THE IMPACT OF THE CALIFORNIA CIVIL RIGHTS INITIATIVE (CCRI) ON UNIVERSITY AND PROFESSIONAL SCHOOL ADMISSIONS AND THE IMPLICATIONS FOR THE CALIFORNIA ECONOMY

Contents

Using data from the University of California and results from previously published research on the returns to higher education, this article presents a preliminary evaluation of the impact of ending affirmative action in admissions at a large, publicly funded university. At the undergraduate level, eliminating race as a factor in the admissions process will redistribute African Americans, Mexican Americans, and Native Americans away from the most competitive campuses (UC-Berkeley, UCLA, UC-San Diego) towards the less competitive campuses in the California State University system. This redistribution will lower the returns to schooling for those affected groups and could have a negative impact on the educational environment for all students. Affirmative action will, in the short run, reduce the number of African American, Mexican American, and Native American students admitted and, in the long run, will have an adverse effect on the delivery of legal and health care services to those racial and ethnic groups.

INTRODUCTION

In 1995, The Board of Regents of the University of California (UC) voted to eliminate the use of race as a factor in undergraduate and professional school admissions in the University of California system. The Board of Regents' action preempts the recently passed California Civil Rights Initiative(n1) (Proposition 209) and will go into effect regardless of court rulings on the constitutionality of that proposition. If other states mimic the actions of the UC Board of Regents or pass CCRI clones, race based affirmative action could soon be a thing of the past in publicly funded colleges and universities.

At the heart of the Board of Regents' decision is a debate over the allocation of scarce resources (spaces in the freshman class(n2)) among competing uses (the population of eligible California high school graduates) so as to maximize society's economic well-being. The answer offered by neoclassical economic theory is fairly straightforward--allocate spaces such that the marginal social benefit derived from the last freshman enrolled just equals the marginal social cost of enrolling that freshman. Less straightforward is how to evaluate those marginal social costs and benefits and whether race is relevant to this calculation. If it is relevant, then economic efficiency dictates its consideration in the admissions process.

This article offers a preliminary evaluation of the relationship between race and the marginal social cost and benefit of a UC education. It investigates the impact of ending changes in admissions policies on the private returns to individuals, on the educational environment, and on society as a whole. The study

relies on data collected by the University of California and on previously published research. The principal findings are summarized below.

The impact of the Board of Regents' decision on racial diversity in the University of California's undergraduate population will depend on the new admissions criteria adopted by the individual campuses. Before the Board of Regents' decision, campuses used race as a supplemental factor in the admissions decision. Post the Board of Regents' decision, campuses are likely to replace race with some measure of socioeconomic disadvantage. Simulation studies suggest that the numbers of African American, Mexican American and Native American students will decrease--particularly at the most competitive campuses. The number of Asian American students, white students, Filipino students, and Latino students will increase. The magnitude of these effects will depend on the particular measure of socioeconomic disadvantage used by the campus. In addition, a change in admissions policy is likely to change the racial composition of the applicant pool and the yield rates.

The impact of the Board of Regents' decision will depend on whether its primary impact is a decline overall in the number of African American, Mexican American, and Native American students attending four-year colleges or universities or whether its primary impact is a redistribution of these students away from the most competitive UC campuses towards other UC campuses, state campuses, or private colleges.

If the change in admissions policies reduces the numbers of African Americans and Mexican Americans attending four-year colleges and universities, there will be a loss to society equal to the difference in the expected marginal benefit of enrollment for these groups and for white and Asian students. Most empirical studies have found that the return to college is higher for African Americans than for whites. There is too little research on the returns to college for Hispanics and Asian Americans to draw a conclusion.

A probable scenario is that African American, Mexican American and Native American students will attend less selective four-year colleges and universities. For a black student with a high SAT score, receiving a B.A. degree from a selective college increases yearly earnings by $769 for every 100 point increase in the median SAT of the institution. In contrast, a white student gains only $253 for the same 100 point increase.

