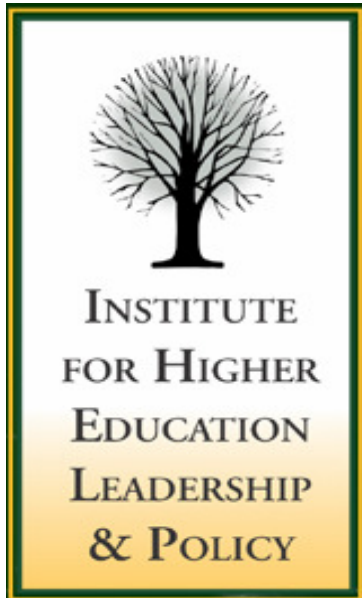


Policy Issue Report

October 2006



STATE OF DECLINE?

Gaps in College Access and
Achievement Call for
Renewed Commitment to
Educating Californians

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Executive Summary

This is the second in a series of reports analyzing and interpreting California's performance on key higher education measures by looking at regional and racial differences in these measures. The study uses a methodology similar to that of the 50-state higher education report card produced bi-annually by the National Center for Public Policy and Higher Education. The national report card presents composite, statewide scores in five categories, with the intent of spurring more detailed analysis by states. An examination of the individual components within each category, and a breakdown of the data by region and race/ethnicity, reveals a few hopeful signs in the area of preparing high school students for college, including improvements in standardized test scores and increasing enrollment of 8th graders in algebra, considered a gateway to enrolling in higher math and science courses that better prepare students for college. However, our analysis reveals several serious performance problems facing California, including:

- * Preparation levels that remain comparatively low, especially in science and math, despite some recent improvement in measures of high school student preparation for college.
- * Low rates of college attendance among traditional-aged students, related both to high school drop out rates and low rates of college-going among high school graduates.
- * Decreasing rates of enrolling in college directly after high school for all racial/ethnic groups over the last ten years, a discouraging trend given the state's already low rates of direct college entry.
- * Low rates of completion when all students enrolled in college are included in the measure.
- * Decreasing affordability.
- * Substantial disparities across regions and racial/ethnic populations in levels of college preparation, participation, and completion.
- * Projections of a large drop in the education levels of California's workforce and per capita income if the gaps among racial/ethnic groups in college going and completion persist.

Policy implications of this analysis include the following:

- * Closing the racial/ethnic gaps in high school graduation, college participation, and degree completion is essential to California's social and economic health as growth in the state's working-age population occurs primarily among the Latino population, which exhibits lower rates of educational attainment.
- * K-12 reform efforts must promote a college-going culture and improve the linkages between high school proficiency and college readiness.

- * Policies that promote direct, full-time enrollment in college after high school, if paired with policies to improve college readiness, stand to reap huge benefits for degree and certificate completion, and ultimately for state economic health.
- * Policies that encourage regional collaboration across sectors to address unique regional challenges must be coupled with statewide interventions, given the huge performance variations across regions.
- * State policies for financing higher education should address the relative shares of revenue from state appropriations and student fees to ensure that a commitment to affordability does not result in under-funded colleges and universities.

Introduction

In September 2006, the National Center for Public Policy and Higher Education issued its fourth biannual report card that grades the 50 states on the performance of their higher education systems.¹ The *Measuring Up* reports grade states in six categories: preparation, participation, affordability, completion, benefits, and learning.² The Center's reports and data are intended to push states to delve more deeply into performance issues and to develop plans for improving performance. This report is intended to serve that purpose by calling attention to worrisome performance shortfalls and performance gaps across populations and regions.

After the 2004 *Measuring Up* report was issued, we produced a report analyzing California's grade in each category,³ and providing additional data examining performance within subpopulations and in different regions of the state. We found that California higher education has its share of problems, some of which are masked by the composite report card grades and by the huge variations across the regions and subpopulations of this diverse and complex state. This report updates that analysis where new data are available, and includes:

- ◆ An explanation of the overall state grade in each category of *Measuring Up* that highlights key performance issues underlying the grade and changes over the four *Measuring Up* reports;
- ◆ A breakdown of related data, where possible, by region⁴ and race, in order to focus attention on the key variations that warrant policy attention;
- ◆ An explanation of California's performance in two areas not covered in *Measuring Up* – finance and the overall pipeline from high school through to college completion;
- ◆ A summary of the policy implications of the performance data; and
- ◆ Appendices to assist those with an interest in the details of the computations.

As we noted in our earlier report, there is no substitute for an educated populace in California's drive for economic and social health. We offer this second report on California's higher education performance to help policymakers enhance California's future prospects by strengthening the state's higher education system and increasing the levels of educational attainment of its residents.

¹ See www.highereducation.org

² See Appendix 1 for brief description of the report's methodology.

³ Moore, C. & Shulock, N. (2005). *Variations on a Theme: Higher Education Performance in California by Region and Race*. Sacramento, CA: Institute for Higher Education Leadership & Policy.

⁴ See Appendix 3 for definition of regions.

How is California Performing?

The state's most recent grades in the *Measuring Up* report card are somewhat higher than those in earlier reports in the area of preparing K-12 students for higher education, in the level of participation in higher education, in getting students to complete certificate or degree programs, and in measures of the economic and social benefits of having an educated population.⁵ The state's grade for affordability declined substantially, although the change in the grading methodology makes comparisons between years virtually meaningless. It remains the highest grade in this category among all 50 states.⁶ We analyze each category below, in depth and by race/ethnicity and region, and call attention to areas that warrant attention from educators and lawmakers.

Preparation

The average grade for preparation reflects mixed performance on readying K-12 students for higher education. California is one of the leading states in the share of 8th graders taking algebra, and compares well with other states in the share of secondary school students taught by qualified teachers. However, fewer high school students than in many other states enroll in the rigorous upper-level math and science courses needed for success in higher education. The proportion of students taking upper-level math has

been increasing, a trend that could be encouraged through continued efforts at high school reform and alignment of standards with higher education. Small proportions of students score well on college entrance exams, although performance on Advanced Placement (AP) tests compares well with other states. Small improvements have been made in the achievement of 8th graders on standardized tests in math, writing and science, although scores remain very low compared to students in other states. California is ranked 48th in science achievement. About two-thirds of secondary school students in the state are taught by teachers with a major in the appropriate subject area, which compares well with top-performing states. Overall, while the state is making some progress in better preparing K-12 students for college, it has far to go to compete with the top states in this area.

PREPARATION

C

- + California is among the top states in the percentage of 8th graders taking Algebra.
- + The number of high school juniors and seniors taking and doing well on Advanced Placement tests has increased, placing California in the top fifth among all states on this measure.
- California ranks 35th among states in the share of high school students taking advanced math courses and 49th in the share taking advanced science courses.
- California is in the bottom fifth among states in the share of 8th graders scoring at or above “proficient” on all subject areas of the National Assessment of Educational Progress (NAEP), and has especially low scores on the science measure (ranks 48th).

⁵ See Appendix 2 for a list of California's scores on each of the indicators in the grades and their weighting.

⁶ Utah also received a C- in the affordability category

Key Findings: Regional Differences

- * Proficiency in math and language arts among 8th grade students, as measured by the state's Standardized Testing and Reporting (STAR) exams, varies considerably across regions (see Table 1).
 - ◇ Half of 8th graders in Orange County and the San Francisco Bay area are proficient in language arts, while only about one-third of 8th graders are proficient in the San Joaquin Valley, Los Angeles County, and the Inland Empire.
 - ◇ More than one-third (36%) of 8th graders in Orange County are proficient in math, while about one-fifth of 8th graders are proficient in the South San Joaquin Valley, Monterey Bay, and the Inland Empire.
- * The proportion of students proficient in math stayed the same or increased in most regions since our last report, although it declined somewhat in the rural regions of Superior California and Inyo-Mono. Only the Inyo-Mono region showed a decline in the proportion of students proficient in language arts, while the figure increased by seven to nine percentage points in all other regions.
- * The variation in the number of high scores on Advanced Placement (AP) exams across regions reflects both differences in the availability of AP coursework and in the performance of students who take the tests. Likewise, differences in the number of high scores on college entrance exams reflect variation in both the share of seniors taking the tests and the performance of the test-takers.⁷
- * There are substantial differences across regions in the share of students enrolling in a more rigorous college preparatory curriculum (see Figure 1). Some regions have improved on these measures since our last report. The share of 8th grade students enrolling in algebra increased in all regions except the Inyo-Mono region. The share increased by 10 percentage points or more in Los Angeles County, Superior California, the San Francisco Bay, the San Diego/Imperial region, the North San Joaquin Valley, the Inland Empire, the Upper Sacramento Valley and the North Coast. Most regions also showed increases in the share of students enrolling in advanced math and science courses, although the increases were much smaller (and the share actually declined in a few regions).
- * The San Diego/Imperial region continues to enroll the largest share of 8th graders in algebra, although the Inland Empire's large increase since our last report makes the two regions nearly equal on this measure. The San Diego/Imperial region also continues to have the highest share of its juniors and seniors enrolled in chemistry and physics, although that figure declined from 58% to 54% since our last report. The Inyo-Mono region and Orange County continue to enroll the highest share of juniors and seniors in advanced math courses.

⁷ The number of SAT test-takers as a share of 12th grade enrollment varies substantially across the regions – from 20% to 29% in Superior California, the North Coast and the San Joaquin and Sacramento Valley regions; from 30% to 39% in the San Diego/Imperial region, Los Angeles County, the Central Coast, the Monterey Bay area, the Inland Empire and the Inyo-Mono region; and from 40% to 47% in Orange County and the San Francisco Bay area.

* Forty-two percent of high school graduates in the San Francisco Bay area complete the A-G curriculum,⁸ while only about half that percentage (22%) of graduates in the South San Joaquin Valley fulfills that requirement for university admission. The share of graduates completing A-G requirements remained the same or increased in most regions since our last report, although it declined in Superior California and the Sacramento Valley regions.

