005 to 2015 % increase
Total tuition revenue by sector (resident and nonresident)													
CCC	\$406	\$405	\$364	\$321	\$335	\$384	\$334	\$372	\$441	\$420	\$410	\$4	1%
CSU	\$1,064	\$1,165	\$1,175	\$1,295	\$1,553	\$1,772	\$1,772	\$2,258	\$2,258	\$2,282	\$2,356	\$1,292	121%
UC	\$1,514	\$1,633	\$1,662	\$1,754	\$1,853	\$2,233	\$2,332	\$3,120	\$3,071	\$3,090	\$3,166	\$1,652	109%
Cal Grant disbursements by sector													
CCC	\$90	\$90	\$85	\$83	\$82	\$85	\$87	\$90	\$88	\$102	\$122	\$32	36%
CSU	\$183	\$195	\$197	\$212	\$232	\$286	\$317	\$406	\$446	\$520	\$593	\$410	223%
UC	\$285	\$306	\$302	\$325	\$374	\$463	\$592	\$709	\$731	\$783	\$822	\$537	188%
State subsidy of tuition through Cal Grants													
CCC	22%	22%	23%	26%	24%	22%	26%	24%	20%	24%	30%	8%	34%
CSU	17%	17%	17%	16%	15%	16%	18%	18%	20%	23%	25%	8%	46%
UC	19%	19%	18%	19%	20%	21%	25%	23%	24%	25%	26%	7%	38%

Source data for student aid in **Tables 2 and 3** is from the California Student Aid Commission, Administration and External Affairs Division May 13, 2014, California Student Aid Commission Meeting, June 19-20, 2014, Exhibit 1.5.a. Provided courtesy of LAO.

**Total cost to the state to increase enrollment, including subsidies via Cal Grants.** The following table estimates the total increase in state funding, both through direct support to institutions and through Cal Grant disbursements, to fund a one percent increase in enrollment across all three sectors.

**TABLE 4:**  
Cost of a One Percent Increase in Enrollment (Millions), 2014-15

	CCC	CSU	UC
FTE enrollment	\$1,109,607	\$382,230	\$249,787
Marginal cost per student (dollars)*	\$5,200	\$9,908	\$18,000
Cal Grant recipients	100,200	115,067	69,259
Disbursements per Cal Grant recipient (dollars)	\$121.9	\$593.0	\$822.3
Cost to increase general fund disbursements to sectors for 1% enrollment increase	\$52.95	\$28.30	\$25.0
Tuition share of cost	\$4.75	\$9.57	\$20.0
<b>Total general fund cost of 1% increase in enrollment (to segments and through Cal-Grants tuition subsidies)</b>	<b>\$54.17</b>	<b>\$34.23</b>	<b>\$33.20</b>

\*CCC cost to increase enrollment is based on Governor’s budget (\$115 million for a two percent increase in enrollment) is for “for credit” students. CCC and CSU general fund share of one percent increase is based on current general fund/tuition share of costs. UC marginal cost is per UC Office of the President and is divided as follows: \$10,000 per student state share, \$8,000 per student tuition share. CSU marginal cost is per CSU and is divided as follows: \$7,405 per student state share, \$2,503 per student tuition share.

Source data and methodology for **Table 4:** The calculations assume that the current ratio of student/ Cal Grant recipients remains constant and the current funding per Cal Grant recipient per sector also remains constant. Furthermore, the general fund share and tuition share of costs is based on the current ratio of general fund/tuition share of institutional core revenues which assumes that the state does not ‘buy out’ tuitions but funds each new one percent through a combination of state general fund increases and tuition increases. Enrollment estimates are at current levels. Sources: enrollment data from Department of Finance, Governor’s Budget ([bit.ly/Calbudget](http://bit.ly/Calbudget)); Cal Grant recipients and disbursement data from California Student Aid Commission, Administration and External Affairs Division May 13, 2014, California Student Aid Commission Meeting June 19-20, 2014, Exhibit 1.5.a. Provided courtesy of LAO; data sources calculating a one percent increase in general fund and tuition are listed with **Figures 12 and 13.**