The primary social cost of a change in undergraduate admissions policies will be the loss of racial and ethnic diversity on campuses. There is a consensus that racial diversity of the student body enhances the educational experience of all students, both at the graduate and at the undergraduate level; however, there is very little empirical evidence to support this hypothesis. In addition, society could lose the spillover benefits associated with increasing the number of college graduates in minority communities where they are currently underrepresented.

Elimination of race and ethnicity as considerations in the admissions process will not reduce direct expenditures on admissions or academic support. Indeed, expenditures for some activities could increase.

In response to the Board of Regents' decision, University of California law and medical schools are revising admissions policies to eliminate reference to race or ethnicity and to increase the weight given to nonnumerical factors in the admissions process. There are likely to be fewer African American, Mexican American, and Native American students admitted to law and medical school under the new admissions policies.

There is no evidence of differences in returns to medical and law degrees by race. The private returns to a legal education may be slightly higher for Asian Americans and whites because they have a higher rate of degree completion and of passing the bar examinations.

The social returns to a medical education are probably higher for African Americans and Mexican Americans. Medical educators argue that minority students enrich the educational environment, improving the cultural competence of their classmates. Minority medical students are more likely to

volunteer to educate high school and college students about science and medicine--increasing the flow of students of all races into the educational pipeline. A rich body of research documents the link between the training of minority doctors and the delivery of health care services to minority communities.

Section two outlines the arguments for and against race-based affirmative action in university admissions. Section three describes the impact of eliminating race in undergraduate admissions in the UC system. Section four describes the impact of eliminating race in law and medical school admissions. Section five offers a final appraisal.

THE DEBATE OVER RACE-BASED AFFIRMATIVE ACTION IN UNIVERSITY ADMISSIONS: A SUMMARY

African Americans and Hispanics are underrepresented among students enrolled in post-secondary institutions nationally and in the state of California. Table 1 describes the distribution of post-secondary enrollments by race, ethnicity and institutional type. African Americans represent 7.4 percent, of the state's population in 1990 and 6.6 percent of the state's post-secondary enrollment. Hispanics represent 25.8 percent of the state's population and 12.9 percent of the post-secondary enrollment. Furthermore, African American and Hispanic enrollment in post-secondary educational institutions is concentrated in two-year colleges and vocational programs. African Americans represent less than 6 percent of enrollment in four-year colleges and universities; Hispanics less than 11 percent.

The reasons for this underrepresentation are complex.(n3) One important factor is the racial disparity in elementary and secondary education. A smaller percentage of African Americans and Hispanics graduate from high school. In 1994, 12.6 percent of black young adults aged 16-24 and 30 percent of similarly aged Hispanics were not enrolled in high school and had not completed the degree(n4) (US Dept. of Education, NCES, 1996b). The comparable statistic for whites was 7.7 percent. A smaller percentage of African Americans and Hispanics are enrolled in academic or college preparatory programs (US Dept. of Education, NCES, 1996a). Relatively smaller numbers of African Americans and Hispanics take the college entrance examinations (Jaynes, 1989), and fewer file applications to post-secondary institutions (US Dept. of Education, NCES, 1996a).

Those who do take the college entrance examinations have, on average, lower scores than their white and Asian counterparts. A recent study by the National Center for Education Statistics (Owings et al., 1995) found that less than 1 percent of black and less than 3 percent of Hispanic 1992 college-bound high school graduates met all of the requirements for admission to a selective four-year college or university.(n5) In comparison, nearly 9 percent of Asian Americans and 7 percent of whites met these requirements.

For Hispanics, differences in aspirations also contribute to their underrepresentation in post-secondary institutions. A survey of eighth graders in 1988 found that only 54.8 percent of Hispanics expected to obtain a B.A. degree or higher compared with 72.2 percent of Asian/ Pacific Islanders; 64.3 percent of blacks, and 67.6 percent of whites (US Dept. of Education, NCES, 1996a).

Finally, experts cite the price of higher education as a major factor contributing to racial differences in participation (Wilson, 1989; Jaynes, 1989; Justiz, 1994). Financial aid funds, particularly grants, have not kept pace with increases in tuition, room and board. This increase in the student's share of the cost of post-secondary education particularly discourages African American and Hispanic students, whose families have fewer resources to finance schooling.