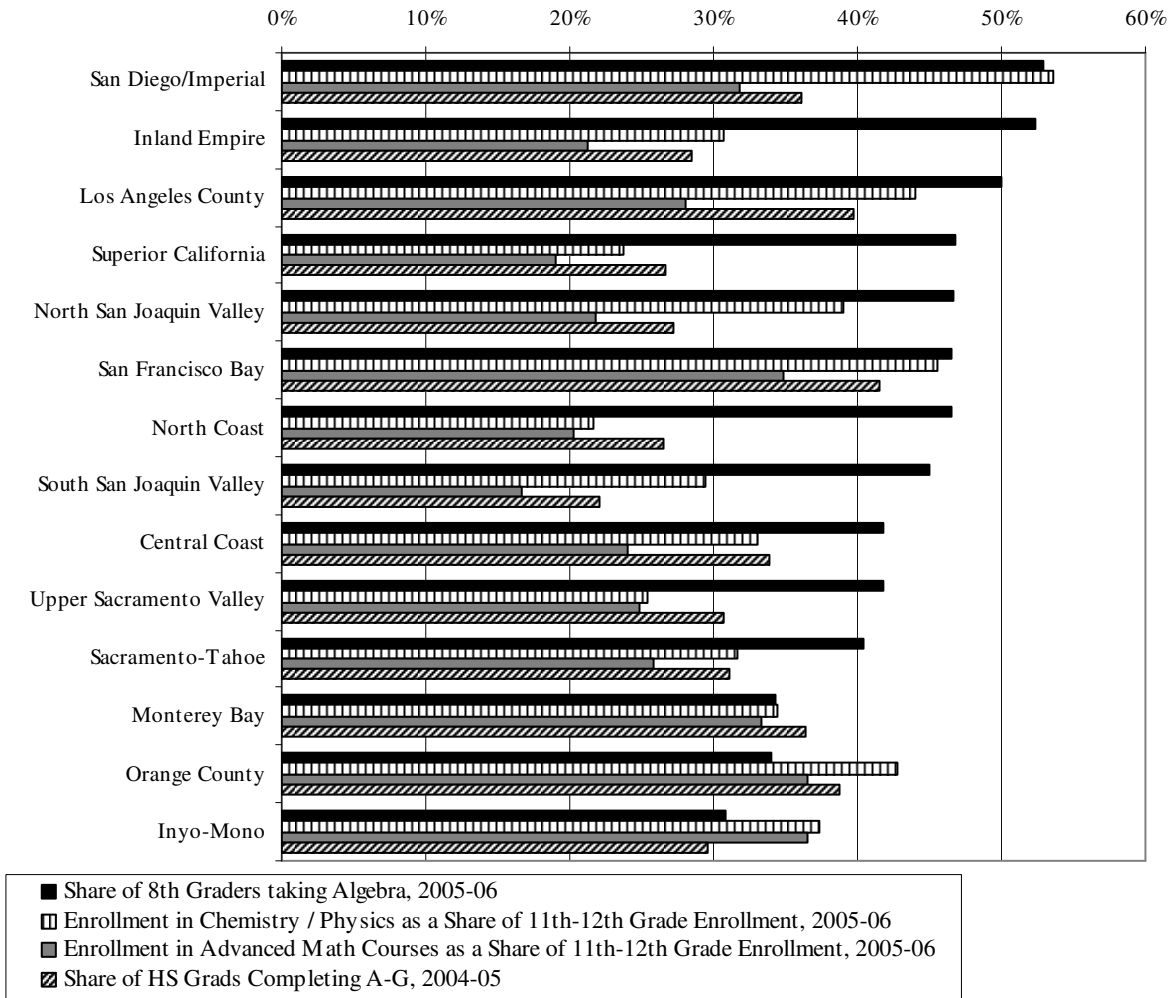
Table 1
K-12 Preparation Measures by Region

Region	Share of 8th Graders at or Above “Proficient” in Math, 2005-06	Share of 8th Graders at or Above “Proficient” in Language Arts, 2005-06	Number of AP Scores ≥ 3 per 1,000 11th and 12th Graders, 2004-05	Number of Scores on SAT ≥ 1000 and on ACT ≥ 21 per 1,000 HS Seniors, 2004-05
Orange County	36%	50%	330	354
Central Coast	31%	48%	237	279
San Francisco Bay	30%	50%	286	366
Sacramento-Tahoe	27%	47%	134	243
North Coast	25%	44%	115	192
Upper Sacramento Valley	25%	43%	85	180
Inyo-Mono	24%	40%	107	240
Superior California	24%	47%	103	183
San Diego/Imperial	24%	46%	284	304
Los Angeles County	24%	35%	233	218
North San Joaquin Valley	23%	35%	108	149
Monterey Bay	20%	37%	156	213
South San Joaquin Valley	20%	33%	99	127
Inland Empire	19%	36%	133	161

Source: Author calculations based on data from the California Department of Education

⁸ See <http://pathstat1.ucop.edu/ag/a-g/index.html> for a description of the A-G requirements

Figure 1: Enrollment in College Preparatory Courses by Region



Source: Author calculations based on data from the California Department of Education

Key Findings: Racial/Ethnic Differences

- * The share of 8th graders that are proficient on the state’s standardized tests of math and language arts has increased for all racial/ethnic groups as compared to our earlier report.
- * Substantial racial/ethnic gaps remain, however, with larger shares of Asian⁹ and white 8th graders being proficient as compared to black and Latino students (see Table 2).

⁹ This report combines all persons of Asian or Pacific Islander descent into one category due to data limitations. There are likely substantial differences across Asian sub-populations in measures related to college preparation, participation and completion which are masked by only using one category.

- * While black and Latino students are less likely to take rigorous coursework, including higher-level math and science courses and the required series of university preparation courses (see Figure 2), their enrollment in these courses increased since our last report (with the exception of the share of black students enrolling in advanced math, which declined by about one percentage point).
- * White and Asian students achieve high scores on college entrance exams at much higher rates than black and Latino students, due both to higher rates of taking the exams (for Asians, in particular) and higher scores among those who take the test.¹⁰ As with the standardized test scores, the rate of students getting high scores has increased for all racial/ethnic groups, although the increases were larger for white and Asian students than for black and Latino students.

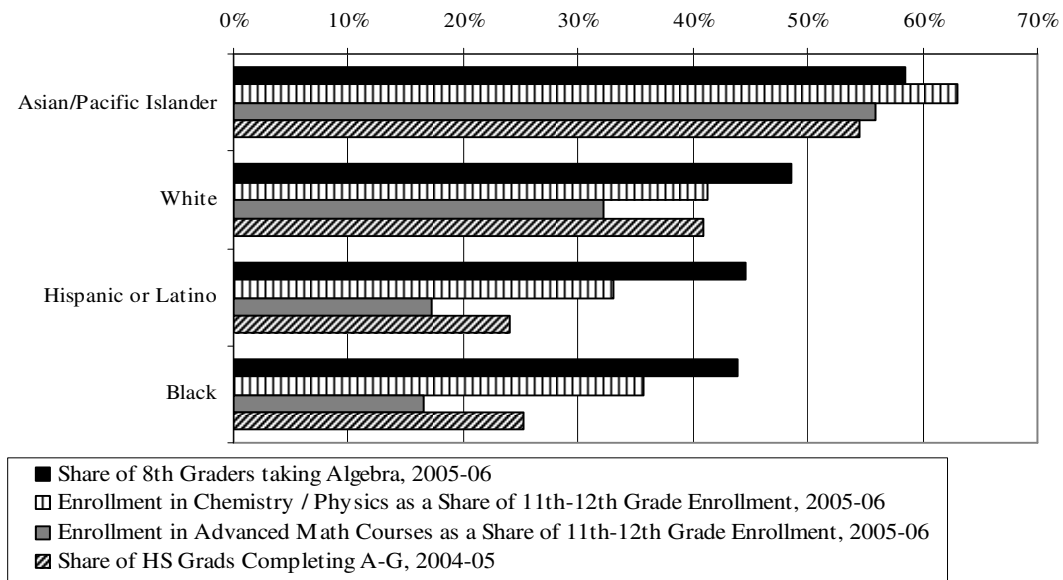
Table 2
K-12 Preparation Measures by Race/Ethnicity

Region	Share of 8th Graders at or Above “Proficient” in Math, 2005-06	Share of 8th Graders at or Above “Proficient” in Language Arts, 2005-06	Number of Scores on SAT \geq1000 and on ACT \geq21 per 1,000 HS Seniors, 2004-05
Asian/Pacific Islander	43%	59%	414
White	38%	62%	288
Hispanic or Latino	18%	25%	79
Black	16%	27%	94

Source: California Department of Education.

¹⁰ The percentage of high school seniors taking the SAT was 57% for Asian students, 33% for white students, 29% for black students and 21% for Latinos. The average total score was 1,063, 1,085, 869 and 899, respectively.

Figure 2: Enrollment in College Preparatory Courses by Race/Ethnicity



Source: Author calculations based on data from the California Department of Education

Affordability

California’s “C-” on affordability was the highest grade in the nation in the *Measuring Up 2006* report. The state was awarded an “A” in both the 2000 and 2002 reports, and a “B” in the 2004 report. The drop in grade is in large part related to changes in the methodology to measure affordability,¹¹ although recent fee increases have had an impact on the latest grade. Nearly all states (48) received a grade of either “D” or “F” for affordability.

AFFORDABILITY

C-

- + California is the top-performing state in this category, due primarily to the low fees at community colleges.
- California families must devote a comparatively large share of family income, after financial aid, to pay for college tuition, room and board.
- California undergraduates who take out student loans borrow more per year (\$4,089 on average) than in all but six other states.

California’s high performance relative to other states is due primarily to the low tuition at community colleges. The share of family income required to pay college costs (net of financial

¹¹ The 2004 and 2006 reports use a different basis for comparison on the affordability grade than on the other grades, a change from the 2000 and 2002 reports. The grade is calculated using the top five state scores from a decade ago as a benchmark, rather than using the current top five scores.

aid, including room and board) is higher than in many other states.¹² The state’s high cost of living and comparatively low average income levels at the bottom of the income distribution mean that net college expenses take up a larger share of family resources. In addition, among undergraduates who take out student loans, students in California borrow a larger amount.

California’s state investment in need-based financial aid for low-income students as a share of the federal investment is 53%. Top-performing states invest more in need-based aid by this measure, with the investment of the top five states averaging nearly 90% of the federal investment. A lower likelihood of applying for need-based aid, particularly among community college students, at least partly accounts for California’s performance on this measure. While low-income students in the community colleges can have their fees waived without applying for other federal and state financial aid, the fee waiver does not cover non-fee costs of college attendance, which are a more significant barrier to affordability than are the low fees charged by community colleges.

Data are not available to calculate affordability measures by region or by race/ethnicity. Student fee levels within each segment of higher education are the same across the state,¹³ while average household income and cost of living vary both by region and by race/ethnicity. However, any judgment about “affordability” would have to include adjustments for student financial aid, and those data are not readily available by region or race/ethnicity.