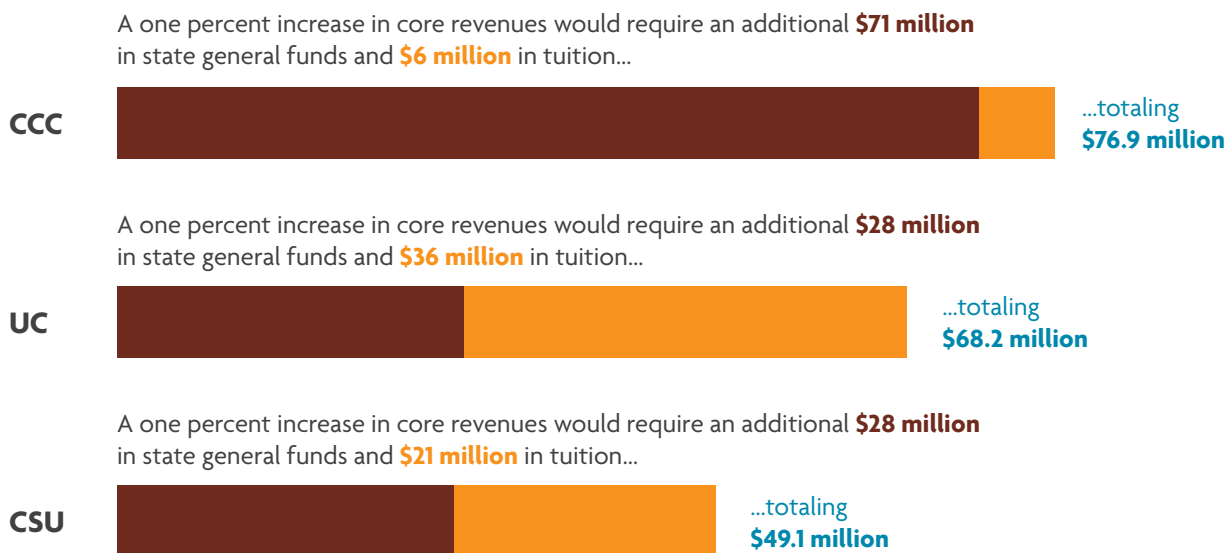
## Comparing costs

The report notes that the stovepiped decision making process around revenues and expenditures on salaries, benefits, and enrollments makes it difficult for decision makers either in the systems or the state to know the trade-offs involved in these decisions. We brought together data from several sources to see what those trade-offs might look like, for comparisons of what it would cost to:

1. Increase core revenues (in state general funds and in tuition revenues) by one percent for each system.
2. A one percent increase in spending for new enrollments, versus a one percent increase in salaries or benefits.
3. The impact on student tuitions from a one percent increase in spending, assuming that the state general fund subsidy share of costs remains the same. If the state subsidy share of costs were to increase, the per-student amount would decline, and vice versa.