Whatever the causes, the relative scarcity of college educated workers in these communities has contributed to racial inequality in the past, and it is likely to become a more significant factor in the future. June O'Neill finds that changes in wage structure, primarily the increased monetary returns to skill, contributed to a wider gap between the earnings of black and white men (O'Neill, 1990). Differences in educational attainment also explain a larger percentage of the earnings between Hispanic and white men (Reimers, 1985). Differences in educational attainment were particularly important in explaining the wage differences between Mexican American and white men. These differences in

educational attainment could become even more important in the future, as technological changes and the globalization of the economy increase the demand for college graduates.

One of the primary goals of affirmative action in university admissions is to counteract this trend. Supporters of affirmative action in university admissions argue that it can promote general welfare by reducing group disparities and encouraging the development of individual talent. Affirmative action programs can signal to underrepresented minorities (URM's) that they are welcome in post-secondary institutions and can thus increase aspirations and application rates. Affirmative action programs help identify students who have the ability and potential to succeed in college despite a less than stellar performance on standardized tests.

Affirmative action also provides a method to enforce nondiscrimination in the admissions process. "[E]ven when invidious discriminatory standards are abandoned there remain subtle and tenacious forms of discrimination and structural factors which limit the application of new norms of equality" (Galanter, 1992). The university admissions process is affected both directly and indirectly by the subjective judgments of individuals--directly through the evaluations of secondary school teachers and indirectly, through the assignment of students to college preparatory courses.(n6) Since the admissions process involves subjective judgments, it would be difficult to evaluate whether the process discriminates against a particular group without reference to specific outcomes.

Proponents of affirmative action assert that racial and ethnic diversity in the student body improves the quality of education received by all students. "Students and faculty themselves benefit from a diverse student body. In the world of ideas, the greatest source of intellectual growth comes from the challenge to one's assumptions, perspectives and ways of thinking. Exposure to peers with varying backgrounds is an important source of this kind of challenge" (University of California, Office of the President, 1995a). Finally, support for affirmative action programs can be rationalized as a form of reparations for discriminatory treatment in the past. Patterns of residential segregation coupled with labor market discrimination limit the quality of elementary and secondary education for certain groups. School segregation and the legacy of Jim Crow laws restrict the access of parents to higher education and this, in turn, has an impact on the probability of success for their children(n7) (Hearn, 1991). Furthermore, Loury has shown that if parental resources constrain the decision making about education, the resulting distribution of educational resources will be inefficient (Loury, 1977).

Critics of affirmative action offer a different interpretation of its effects. They argue that affirmative action converts a race neutral decision making process into one that discriminates against whites and Asian Americans. Some African American and Hispanic students are admitted with lower grade point averages and lower scores on standardized tests than those of white and Asian Americans denied admission. Affirmative action, according to its critics, diverts resources from students likely to excel in college to those likely to fail.

In addition, critics of affirmative action fear that it will reduce the quality of education for all students by watering down the curriculum. "When poor preparation and weak motivation are coupled with government policies to promote--indeed, almost force educational participation, even if more students were formally enrolled, the quality of learning might deteriorate" (OECD report as cited by Pickens, 1989).

Finally, critics of affirmative action argue that the policy hurts the minority groups it is intended to help. The potential harmful effects include reduced incentives for academic achievement, a mismatch of students with institutions, and stigmatization of minority students. In an American Economic Review (1993) article, Stephen Coates and Glenn Loury set forth the theoretical argument that affirmative action reduces incentives for academic achievement. Coates and Loury argue that if entry requirements are lower for some groups of students, they will have less incentive to work hard in school and will perform less well on entrance examinations.(n8) Datcher-Loury and Garman (1995) describe the problem of academic mismatch. This is the often-voiced concern that affirmative action programs divert

minority students to competitive institutions where they have lower levels of academic achievement. Datcher-Loury and Garman demonstrate that the earnings premium associated with attending a selective college can be offset by a low grade point average and a low probability of completion.
Several prominent African Americans have argued that affirmative action stigmatizes its beneficiaries. Carol M. Swain, an associate professor of politics and public affairs at the Woodrow Wilson School at Princeton University, writes, "Besides encouraging many to play the victim, affirmative action policy telegraphs an equally harmful subliminal message to its beneficiaries. It says in effect that you, as a woman or minority, are less capable than a white male and will need special preference in order to compete successfully in a world dominated by white males.... Affirmative action sends a message to whites that minorities and women need this help, contributing to white denigration of minorities and women" (Swain, 1995).