Participation

California continues to receive an “A” for participation, due largely to the high number of working-age adults enrolled part-time in community colleges. The state’s low-cost, open-access community colleges continue to attract working adults. The rate of high school graduates going directly to college remains fairly low, however. The percentage of 9th graders enrolling in college within four years is 35 percent. While this represents a small increase over the last *Measuring Up* report, the figure is more than 50 percent among the highest-performing states. **California ranks 40th among the states in the rate of high school graduates going directly to college.**¹⁴ Young adults who delay college attendance also delay the economic and social benefits of higher education, benefits that accrue both to the individuals and to the state. In addition, research on college completion suggests that students who follow the

PARTICIPATION

A

- + 5% of working-age adults in the state are enrolled part-time in postsecondary education, placing California among the top performers on this measure.
- + 40% of Californians age 18 to 24 are enrolled in college, giving the state a rank of 5 on this measure.
- Only 35% of high school freshmen enroll in college within 4 years, as compared to 53% among the top states.

¹² California’s rank among states varies by sector. The state ranks 38th for the share of family income required to pay college costs at community colleges, and 37th and 44th, respectively, for the share required to pay costs at public and private universities.

¹³ While the statewide fees are the same across campuses, each college or university may charge somewhat different amounts in campus fees for health services, instructional materials, student centers, etc.

¹⁴ Based on data available from the NCHEMS Information Center for State Higher Education Policymaking and Analysis - see www.higheredinfo.org

traditional college enrollment pattern of entering college immediately following high school are more likely to graduate.¹⁵

Key Findings: Regional Differences

- * As measured by the Census Bureau's American Community Survey, the college participation rate of 18 to 24 year-olds varies substantially across regions. The rates range from a low of 13 percent in the Inyo-Mono region to a high of 49 percent in the Central Coast and the Upper Sacramento Valley region (see Table 3).¹⁶ The rates represent increases over our last report for all regions except the Upper Sacramento Valley, the North Coast and Superior California (but see footnote 16).
- * The participation rates based on Census data for some regions are affected by the location of universities. For example, the location of CSU Chico and its 16,000 students in Butte County significantly raises the participation rate of the Upper Sacramento Valley region to 49 percent, where the rate is only 17 to 27 percent in the other counties of this rural region.
- * The share of older adults enrolled in higher education varies across regions, but less so than for young adults. The rates range from less than five percent in Superior California and the South San Joaquin Valley to over six percent in the Sacramento-Tahoe, Monterey Bay and San Diego/Imperial regions. The rates have generally stayed about the same or declined since our last report.
- * Residents of counties without easy access to community colleges have lower participation rates, particularly among adults ages 25 and over. The rate of participation among this group is substantially lower in some of the rural counties, with rates of two to three percent in Amador, Modoc, Calaveras, Sierra and Trinity Counties.
- * The college-going rate directly from high school varies from a low of 23 percent in the Upper Sacramento Valley to a high of 67 percent in the Central Coast area (see Figure 3). The rates have declined over the last decade in most regions, with particularly large declines in the San Francisco and Monterey Bay areas, the San Diego/Imperial region, the North San Joaquin Valley, the Upper Sacramento Valley, and Superior California. The direct college-going rate increased in the Central Coast and increased slightly in the Inland Empire.

¹⁵ Adelman, C. (1999). *Answers in the toolbox: Academic intensity, attendance patterns, and bachelor's degree attainment*. Washington, DC: US Department of Education.

¹⁶ The 2005 American Community Survey includes county-level data for 40 of California's 58 counties (those where no data are available are rural counties with relatively small populations). For counties where no ACS data are available, we used the same 2000 Census data that we used in our 2005 *Variations on a Theme* report. The overall participation rate for the state is unaffected by the use of the 2000 data for these small, rural counties, although the rate for a few regions may be affected. For the North Coast region, 2000 data is used only for Del Norte County, the smallest county in the region, so the rate should be minimally affected. For Superior California, 2000 data is used for all but Shasta County, which accounts for 62% of the region's population. Similarly, for the Upper Sacramento Valley, 2000 data is used for all but Butte County, which accounts for 62% of the region's population. No participation rate is shown for the Inyo-Mono region because ACS data is not available for either of those small counties.

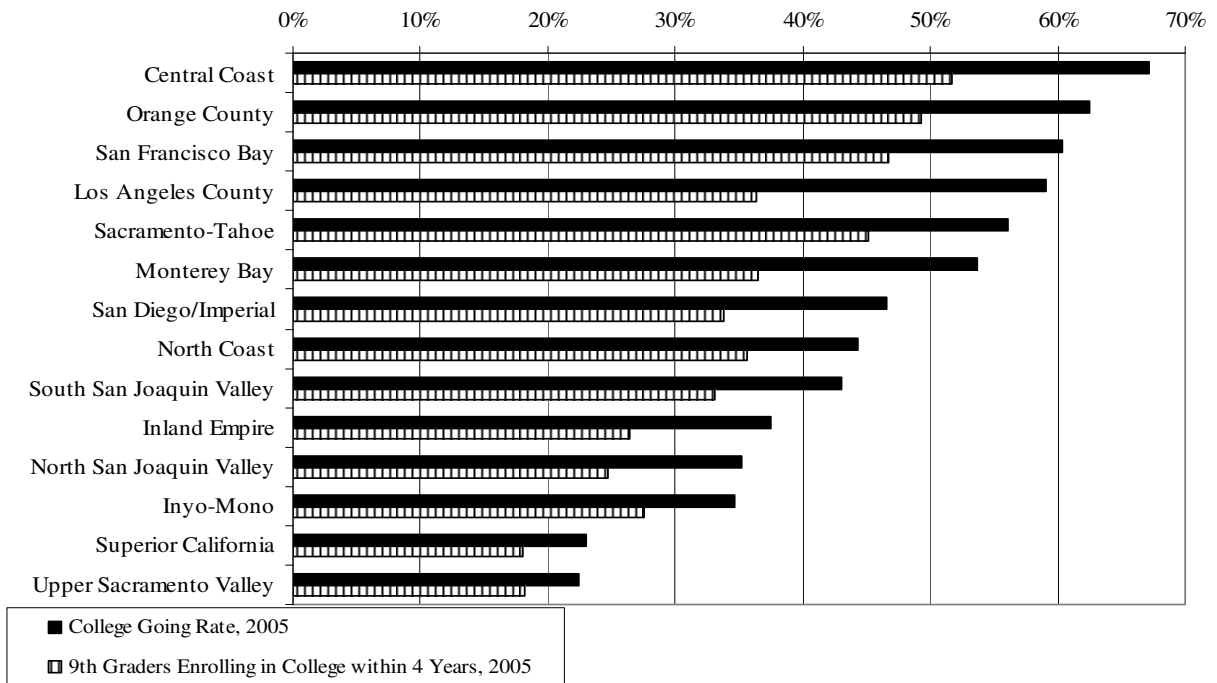
* A 9th grader in the Upper Sacramento Valley or Superior California has only an 18 percent chance of enrolling in college within four years, as compared to a 52 percent chance for a Central Coast 9th grader.

Table 3
College Participation Rates by Region

Region	Percent of 18-24 Year-Olds Enrolled in College	Percent of Adults Ages 25+ Enrolled in College
Upper Sacramento Valley	49%	5.8%
Central Coast	49%	5.7%
San Francisco Bay	45%	5.8%
Orange County	45%	5.7%
Sacramento-Tahoe	40%	6.4%
San Diego/Imperial	40%	6.4%
Los Angeles County	38%	5.8%
Monterey Bay	38%	6.2%
Inland Empire	33%	5.5%
North San Joaquin Valley	32%	5.0%
North Coast	30%	5.8%
Superior California	24%	4.7%
South San Joaquin Valley	24%	4.7%
Inyo-Mono	n/a	n/a

Source: Author calculations based on data from the Census Bureau's 2005 American Community Survey. Data not available for 18 small, rural counties, so used figures from Census 2000 for those counties. See footnote 16 for more information.

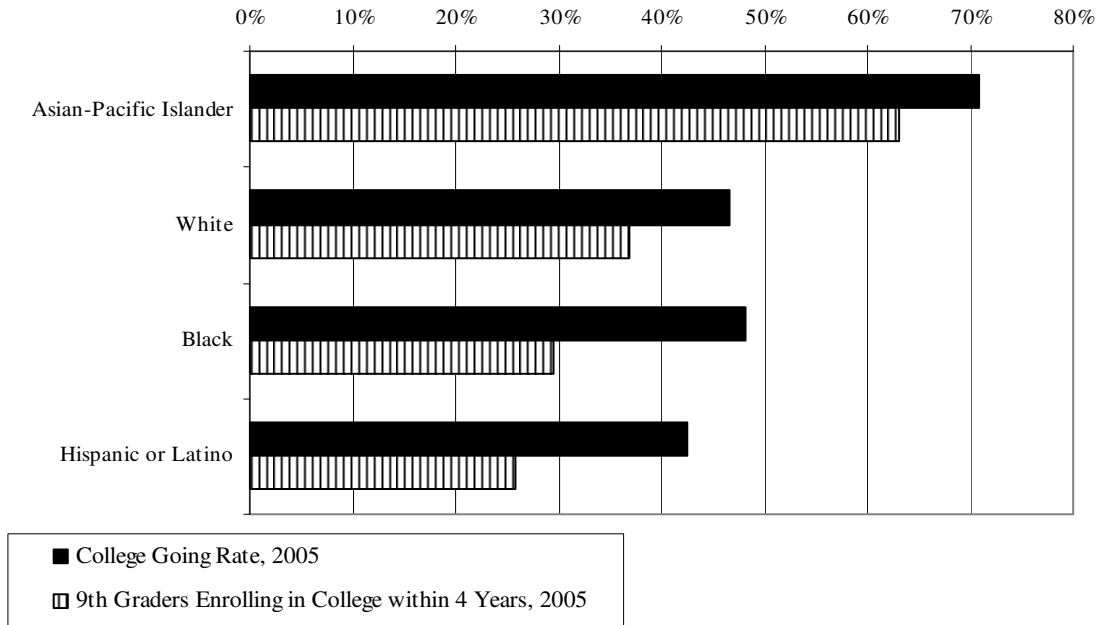
Figure 3: Direct College-Going Rates by Region



Findings: Racial/Ethnic Differences¹⁷

- * Seven out of ten Asian high school graduates go directly to college, a rate far higher than for any other racial/ethnic group (Figure 4). The rate of graduates going directly to college is less than half for white (47%), black (49%), and Latino (43%) students.¹⁸
- * The direct college-going rate has *declined* for all racial/ethnic groups over the last decade, a discouraging trend given that California ranks 40th among states in direct college entry.
- * The chance of a black or Latino 9th grader enrolling in college within four years is lower than that for a white student, and much lower than that for an Asian student. Lower rates of high school graduation are a larger factor than are differences in rates of college going.