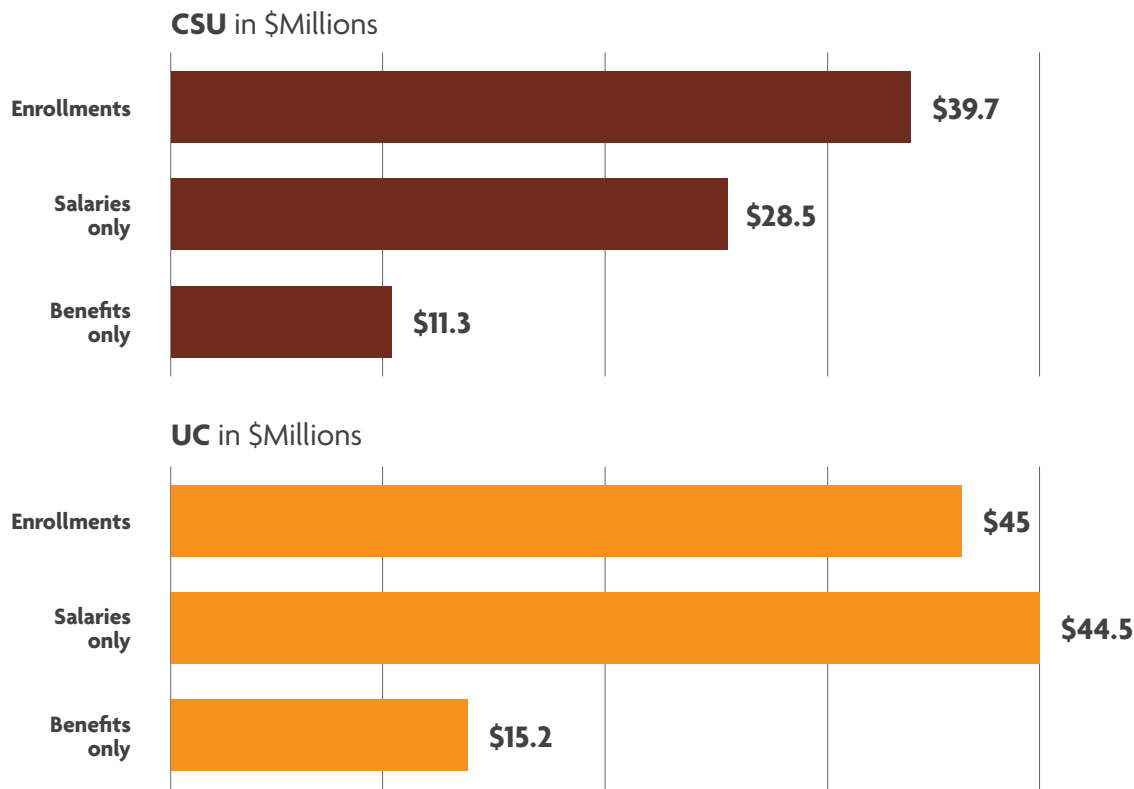
**FIGURE 12:**

### What Would a One Percent Increase in Core Revenues Cost for Each of California's Three Higher Education Systems?



**FIGURE 13:**

How Would a One Percent Increase in Enrollment Funding Compare to a One Percent Increase in Faculty and Staff Salaries and Benefits?



Source data and methodology for **Figures 12 and 13**: General fund, student tuition, and UC general fund share are calculated by taking the percent each represents of total revenues and applying that percent to the one percent increase in each metric.

CCC data from Department of Finance 2016-17 budget ([bit.ly/Calbudget](http://bit.ly/Calbudget)), CSU data from Audited Financial Statements ([bit.ly/CSUfs15](http://bit.ly/CSUfs15)), UC data from UC Budget for 2015-16 ([bit.ly/UCbudget](http://bit.ly/UCbudget)), CSU benefit and salary data from Functional Classification of Salaries and Benefits found in the audited financial statements ([bit.ly/CSUfs15](http://bit.ly/CSUfs15)). UC benefit and salary data from Department of Finance, expenditures by category budget gallery provided by Department of Finance. Salary and benefit data are calculated based on the general fund and tuition share of salaries and benefits using functional classifications and methodology from Delta Cost Project education and related calculations.

**TABLE 5:**

**Tradeoffs: Student Cost in One Percent Increases in Enrollments and One Percent Increase in Salaries and Benefits for Personnel Funded from Core Revenues (Dollars)**

	Enrollments	Salaries and benefits	Salaries only	Benefits only
<b>UC</b>				
<i>Average student share of a 1% increase in revenues (resident and nonresident)</i>	\$79.67	\$124.92	\$93.07	\$31.85
Impact on resident students at current split	\$59.24	\$92.88	\$69.20	\$23.68
Impact on nonresidents at current split	\$170.27	\$267.00	\$198.92	\$68.08
<b>CSU</b>				
<i>Average student share of a 1% increase in revenues (resident and nonresident)</i>	\$52.28	\$81.98	\$61.08	\$20.90
Impact on resident students at current split	\$22.66	\$41.23	\$29.50	\$11.72
Impact on nonresidents at current split	\$62.83	\$114.31	\$81.80	\$32.51

Source data and methodology for Table 5: This table builds on the analysis in **Figure 13** of a one percent increase in enrollments or salaries or benefits funded through core revenues. Table 5 provides a closer look at the impact on individual students by taking the total one percent increase in each spending category and distributing it to current students. The analysis in Table 5 assumes no change in student levels. Furthermore, the calculations for resident students and nonresident students uses the “current split” which is the share of total tuition revenues that can be attributed to resident tuition versus nonresident tuition (nonresident base tuition and nonresident supplemental tuition) for both the CSU and UC. The current split for CSU is calculated to be 85% resident, 15% nonresident. For UC the split is calculated to be 61% resident and 39% nonresident. Per student dollar amounts are calculated using FTE students.

Sources: CSU benefit and salary data from functional classification of salaries and benefits found in the audited financial statements ([bit.ly/CSUfs15](http://bit.ly/CSUfs15)).

UC benefit and salary data from Department of Finance expenditures by category budget gallery provided by Department of Finance. Salary and benefit data are calculated based on the general fund and tuition share of salaries and benefits using functional classifications and methodology from Delta Cost Project education and related calculations. Enrollment source: FTE: 2015-16 Governor’s proposed budget (total undergrad, grad/post baccalaureate and health sciences FTE projected, [bit.ly/Calbudget](http://bit.ly/Calbudget)).