THE IMPACT OF ELIMINATING RACE-BASED AFFIRMATIVE ACTION IN UNDERGRADUATE ADMISSIONS

Eliminating race as a factor in the undergraduate admissions process will reduce the number of African Americans, Mexican Americans, and Native Americans at the most competitive University of California campuses. However, it is unlikely to have a dramatic impact on the number of African American, Mexican American and Native American college graduates. A probable scenario is that these students will attend less selective four-year colleges and universities, while Asian Americans and whites will attend more selective schools. Since the estimated returns to college selectivity are greater for African Americans than for whites, ceteris paribus, this redistribution of students could have a small negative impact overall on society's economic well-being. The primary social cost of a change in undergraduate admissions policies will be the loss of racial and ethnic diversity of campuses.

The Use of Race in Admissions at UC Campuses

The California Master Plan for Higher Education dictates the basic eligibility requirements for University of California students. Eligibility is limited to the top 12.5 percent of graduating high school seniors and is determined by scores on standardized tests and by high school grade point average (GPA).(n9) The lower the GPA, the higher the Scholastic Aptitude Examination (SAT) required for admission. Students outside this eligibility range have the option of attending a California State University (CSU) campus if they fall within the top third of California graduating seniors, of attending a community college, or of attending one of the private degree granting institutions.

In principle, there is space available for all UC eligible students within the UC system. However, as Figure 1 illustrates, some campuses are more popular than others. UC Berkeley, UC Los Angeles (UCLA), and, to a lesser extent, UC San Diego (UCSD) have many more eligible applicants than there are spaces in the first year classes. These campuses must apply criteria beyond the UC eligibility standards to select their entering classes.

Not all campuses apply the same criteria, but there are some common elements. In general, the first 50 60 percent of the spaces were allocated purely on academic merit--high school GPA, scores on the SAT, achievement test scores, and the number of honors or advanced placement courses taken in high school. The remaining applicants compete on the basis of a broader range of criteria, including athletic or artistic talent, unusual leadership ability, socioeconomic disadvantage or, prior to the Board of Regents' decision, membership in an underrepresented minority group. As Table 2 illustrates, under the old system, acceptance rates were higher for non-Asian minorities at every campus.(n10) With academic credentials held constant, an African American, Hispanic or Native American had a better chance of admission than did a white or Asian American. At the most competitive campuses, the percentages of African Americans, Hispanics and Native Americans admitted purely on academic merit were smaller than those for Asians and whites. For example, in UCLA's entering class of 1994, 77 of 663 African Americans (11.6 percent) were admitted on the basis of academic criteria alone. In comparison, 6,801 of the 9,862 students admitted in UCLA's freshman class (68.9 percent) were admitted on the

basis of academic criteria alone (University of California, Los Angeles, "Affirmative Action and Freshman Admission").

Despite the higher acceptance rates for African American, Hispanic and Native American students, they continued to be underrepresented in freshman classes. This reflects not only their underrepresentation in the pool of eligible high school graduates(n11) but also differences in yield rates. At the most competitive campuses, yield rates were lower for African American, Chicano and Latino students than for white and Asian students. Furthermore, yield rates appear to be particularly low for the most academically talented African American students. In 1994, 17 percent of the admitted students with the highest academic rank chose to attend UCLA. For African American students in this category, the yield was only 10 percent (University of California, Los Angeles, "Affirmative Action and Freshman Admissions"; and author's calculations). This disparity in yield rates has important implications for comparisons of the academic credentials of admitted students. Even if acceptance rates were identical for students with identical academic credentials, the URM's enrolled in the freshman class would tend to have lower high school GPA's and SAT scores than would non-URM's.