Figure 4: Direct College-Going Rates by Race/Ethnicity



Source: Author calculations based on data from the California Department of Education and the California Postsecondary Education Commission

¹⁷ American Community Survey data for college enrollment is not available by race/ethnicity, so we do not present census-based participation rates by race/ethnicity.

¹⁸ This measure is based on data from the California Postsecondary Education Commission (CPEC) and the California Department of Education (see Appendix 4 for description of calculation). The data do not account for enrollment in out-of-state institutions or in some private institutions that do not report enrollment data to CPEC.

Completion

California's grade on completion increased from a "C" to a "B" in the latest *Measuring Up* report. The indicators used in this category of *Measuring Up* largely measure the performance of full-time freshmen, and show California doing well on retaining and graduating these students. Eighty-three percent of full-time freshmen at universities

return for their sophomore year, tying Massachusetts for the top rank on this measure. With more than 60 percent of full-time freshmen completing a bachelor's degree within six years, California ranks 11th on this measure. The higher selectivity of the state's public universities contributes to the good performance on graduation rates. Only the top one-third of high school graduates in California is eligible to enroll directly in a public university, while many other states have universities that are less selective. Additionally, these graduation rates do not take into account California's heavy reliance on community colleges for providing lower division instruction. California's Master Plan for Higher Education ensures that a substantial number of students enroll in the community colleges for the first two years of baccalaureate instruction. Nearly 75 percent of all public higher education enrollments in California are in the community colleges, considerably above the 50 percent enrolled in that sector in the rest of the country.¹⁹ Also, only half of California's college students are enrolled full time, as compared to 63% in the rest of the country.²⁰ Typical graduation rates based on the experiences of full-time freshmen, like those included in *Measuring Up*, do not include the outcomes of part-time students, or students with baccalaureate intentions who begin in the community colleges. Instead, they capture primarily the success rate of the most well-prepared and financially stable students who can begin their baccalaureate studies full time at UC or CSU. California performs very poorly on the number of certificates and degrees awarded per 100 undergraduates enrolled, ranking 47th among the 50 states, although its performance on this measure has improved in recent years.

COMPLETION

B

- + California is in first place among the states in the share of freshmen at 4-year universities returning for their sophomore year.
- + The percentage of first-year, full-time community college students returning their second year has been increasing, although it remains lower than in top-performing states.
- The number of certificates and degrees awarded per 100 undergraduates enrolled is very low, placing California 47th among all states.

Key Findings: Regional Differences

- * The number of baccalaureate degrees awarded as a share of enrollment in UC and CSU is highest for students from the Inyo-Mono region (27.6)²¹ and lowest for students from the South San Joaquin Valley (19.2) (see Figure 5).
- * Variation in award rates across community colleges in different regions may be related to the needs of local job markets, to the number of choices for higher education in an area, and/or to the degree of focus of a particular college on serving students interested in terminal certificates and degrees as opposed to transfer to a university (students who transfer generally do so without earning a degree).

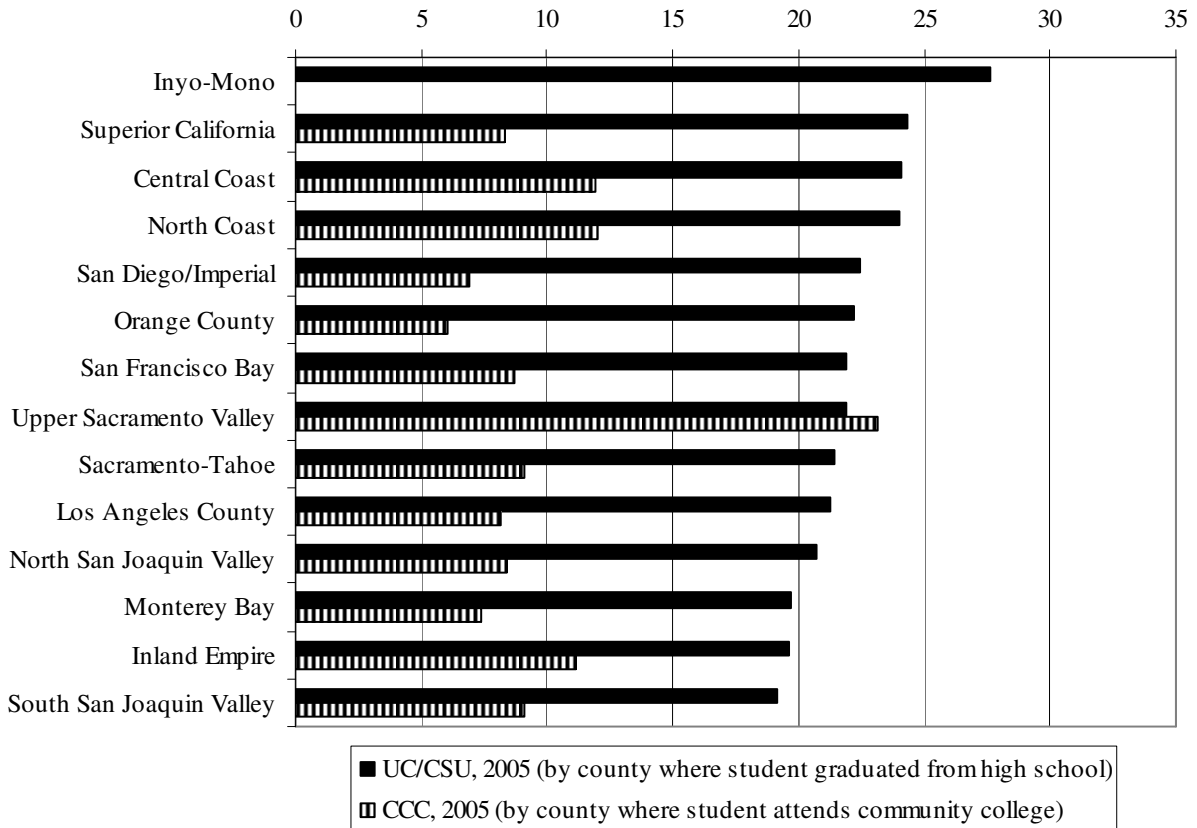
¹⁹ National Center for Education Statistics, *Digest of Education Statistics 2005*, Table 198.

²⁰ *Ibid.*, Table 191 (Fall 2004)

²¹ It should be noted that the figure for the rural Inyo-Mono region is based on only 200 students from this region enrolled in UC/CSU. No data are presented for community college completion for this region because there are no colleges located in Inyo or Mono counties.

* The exceptionally high award rate for community colleges in the Upper Sacramento Valley region as compared to other regions reflects the award of many short-term certificates (less than one year) in agricultural production and protective services disciplines and is therefore not indicative of overall performance. Every region except the Upper Sacramento Valley awards more associate degrees than short-term certificates.

Figure 5: Certificates and Degrees Awarded per 100 Undergraduates Enrolled by Region

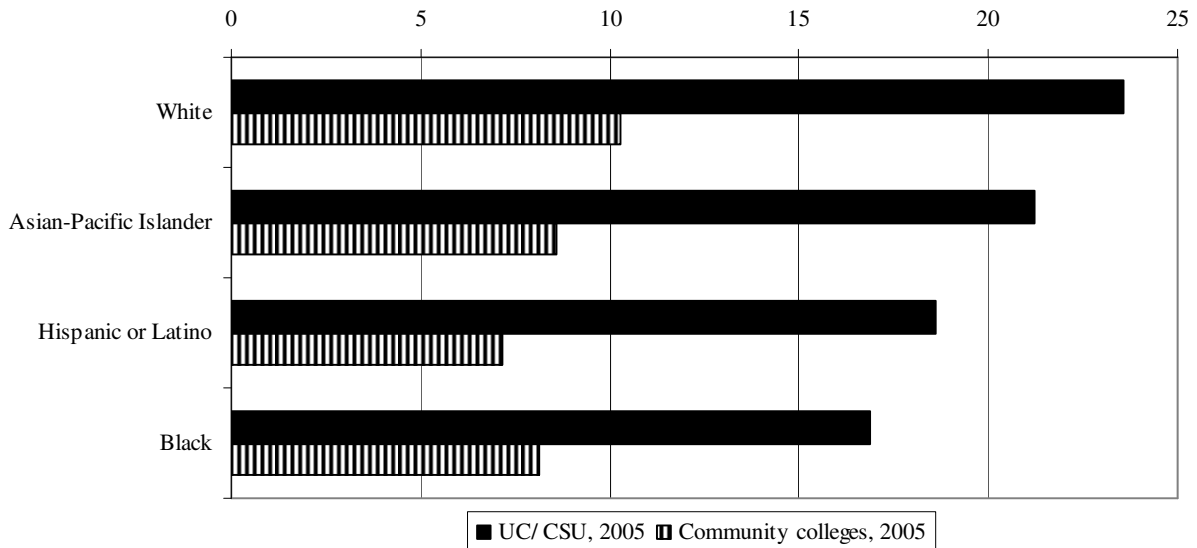


Source: Author calculations based on data from the California Postsecondary Education Commission

Key Findings: Racial/Ethnic Differences

- * The number of BA degrees awarded per 100 undergraduates enrolled is highest for white students (23.6) and lowest for black students (16.9)(see Figure 6).
- * The number of certificates and degrees awarded by community colleges per 100 undergraduates enrolled is highest for white students (10.3) and lowest for Latino students (7.1).

Figure 6: Certificates and Degrees Awarded per 100 Undergraduates Enrolled by Race/Ethnicity



Source: Author calculations based on data from the California Postsecondary Education Commission

Benefits

California received an “A” in the area of economic and social benefits to the state as the result of having well-educated residents. Not all of the benefits to the state related to higher education are generated by producing graduates in its own colleges and universities. California also

benefits from its ability to attract new residents with high levels of education from other states and countries. Due to both producing and importing college graduates, California compares well with other states in the share of the adult population with a bachelor’s degree or higher (33% among those age 25 to 65), and in the increase in personal income that results from a college education. California scores 86 on the Progressive Policy Institute’s New Economy Index, a measure of the competitiveness of state economies and the extent to which they are based on high technology and other knowledge industries. California falls behind only Massachusetts (90) on this measure. The state does not garner as many civic benefits related to education as the top-performing states; a lower share of residents vote in national elections compared to high-performing states, and voter participation has declined in recent years, a trend which may or may not be related to education levels in the voter public.

BENEFITS

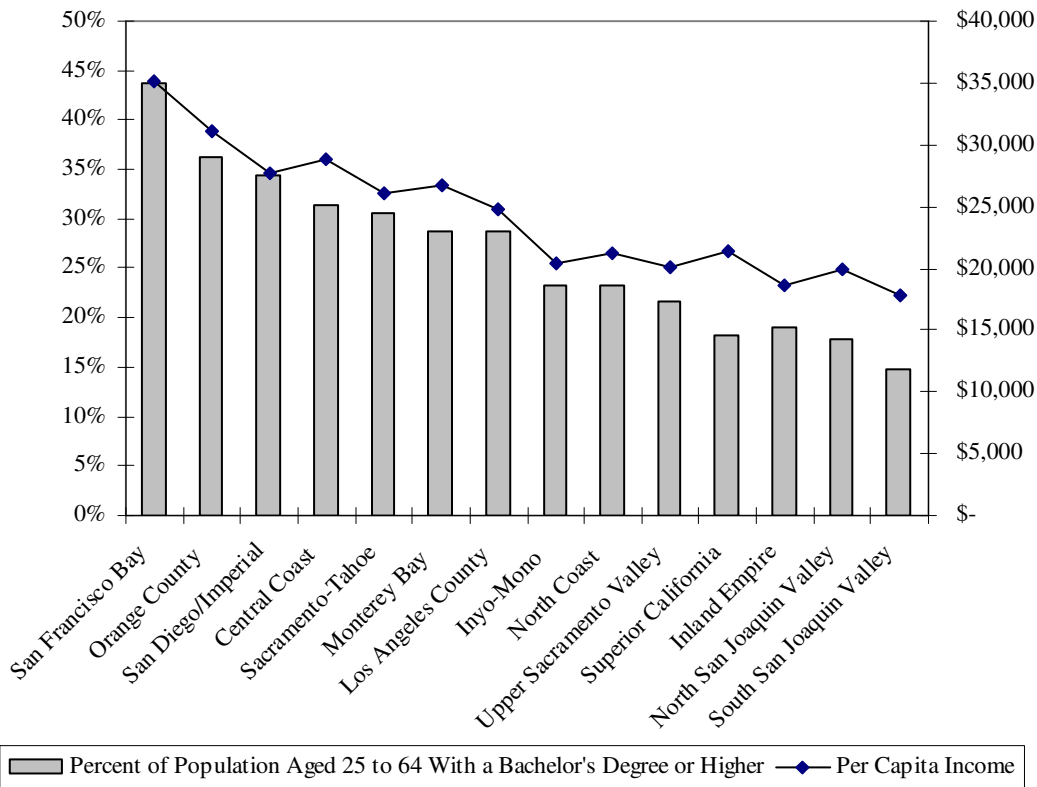
A

- + California ranks in the top quartile among states in the share of the adult population with a bachelor’s degree or higher.
- + California is among top-performing states in the economic benefits derived from college-educated residents.
- Just 42% of eligible California voters went to the polls in the 2002 and 2004 national elections, compared to 64% in the top-performing states.

Key Findings: Regional Differences²²

- * Educational attainment levels vary substantially across California's regions; 44 percent of adults in the San Francisco Bay area between the ages of 25 and 65 have at least a bachelor's degree, approximately three times the share of adults with that level of education in the South San Joaquin Valley (see Figure 7).
- * Differences in educational attainment levels may, in part, reflect differences in access to higher education. They may also be related to differences in the needs of local economies and in the ability of communities to attract highly educated residents. The coastal and urban areas of the state have more colleges and universities and may be better able to attract new residents with high levels of education.
- * Regions with higher levels of educational attainment among their populations also have higher per capita income.

Figure 7: Educational Attainment and Per Capita Income by Region



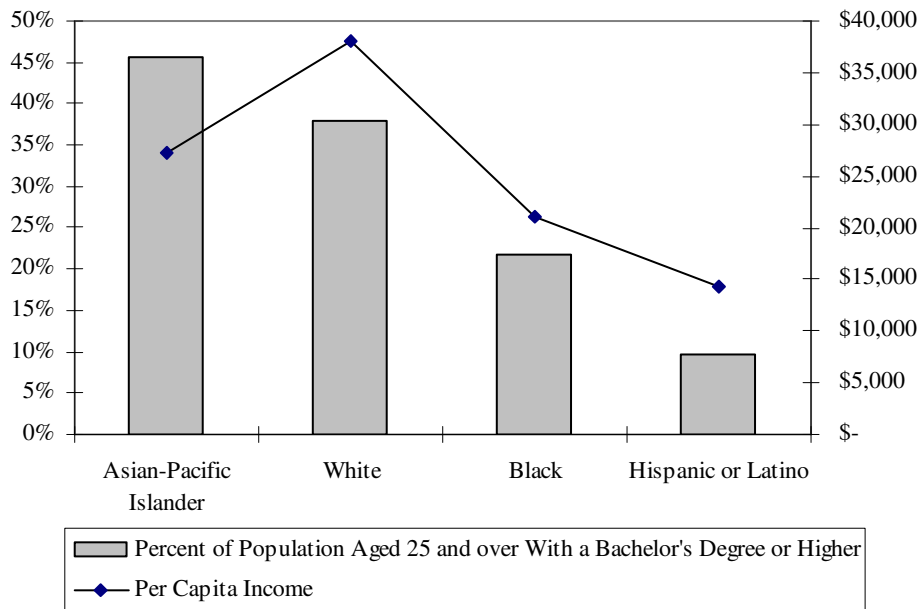
Source: Author calculations based on data from Census Bureau, American Community Survey 2005, Table C15001 (for educational attainment) and Tables B19313 and B01001 (for per capita income, in 2005 dollars), except as noted in footnote 23

²² As noted earlier, data for 18 counties are not available in the American Community Survey. For those counties, we used educational attainment data from Census 2000. For the calculation of per capita income for those counties, we used 2005 population estimates from the California Department of Finance (Table E-4), and aggregate income from Census 2000 inflated to 2005 dollars using the CPI-U index.

Key Findings: Racial/Ethnic Differences²³

- * Among adults ages 25 and over, nearly 46 percent of Asians and 38 percent of whites have at least a bachelor's degree, while comparable figures for black and Latino adults are 22 percent and 10 percent, respectively (see Figure 8). These percentages represent increases of one percentage point for Asians and whites, nearly four percentage points for blacks, and two percentage points for Latinos as compared to data in our last report from Census 2000.
- * Per capita income is generally higher among populations with higher levels of educational attainment (note that Figure 8 includes the income of the entire population, not just those with a college education).
- * There are some troubling forecasts related to the disparities in educational attainment across racial/ethnic groups. As shown in Figure 9, the Latino population is the least educated and the fastest growing in California. The state's per capita income as a share of the U.S. average has been declining as shown in Figure 10, and will fall below the U.S. average by 2020 unless gaps in educational attainment across racial/ethnic groups are narrowed. The projected percentage decline in per capita income, if the gaps remain, would be the largest in the nation over this period.²⁴

Figure 8: Educational Attainment and Per Capita Income by Race/Ethnicity

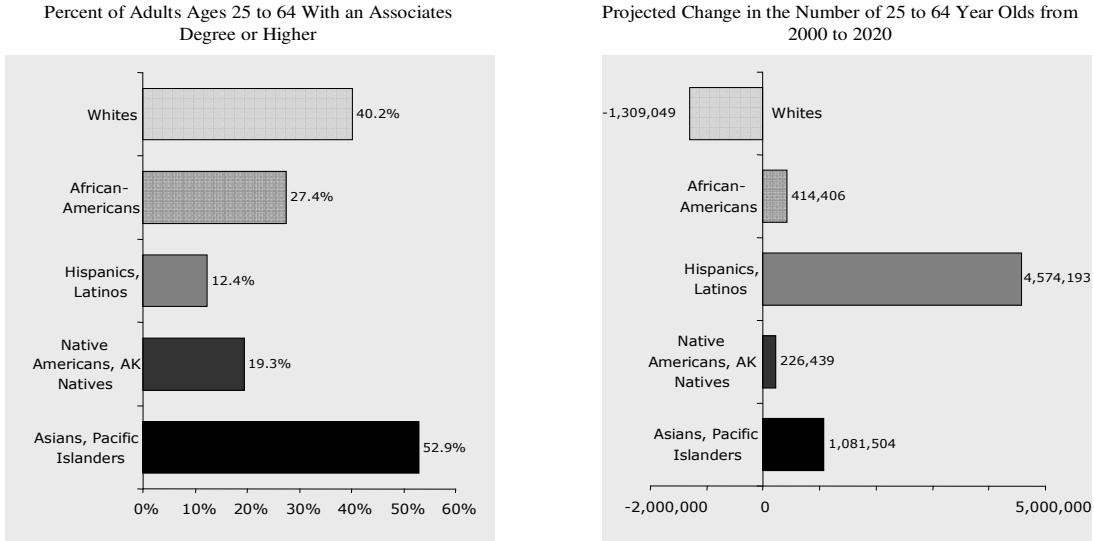


Source: Author calculations based on data from Census Bureau, American Community Survey 2005, Table C15001 (for educational attainment) and Tables B19313 and B01001 (for per capita income, in 2005 dollars)

²³ The educational attainment data by race/ethnicity in Figure 8 represents attainment for the entire population aged 25 and over, rather than the working age population (ages 25-64) used in the regional analysis in Figure 7. This is due to the way data were available in the American Community Survey.

²⁴ National Center for Public Policy and Higher Education, *Policy Alert Supplement*, November, 2005.

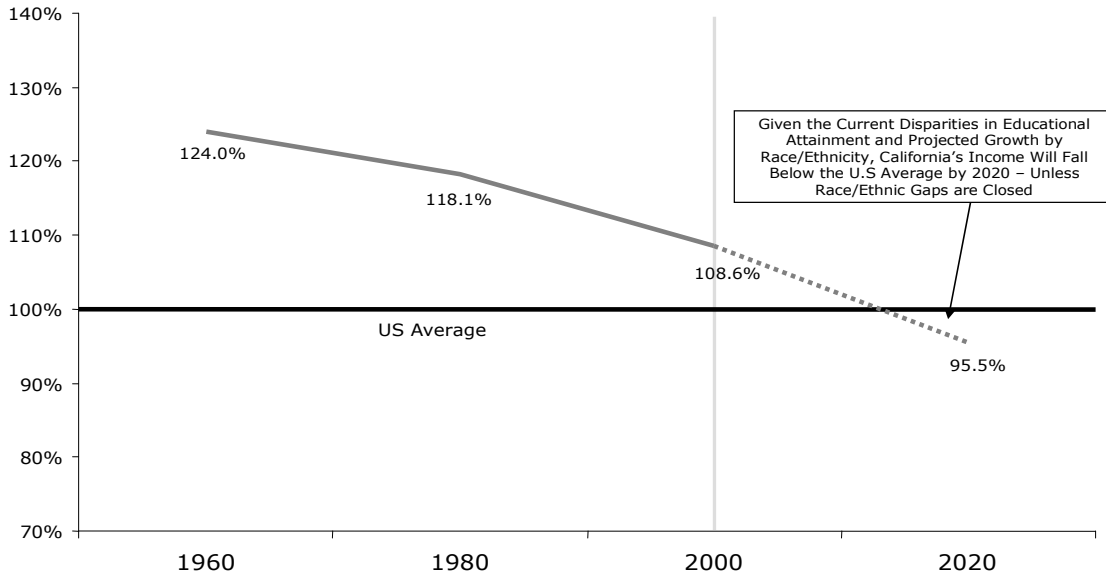
Figure 9: Race/Ethnic Gaps in Educational Attainment Bode Poorly for California's Future Economy



If Hispanics/Latinos, African-Americans, and Native Americans achieved the same levels of education as Whites by 2020, California's personal income would increase by \$101.6 Billion (in 2000 \$).