Following the Board of Regents' decision, UC campuses will no longer be able to use race as a plus factor in the admissions process. Several alternatives to the current admissions procedure have been proposed, including introducing a lottery system, replacing race and ethnicity with socioeconomic disadvantage, and admissions purely on the basis of academic merit. Of these three, the option most consistent with the educational philosophy of the Undergraduate Task Force on Admissions (University of California, 1995) and with the California Master Plan is to substitute socioeconomic disadvantage for race in the admissions process; many critics of affirmative action programs support this substitution.(n12)

UC San Diego is the first campus to publish its revised admissions policy (University of California, San Diego, 1996). The revisions proposed by UC San Diego eliminates race as a supplemental factor in the admissions decision, but adds a new supplemental factor, "academic promise and potential in a limited educational and social environment" (APCV).(n13) The new policy also increases weight given to leadership, community service and special awards, talents or interests.

The Office of the President has conducted a simulation analysis of the potential impact of a change in admissions criteria on enrollments for three UC campuses--Berkeley, UC San Diego and UC Santa Cruz (University of California, Office of the President, 1995a). This simulation analysis is based on the characteristics of the 1994 applicant pool. The results are summarized in Table 3. The analysis assumes no change in applicant pool and no change in yield rates as a result of this change in policy. Substituting socioeconomic disadvantage, defined by parental income and levels of parental education, for race in the admissions process will clearly change the racial and ethnic composition of students in the freshman class. The numbers of African American, Hispanic and Native American students will decline, particularly at the most competitive campuses. The number of Asian American students will increase. The number of white students enrolled as new freshman will also increase, but only slightly.

A simulation analysis, conducted by the UC San Diego admissions office, gives similar results. According to the simulation, the freshman class admitted in the spring of 1996 would have had fewer African Americans, Mexican Americans, and Native Americans if the revised admissions policy had been in place. It would have had a greater number of Asian, Filipino, Latino and white students. The results of this simulation are also reported in Table 3.

The Office of the President's simulation assumes that applications rates and yield rates do not change in response to a change in admissions policy. This is unlikely for several reasons. As noted in the appendix to the study, the change in policy could change the pattern of applications. Admission officers have voiced the concern that the publicity surrounding the Board of Regents' decision and the CCRI will discourage URM's from applying to UC campuses. The change in policy is also likely to change yield rates. Non-URM's, particularly Asian students, cite the perceived unfairness of admissions policies

toward Asian students as one reason they choose not to attend the University of California (University of California, Office of the President, 1991). In a survey of nonmatriculating students conducted in 1990, 22.4 percent of Asian students, 35.4 percent of Filipino students, and 18.6 percent of white students cited not being admitted to their preferred UC campus as a factor in their decision not to attend UC. In comparison, only 10 percent of Mexican American students and 3.4 percent of African American students cited this as a factor (University of California, Office of the President, 1991). An increase in acceptance rates for Asian and white students could increase their yield rates. As acceptance rates increase for Asians, Filipinos and whites at UCLA and Berkeley, the yield rates at less popular campuses will decrease. In contrast, as fewer African Americans and Mexican Americans are accepted at UC Berkeley, more will accept offers of admission at the less competitive campuses. Yield rates are likely to increase for these groups at San Diego, Davis, Irvine, Santa Barbara, Santa Cruz, and Riverside.

An increase in yield rates could offset the predicted decrease in the number of African Americans and Mexican Americans admitted to the less competitive campuses such that the total enrollments of these groups increase. The percentage of the freshman class that are URM's at less competitive campuses could increase.

Measuring the Costs and Benefits of a Change in Admissions Policies

Elimination of race as a criteria in the admissions decision is likely to reduce the number of African Americans, Mexican Americans and Native Americans enrolled in the University of California system and to increase the number of Asian Americans and whites. A cost-benefit analysis of this change in policy requires a comparison of the benefits of attendance at a UC campus for one group relative to the other. To facilitate this discussion, applicants admitted under race based affirmative action programs who would not be admitted with socioeconomic status substituted for race will be represented by the hypothetical Mr. Smith. Applicants rejected under race based affirmative action who would be admitted under the proposed new criteria will be represented by the hypothetical Mr. Jenkins.