Source: US Census Bureau (2000 Census), California Department of Finance

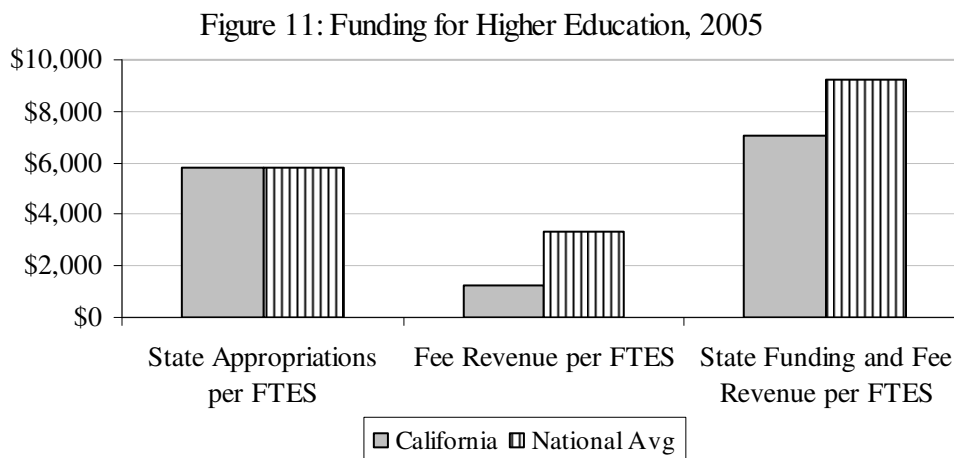
Figure 10: California's Personal Income Per Capita as a Percent of the U.S. Average and the Projected Decline in Income if Race/Ethnic Education Gaps Remain



Sources: The US Census Bureau - 2000 Decennial Census, Current Population Survey, Population Projections by Race/Ethnicity

Higher Education Finance

State and local appropriations for higher education in California amounted to \$5,844 per FTES in 2005, nearly identical to the national average of \$5,825. After adjusting for inflation,²⁵ the amount appropriated per FTES in 2005 represented a seven percent decline as compared to the \$6,103 per FTES appropriated in 2004. California collects substantially lower amounts of tuition revenue per student than the national average, as the state has among the lowest student fees in the nation in its public colleges and universities. Fee revenues per FTES were \$1,246 in 2005, less than half the national average of \$3,371. The combination of state appropriations and fee revenues resulted in total funding per FTES of \$7,090, more than \$2,000 below the national average of \$9,196. *Only one state in the nation had lower total funding per FTES.* As shown in Figure 11, the substantially lower total funding is a result of the lower revenues from fees. In California, 18 percent of total funding per FTES is generated through student fees, while the national average is 37 percent.



Source: State Higher Education Executive Officers, *State Higher Education Finance FY 2005*

The Student Pipeline

Table 4 shows the number of students successfully navigating the “student pipeline” through high school graduation, college entry and college completion.²⁶ For every 100 9th graders, the table shows the number that graduate from high school, go directly to college, return for their second year of college, and graduate within 150 percent of the program time (6 years for bachelor’s and 3 years for associate). In California, 18 of every 100 9th graders make it through this pipeline, the same as in the nation as a whole.

²⁵ We used the 3% increase in the CPI index for West Urban regions in 2005, as estimated by the Bureau of Labor Statistics.

²⁶ For a discussion of the development of the pipeline measures presented here, see Ewell, P. T., Jones, D. P. & Kelly, P. J. (2004). *Conceptualizing and Researching the Educational Pipeline*, available at www.higheredinfo.org/suppinfo/Pipeline%20Article.pdf.

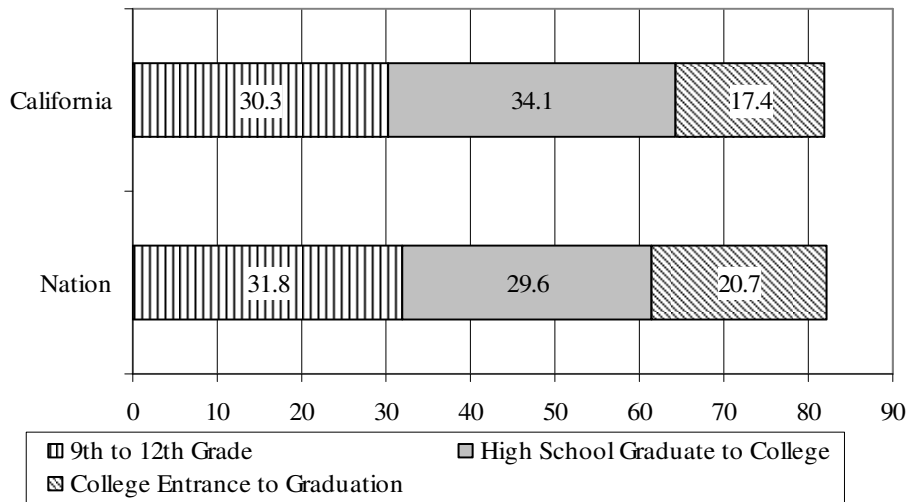
Table 4
Student Pipeline – Transition and Completion Rates from High School to College, 2002

For every 100 9th Graders:	Number that Graduate from High School	Number that Directly Enter College	Number Still Enrolled their Sophomore Year	Number Graduating within 150% Time
California	70	36	24	18
Nation	68	39	26	18

Source: National Information Center for Higher Education Policymaking and Analysis

The pipeline measure reveals the relative strengths and weaknesses of a state’s education system at each stage of transition. While California has a “yield” of 18, the same as the nation as a whole, more students are lost nationally during high school and during the college years than is the case in California (i.e., the drop-out rates are higher), while California loses more students at the point of direct entry to college (see Figure 12).

Figure 12: Of 100 9th Graders - Number Lost at Each Stage of Transition



Source: National Information Center for Higher Education Policymaking and Analysis

The pipeline measure is valuable for understanding success at moving students through the “traditional” college pipeline, but it does not include the many “non-traditional” college students who do not fit the prototype of an 18-year old high school graduate enrolling the following fall term and attending full-time and continuously. Fewer than 45 percent of college freshmen in California are 19 years old or younger, and even among these traditional-aged freshmen, one-third enroll only part-time.²⁷ Degrees awarded to older, non-traditional students are not accounted for in the pipeline measure. However, research on degree completion demonstrates

²⁷ California Postsecondary Education Commission, on-line student data, “Enrollment by Student Age Aggregated by Student Age, Student Level” and “Enrollment of First-Time Freshmen age 19 and under in Public Institutions Aggregated by Time Category,” for 2005. Excludes non-credit students.

that students are more likely to complete a degree when they enroll immediately after high school, attend full-time, work less than 20 hours per week, and enroll continuously.²⁸ To the extent that policymakers and educators can encourage these “traditional” college attendance patterns, both students and the state could benefit from the greater economic and social returns achieved through earlier college enrollment and completion.²⁹ Policies related to rigorous college preparation, financial aid, outreach and student support services could all be used to affect student attendance patterns.

The Pipeline for Underrepresented Minority Students

Another pipeline measure allows states to determine how well they are educating black and Latino students relative to other ethnic groups and other states. Table 5 shows the representation of blacks and Latinos among the 18 year-old population in 2000, as well as among that year’s high school graduates, first-time college freshmen, and recipients of any undergraduate degree or credential. *In California, nearly half of the 18 year-old population is black or Latino, but only one fourth of undergraduate certificates and degrees are awarded to black or Latino students.*

There is a decline in representation of blacks and Latinos in all 50 states, and particularly in the larger and more ethnically diverse states that face the greatest challenge in serving large numbers of students from populations historically underrepresented in higher education. *California ranks 50th on this measure, demonstrating the largest difference between the share of the 18 year-old population that is black or Latino and the share of undergraduate degrees awarded to students in those groups.*

Table 5
Change in Representation of Blacks and Latinos from High School to College Completion, 2000

	Percent of 18 year-old Population	Percent of High School Graduates	Percent of First-time Freshmen	Percent of Undergraduate Certificates/Degrees Awarded	Difference between Awards and 18 year-old Population
California	47.8%	39.9%	30.6%	25.4%	-22.4%
Nation	30.3%	24.0%	21.0%	17.0%	-13.3%

Source: National Information Center for Higher Education Policymaking and Analysis

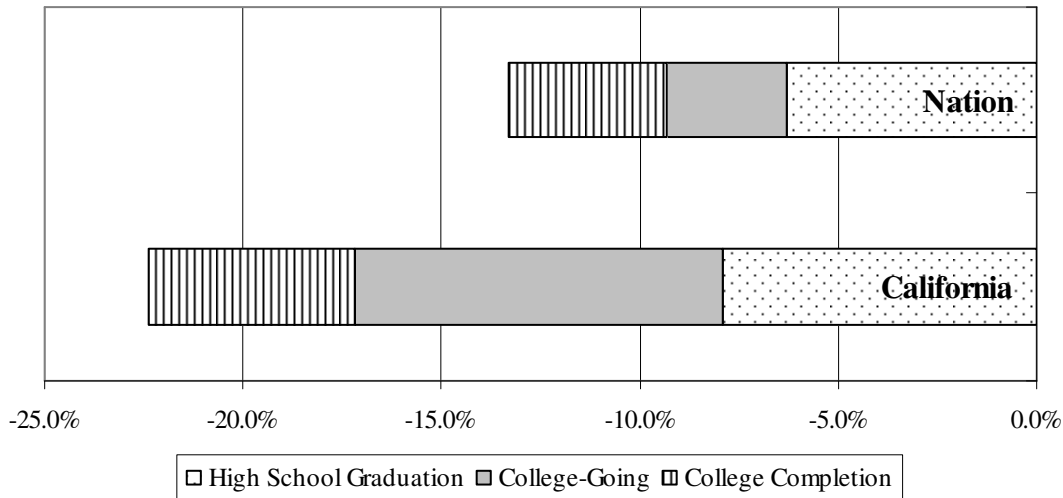
Figure 13 presents a graphical illustration of the numbers in Table 5 to show the relative magnitude of the decline in representation of blacks and Latinos along the pipeline. For example, nationally nearly half of the decline in representation (or the loss of black and Latino students from the pipeline) is attributable to the high school dropout problem, whereas high

²⁸ Adelman, C. (1999). *Answers in the toolbox: Academic intensity, attendance patterns, and bachelor’s degree attainment*. Washington, DC: US Department of Education; Ashby, C. M. (2003). *College completion: Additional efforts could help education with its completion goals*. Washington, DC: General Accounting Office; Fry, R. (2002). *Latinos in higher education: Many enroll, too few graduate*. Washington, DC: The Pew Hispanic Center.

²⁹ Taniguchi, H. (2005). The influence of age at degree completion on college wage premiums. *Research in Higher Education*, 46(8), 861-881; Monks, J. (1997). The impact of college timing on earnings. *Economics of Education Review*, 419-423.

school dropout rates account for only about one-third of the loss in California (8% out of a total drop of 22%). California loses more of the underrepresented students in the transition from high school to college. Over forty percent of the total decline in representation along the pipeline is due to lower rates of direct college going.

Figure 13: Decline in Representation of Blacks and Latinos along the Pipeline from High School to College Completion



Source: National Information Center for Higher Education Policymaking and Analysis

Conclusions

California has made moderate progress on some measures important to the state of its higher education system. However, California’s grades on the *Measuring Up* report card continue to mask some challenges facing the state. The state gets an A or B in three categories and a C in only two categories. But a careful review of available performance data reveals a number of problems that deserve attention from policymakers and educators.

- * While progress is being made, high school students are not well prepared for college.
 - Despite some improvements in the past several years, the state’s students do poorly on standardized tests of educational achievement.
 - Too few high school students are taking the rigorous math and science courses needed for success in college. Some regions have increased the share of 8th graders taking algebra quite substantially, which may lead to increases in the share of students taking higher level math courses over the next few years.

- * High participation, or “access,” does not translate into degree completion.
 - California gets one of its highest grades in the area of college participation, but the grade is largely dependent on the many adults who enroll part-time in the low-cost, open-access community colleges, most of whom do not earn a degree or certificate.
 - The chance of a 9th grader enrolling in college within four years is lower than in all but 12 other states, due both to high school drop out rates and low rates of high school graduates going directly to college.
 - Rates of enrolling in college directly after high school actually declined for all racial/ethnic groups and in most regions over the last decade. This is not encouraging given the state’s low rates of direct college entry.
 - While traditional graduation rates as presented in *Measuring Up* are high, those include only students who enroll full-time, ignoring the far lower rates of persistence and completion among part-time students, and especially among the largest number of college students in the state who begin their studies part-time in the community colleges.

- * While the state still receives the highest grade in the nation, affordability is declining.
 - Students who take out student loans incur larger debt loads compared to borrowers in other states, and California’s families must devote a higher share of their income to college costs.
 - *Measuring Up* makes particular note of the difficulty in keeping college affordable in California, where the pattern has been characterized by large fee increases in years of economic hardship, followed by stability or even reductions in fees during more prosperous times and election years.

- * Substantial disparities across regions and racial/ethnic groups persist in all performance areas.
 - Large urban areas appear to provide greater opportunities for higher education success than rural areas.
 - Black and Latino students lag behind other racial/ethnic groups in levels of college preparation, participation and completion.

- * California has reason for concern about its ability to maintain the public benefits associated with an educated populace.
 - Latinos will represent nearly 50 percent of the state’s working-age population by 2020,³⁰ making it imperative that the state reduce gaps in educational attainment to maintain economic and social health.
- * California ranks 49th among all states on total funding (state and local tax support and student fee revenue) for higher education per FTE student.

Policy Implications

Educational attainment is linked to both personal prosperity and state economic competitiveness. A number of reports have recently drawn attention to the need for California’s policymakers to attend to the connection between education and economic development, particularly given the dependence of its economy on high technology industries.³¹ While we have recommended policy attention to the following items in other reports,³² they warrant repeating if California is to realize the proven economic and social benefits of an educated populace:

- * Decreasing the racial/ethnic gaps in high school graduation, college participation, and degree completion is essential to California’s social and economic health as the state’s working-age population continues to diversify.
- * K-12 reform efforts need to be continued and expanded, with specific attention to improving proficiency in science and math, to improving the linkages between high school proficiency and college readiness, and to promoting college attendance appropriate to students’ goals and the needs of the state’s economy.
- * Although it is important to accommodate the needs of non-traditional college students, policies that promote direct, full-time enrollment after high school, if paired with policies to improve college readiness, stand to reap huge benefits for degree and certificate completion.
- * Given the variations in performance across regions, policies that encourage regional collaboration across sectors, when coupled with statewide interventions, may help address unique regional challenges. To the extent that regional variations reflect geographic barriers

³⁰ California Department of Finance (2004). *Race/ethnic population with age-sex detail, 2000-2050*. Available at http://www.dof.ca.gov/html/Demograp/DRU_datafiles/Race/RaceData_2000-2050.htm.

³¹ See, for example, Baldassare, M. & Hanak, E. (2005). *California 2025: It’s your choice*. San Francisco: Public Policy Institute of California; and Kelly, P. J. (2005). *As America becomes more diverse: The impact of state higher education inequality* (California state profile). Boulder, CO: National Center for Higher Education Management Systems.

³² See our reports at www.csus.edu/ihe/pages/publications.html, including *Facing Reality: California Needs a Statewide Agenda to Improve Higher Education*, *Variations on a Theme: Higher Education Performance in California by Region and Race*, and *Shared Solutions: A Framework for Discussing California Higher Education Finance*.

to four-year colleges, policies that encourage four-year institutions to offer upper division instruction on community college campuses could be part of the solution.

- * Attention to finance policy is critical. In particular, the state needs to address state appropriations in concert with student fee and student financial aid policy, and to acknowledge that if it is to continue its long-standing commitment to low fees, state appropriations per FTES will likely have to be increased so that *total funding* is sufficient to sustain access and quality. A commitment to affordable college opportunities should not result in under-funded colleges and universities.
- * State budget officials should develop means for projecting the costs and benefits of increased higher education appropriations on the overall state General Fund, rather than considering higher education budgets in isolation. A recent analysis concluded that the state could see a substantial return on a higher investment in postsecondary education, a return of about \$3 for every \$1 spent on public colleges and universities.³³

³³ Brady, H., Hout, M., & Stiles, J. (2005). *Return on investment: Educational choices and demographic change in California's future*. Berkeley, CA: University of California, Survey Research Center.

Appendix 1

Measuring Up: Summary of Methodology

The *Measuring Up* report cards assign grades (A, B, C, D or F) in six performance categories, including college preparation, participation, affordability, completion, public benefits and student learning. The grades are derived from a compilation of approximately 30 indicators that (1) are collected regularly by reliable, public sources, (2) are comparable across all 50 states and (3) measure state-level performance on higher education. There are several indicators in each of the performance categories, with varying weights assigned to each indicator based on the National Center's assessment of their importance to overall performance in the category. For each indicator, raw scores for each state are converted to a 100-point index scale using the top five state scores as a benchmark. For the 2004 and 2006 reports, the top five state scores from a decade ago are used as the benchmark in the affordability category; all other categories continue to use the top states in the current year. A category index score is then calculated, and grades assigned using a common grading scale (90-100 = A, 80-89 = B, etc.).

The report cards have been issued every two years since 2000, with the fourth report released in September 2006. For each report, the National Center recalculates each state's grades in the five categories, and assesses whether the states are making progress by determining whether a majority of the indicators in a category have increased.

Appendix 2

California's Performance on Indicators in *Measuring Up*

Preparation:						
	California 1992	California 2000	California 2002	California 2004	California 2006	Top States 2006
High School Completion (20%) <ul style="list-style-type: none"> • 18-to-24-year-olds with a high school credential 	78%	81%	83%	87%	87%	94%
K-12 Course Taking (35%) <ul style="list-style-type: none"> • 9th to 12th graders taking at least one upper level math course • 9th to 12th graders taking at least one upper level science course • 8th grade students taking Algebra • 12th graders taking at least one upper level math course 	29%	36%	34%	33%	48%	64%
	16%	20%	18%	18%	20%	40%
	14%	21%	33%	39%	39%	35%
	-	-	26%	26%	24%	66%
K-12 Student Achievement (35%) <ul style="list-style-type: none"> • 8th graders scoring at or above “proficient” on the NAEP: <ul style="list-style-type: none"> ○ in math ○ in reading ○ in science ○ in writing • Low-income 8th graders scoring at or above “proficient” on the NAEP in math • Number of scores in the top 20% nationally on SAT/ACT college entrance exams per 1,000 high school graduates • Number of scores that are 3 or higher on an Advanced Placement subject test per 1,000 high school juniors and seniors 	16%	17%	18%	22%	22%	38%
	22%	22%	22%	22%	21%	38%
	20%	-	15%	15%	18%	41%
	20%	20%	20%	23%	23%	41%
	5%	5%	4%	9%	10%	22%
	98	123	135	137	146	237
	104	144	169	186	190	217
Teacher Quality (10%) <ul style="list-style-type: none"> • 7th to 12th graders taught by a teacher with a major in their subject 	51%	-	-	68%	68%	81%
Participation:						
Young Adults (60%) <ul style="list-style-type: none"> • High school freshmen enrolling in college within 4 years in any state • 18- to 24-year-olds enrolling in college 	35%	43%	34%	32%	35%	53%
	32%	38%	36%	38%	40%	41%