Although a change in admissions policy will affect Mr. Smith and Mr. Jenkins, it may not have any impact on society's well-being. With equal weight given to Mr. Smith and Mr. Jenkins, no spillover effects, equal marginal cost of schooling, and equal marginal benefit of attendance, society would be indifferent between the new policy and the old. There would be no loss in efficiency associated with substituting Mr. Jenkins for Mr. Smith. Resources are simply redistributed. On the other hand, if the marginal benefit of enrollment is higher for Mr. Smith than for Mr. Jenkins, society will lose from the change in policy.

The marginal benefit of enrollment for Mr. Smith is the difference between his valuation of attending that UC campus and his next best alternative. Rejection from a UC campus could lead to one of several possible scenarios for Mr. Smith: 1) he does not attend a post-secondary educational institution; 2) he attends a post-secondary institution other than a four-year college or university (a vocational program or a two-year community college); or 3) Mr. Smith attends a four-year college or university other than that UC campus, including possibly another UC campus.

Each scenario will affect outcomes for Mr. Smith, including his probability of completing the B.A. degree, his probability of attending graduate or professional school and, consequently, his post-baccalaureate earnings. If he does not attend a college or university, or if he attends a two-year college, Mr. Smith is likely to have lower lifetime earnings than if he enrolls in a four year college or university. Attending a more selective college, other things being equal, increases post-baccalaureate earnings (Datcher-Loury and Garman, 1995). However, the probability of degree completion could be lower at the more selective college and, thus, attending a less selective college could increase expected earnings. In addition, a change in admissions policy could eliminate some of the stigma associated with affirmative action.

Mr. Smith loses the most from a change in admissions policy if he fails to enroll in any post-secondary institution. Table 4 reports earnings by race, gender, and educational attainment in California, based on the 1990 census. For an African American male, a college degree increases the present discounted value

of lifetime earnings by $360,630; for a female, by $303,563. For a Hispanic male, a college degree increases earnings by $379,561; for a female, by $311,204.(n14)

Attendance at a two-year college or vocational program, instead of a four-year college or university, also affects earnings. If Mr. Smith ends his education short of the B.A. degree, he will experience a reduction in lifetime earnings of $54,165 if he is an African American male, and $51,496 if he is Hispanic. Ms. Smith loses $37,106 if she is African American, and $42,617 if she is Hispanic. It is possible that Mr. Smith will transfer to a four-year college or university. Starting at a two-year college or university could place him at a disadvantage as compared with a four-year college, but the evidence is mixed (Pascarella and Terenzini, 1991).

Even if Mr. Smith attends a four-year college or university, it is likely that that college will be less selective than the UC campus from which he was rejected.(n15, n16) Most of the research from both sociology and economics suggests that college selectivity has an effect on outcomes, including earnings (Wales, 1972; Hearn, 1984; Datcher-Loury and Garman, 1995; James, et al., 1989). Pascarella et al. conclude that, controlling for other factors, college quality explains on average between 1 and 1.5 percent of differences in individual earnings (Pascarella and Terenzini, 1991). The selectivity of a college enhances educational attainment and that, in turn, affects earnings. College selectivity affects prestige of graduate school attended. UC medical schools give more weight to the same undergraduate grade from a more competitive school than from a less competitive school. Grade point average is lowered (or increased) to reflect difference in average MCAT scores across the colleges. GPA is not lowered if average test score is high. UC law schools make similar adjustments.