	California 1992	California 2000	California 2002	California 2004	California 2006	Top States 2006
Working-Age Adults (40%) <ul style="list-style-type: none"> 25- to 49-year olds enrolled part-time in some type of postsecondary education[†] 	5.3%	4.3%	4.9%	5.8%	5.1%	5.1%
† Data for 2000 are for 25- to 44-year olds						
Affordability (“top states” data in this category refer to the top states in the early 1990s):						
Family Ability to Pay (50%) <ul style="list-style-type: none"> Percent of income (average of all income groups) needed to pay for college expenses minus financial aid: <ul style="list-style-type: none"> - At community colleges - At public 4-year universities - At private 4-year universities 	31%	26%	24%	25%	26%	15%
	37%	31%	28%	32%	33%	16%
	70%	73%	77%	71%	76%	32%
Strategies for Affordability (40%) <ul style="list-style-type: none"> State grant aid targeted to low-income families as a percent of federal Pell Grant aid to low-income families Share of income that poorest families need to pay for tuition at lowest priced colleges 	27%	37%	47%	48%	53%	89%
	2%	4%	3%	4%	6%	7%
Reliance on Loans (10%) <ul style="list-style-type: none"> Average loan amount that undergraduate students borrow each year[†] 	\$3,280	\$4,361	\$3,543	\$3,710	\$4,089	\$2,619
† Data for 2000 include all students, not just undergraduates						
Completion:						
Persistence (20%) <ul style="list-style-type: none"> 1st year community college students returning their 2nd year[†] Freshmen at 4-year colleges/universities returning their sophomore year 	45%	48%	48%	48%	57%	62%
	81%	83%	84%	84%	83%	82%
† Data for 2000-2004 include only full-time students, so 2006 data not directly comparable to earlier years						
Completion (80%) <ul style="list-style-type: none"> First-time, full-time students completing a BA degree within 5 yrs of high school completion First-time, full-time students completing a BA degree within 6 years of entrance Certificates, degrees and diplomas awarded at all colleges and universities per 100 undergraduate students 	-	53%	53%	-	-	-
	58%	-	60%	59%	62%	64%
	10	13	14	12	14	20

Benefits:						
	California 1992	California 2000	California 2002	California 2004	California 2006	Top States 2006
Educational Achievement (37.5%)						
• Population Aged 25 to 65 with bachelor's degree or higher	26%	29%	30%	31%	33%	37%
Economic Benefits (31.25%)						
• Increase in total personal income as a result of the percentage of the population holding a bachelor's degree	9%	11%	11%	12%	12%	12%
• Increase in total personal income as a result of the percentage of the population with some college (including an associate's degree) but not a bachelor's degree	3%	-	4%	3%	3%	3%
Civic Benefits (31.25%)						
• Residents voting in national elections	48%	44%	44%	44%	42%	64%
• Of those who itemize on federal income taxes, the percentage declaring charitable gifts	89%	89%	89%	89%	88%	91%
• Increase in volunteering rate as a result of college education	-	-	-	14%	15%	22%
Adult Skill Levels (0%)						
• Adults demonstrating high-level literacy skills:						
○ Quantitative	23%	24%	24%	24%	24%	33%
○ Prose	23%	24%	24%	25%	25%	33%
○ Document	19%	21%	21%	21%	21%	28%
† Adult skill levels for 2004 and 2006 are estimated and not used to calculate grades						

Appendix 3

List of Counties by Region*

Region	Counties in Region
North Coast	Del Norte, Humboldt, Lake, Mendocino
Superior California	Lassen, Modoc, Shasta, Siskiyou, Trinity
Upper Sacramento Valley	Butte, Colusa, Glenn, Plumas, Sierra, Tehama
Sacramento-Tahoe	Alpine, Amador, El Dorado, Nevada, Placer, Sacramento, Sutter, Yolo, Yuba
San Francisco Bay	Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma
Monterey Bay	Monterey, San Benito, Santa Cruz
North San Joaquin Valley	Calaveras, Fresno, Madera, Mariposa, Merced, San Joaquin, Stanislaus, Tuolumne
South San Joaquin Valley	Kern, Kings, Tulare
Inyo-Mono	Inyo, Mono
Central Coast	San Luis Obispo, Santa Barbara, Ventura
Los Angeles County	Los Angeles
Orange County	Orange
Inland Empire	Riverside, San Bernardino
San Diego/Imperial	Imperial, San Diego

* There are many definitions of California's "regions." This combination of counties into regions is the definition used by the California Postsecondary Education Commission.

Appendix 4

Methods for Calculating Measures by Region and by Race/Ethnicity

Following are summaries of the calculations made for each measure, with the calculations done using data by county (aggregated into regions) or by race/ethnicity.

Preparation (all measures include only public school students)

1. Share of 8th Graders at or above “Proficient” in Language Arts
 - Source: California Department of Education on-line Dataquest
 - Calculation:
Numerator: number of 8th grade students scoring “proficient” or “advanced” on the California Standards Test for English-Language Arts, 2005-06
Denominator: total number of 8th grade students taking the test, 2005-06

2. Share of 8th Graders at or above “Proficient” in Math
 - Source: California Department of Education on-line Dataquest
 - Calculation:
Numerator: number of 8th grade students scoring “proficient” or “advanced” on the California Standards Test for General Mathematics (Grades 6 & 7 Standards), 2005-06
Denominator: total number of 8th grade students taking the test, 2005-06
Notes: Performance on the General Mathematics test was used because it is the test taken by a majority of 8th grade students overall. The share of 8th graders enrolling in algebra has been increasing substantially in recent years, however, and is now nearly equal to the share tested on General Mathematics. Both Asian and white students are more likely to enroll in Algebra I and be tested on those standards. In future reports, we may change the definition of this variable to account for the changing math enrollment of the state’s 8th grade students.

3. Number of Advanced Placement (AP) Scores ≥ 3 per 1,000 11th and 12th Graders
 - Source: California Department of Education on-line Dataquest
 - Calculation:
Numerator: Number of students scoring a 3 or greater on an AP test, 2004-05
Denominator: Total enrollment in 11th and 12th grade, 2004-05
Result multiplied by 1,000

4. Number of Scores on SAT ≥ 1000 and on ACT ≥ 21 per 1,000 High School Seniors
 - Source: California Department of Education on-line Dataquest
 - Calculation:
Numerator: Number of students scoring 1000 or greater on the SAT + number of students scoring 21 or greater on the ACT, 2004-05
Denominator: Total 12th grade enrollment, 2004-05
Result multiplied by 1,000

5. Enrollment in Chemistry/Physics as a Share of 11th-12th Grade Enrollment
 - Source: California Department of Education on-line Dataquest
 - Calculation:
 - Numerator: Number of students enrolled in 1st year chemistry or 1st year physics, 2005-06
 - Denominator: Total enrollment in 11th and 12th grade, 2005-06

6. Enrollment in Advanced Math Courses as a Share of 11th-12th Grade Enrollment
 - Source: California Department of Education on-line Dataquest
 - Calculation:
 - Numerator: Number of students enrolled in Advanced Math, 2005-06
 - Denominator: Total enrollment in 11th and 12th grade, 2005-06

7. Share of 8th Graders taking Algebra
 - Source: California Department of Education on-line Dataquest
 - Calculation:
 - Numerator: Number of 8th grade students tested on the Algebra I standards in the California Standards Test, 2005-06
 - Denominator: Total enrollment in 8th grade, 2005-06

8. Share of High School Graduates Completing the A through G Curriculum
 - Source: California Department of Education on-line Dataquest
 - Calculation:
 - Numerator: Number of graduates completing A-G curriculum, 2004-05
 - Denominator: Total number of high school graduates, 2004-05

Participation

1. Percent of 18 to 24 year-olds Enrolled in College
 - Source: US Census, American Community Survey 2005, Table C14004 (for counties where ACS data were not available we used data from Census 2000 Summary File 4, Table PCT63)
 - Calculation:
 - Numerator: Number of people ages 18 to 24 enrolled in college or graduate school
 - Denominator: Total number of people ages 18-24

2. Percent of Adults Ages 25 and over Enrolled in College
 - Source: US Census, American Community Survey 2005, Table C14004 (for counties where ACS data were not available we used data from Census 2000 Summary File 4, Table PCT63)
 - Calculation:
 - Numerator: Number of people ages 25 and older enrolled in college or graduate school
 - Denominator: Total number of people ages 25 and older

3. College Going Rate

- Source: California Department of Education on-line Dataquest and California Postsecondary Education Commission on-line data
- Calculation:
Numerator: Number of first-time freshmen ages 19 and under enrolled in public institutions (program type=regular) Fall 2005 + number of first-time freshmen ages 19 and under enrolled in private institutions Fall 2003 (most recent year for private institution data, but a very small share of overall enrollment)
Denominator: Total number of high school graduates, 2004-05.
Notes: For data by region, the numerator includes freshmen age 19 and under *who graduated from high school in that region*, and the denominator includes all high school graduates from the region.

4. 9th Graders Enrolling in College within 4 Years

- Source: California Department of Education on-line Dataquest and California Postsecondary Education Commission on-line data
- Calculation:
Step 1: High School Completion Rate
Numerator: Number of high school graduates 2004-05
Denominator: Number of 9th graders in 2000-01
Step 2: College Going Rate (see calculation in #3 above)
Step 3: Multiply the high school completion rate by the college going rate

Completion

1. Number of BA Degrees Awarded per 100 Undergraduates Enrolled (UC/CSU)

- Source: California Postsecondary Education Commission on-line data
- Calculation:
Numerator: Number of bachelor's degrees awarded at UC and CSU, 2005
Denominator: Total undergraduate enrollment at UC and CSU, fall 2005
Notes: For data by region, the numerator includes number of degrees awarded to students whose high school of origin is in the region and the denominator includes all students enrolled whose high school of origin is in the region.

2. Number of Certificates and Degrees Awarded per 100 Undergraduates Enrolled (CCC)

- Source: California Postsecondary Education Commission on-line data
- Calculation:
Numerator: Total number of certificates and degrees awarded at community colleges, 2005
Denominator: Total enrollment at community colleges (excluding high school students and students already possessing a BA), 2005
Notes: The numerator includes the number of certificates/degrees awarded by community colleges located in the region and the denominator includes all students enrolled in community colleges in the region. Community colleges only gather information on the high school attended for recent high school graduates,

and not for the many older students who attend those institutions and earn certificates and degrees. However, community colleges primarily serve local students, so calculations based on the location of the college should reasonably represent the completion rates for the residents of each region.

Benefits

1. Share of the Population Aged 25-64 with a BA Degree by Region
 - Source: US Census, American Community Survey 2005, Table C15001
 - Calculation:
Numerator: Number of people ages 25 to 64 possessing a BA degree or higher
Denominator: Total population ages 25 to 64

2. Share of the Population Aged 25 and Over with a BA Degree by Race/Ethnicity
 - Source: US Census, American Community Survey 2005, Table B15002
 - Calculation:
Numerator: Number of people ages 25 and over possessing a BA degree or higher
Denominator: Total population ages 25 and over
Notes: Data for the working-age population (25-64) were not available by race/ethnicity in the ACS tables

3. Per Capita Income
 - Source: US Census, American Community Survey 2005, Tables B19313 and B01001 (for the analysis by region, income data for counties not represented in the ACS files were gathered from the 2000 Census and inflated to 2005 dollars using the CA CPI-U)
 - Calculation:
Numerator: Aggregate income
Denominator: Total population