Datcher-Loury and Garman (1995) control for differences in individual characteristics, family background and grade point average in their analysis of the effect of college selectivity on earnings. The magnitude of the effect of selectivity on earnings depends on the academic aptitude of the individual student. For an African American male college graduate with a composite SAT score greater than 850, attending a college with a median SAT score of 1,000 points rather than 900 points increases his yearly earnings by $769.(n17) This translates into an increase in the present discounted value of lifetime earnings of $4,791. For an African American male with an SAT score of less than 850 but greater than 700, the increase in yearly earnings is only $72. College selectivity has a positive effect on earnings even for those who fail to complete the degree. For an African American male college dropout with a composite SAT score greater than 850, attending a college with a median SAT score of 1,000 points rather than 900 points increases his yearly earnings by $591 a year or the present discounted value of lifetime earnings by $3,682.

On the other hand, attending a more selective college could have negative consequences for Mr. Smith. Attending a more selective institution reduces the probability of graduation and reduces grade point average. Datcher-Loury and Garman (1995) find that for an African American male with a composite SAT score of greater than 850 the difference in graduation rates associated with attendance at a more selective college is 25 percent. The more selective college has a median composite SAT score of 1,000 points rather than 900 points. The difference is 17 percent for the African American male with a composite SAT between 700 and 850. Attending the more selective college reduces GPA by .212 points for the African American male with a composite SAT greater than 850, and by .320 points for the African American male with a composite SAT greater than 700 but less than 850. For the African American male with a composite SAT greater than 850, the increase in earnings associated with attending the more selective college outweighs the earnings reduction associated with a lower probability of graduation or a lower GPA. For the African American male with SAT scores less than 850, the earnings enhancing advantages of attending a more selective college could be offset by the earnings loss associated with a lower probability of graduation. For an African American male with a composite SAT of between 700 and 850, failing to graduate results in an earnings loss of $107.

The bottom line is that the problem of academic mismatch is not likely to be significant for URM's affected by the change in admissions policies. With a few exceptions, these students meet the criteria for UC eligibility and will generally have a composite SAT above the 850 cut-off used by Datcher-Loury and Garman.

Finally, elimination of race and ethnicity as a factor in the admissions decision should benefit Mr. Smith by eliminating the negative stereotypes created by affirmative action programs. Studies by Heilman et al. (1992) in an employment setting and by Garcia et al. (1981) in a university setting confirm that affirmative action programs can stigmatize the perceived beneficiaries. However, if the costs associated with this stigma exceeded the perceived benefits of attending a UC campus, Mr. Smith would either not apply to the UC system or would reject an offer of admission. Herbert Nickens and Jordan Cohen address the problem of affirmative action and the stigmatization of minority achievement as follows:

. . . [A]ccounts of early minority pioneers . . . make it clear that they suffered from the hostility of some of their classmates and teachers, and all too often suffered alone. We think that most of those pioneers, and their contemporary counterparts, would regard questions about their legitimacy to be there as a small price to pay for increasing opportunities available to minority students, and for increasing the number of young Americans who are educated on campuses that are racially and ethnically diverse. (1996)

Furthermore, a change in admissions policies would not eliminate racial prejudice that exists independent of affirmative action programs. Indeed, if there are few African Americans and Hispanics on college campuses, there will be little opportunity to undermine the racial stereotypes students bring with them from home.

In summary, if Mr. Smith is an African American male, his marginal cost of rejection, measured in lost earnings capacity, ranges from $4,791 (if he attends a less selective four-year college) to over $360,000 (if he does not attend post-secondary institution). There is a big gap between these two numbers. A more accurate evaluation of the marginal cost will require an assessment of the probabilities of each scenario. Unfortunately, the information available to predict which scenario is most likely for Mr. Smith is quite limited. Colleges and universities devote resources to analyze what happens to students who were admitted, but chose not to attend--nonmatriculants. These institutions have little interest in what happens to the students who were rejected in the admissions process.

The available data suggests that minority students rejected from their preferred UC campus will attend college elsewhere. For starters, Mr. Smith is UC eligible. If he is rejected from the most competitive UC campus, he is likely to be accepted at a less competitive UC campus, at a California State University campus, or to a less selective private institution. The latter option could increase the private costs to Mr. Smith of post-secondary education. Research on the decision to attend a two-year college or university suggests that these programs do not divert students intent on pursuit of a B.A. degree (Rouse, 1994). However, there is some evidence in the nonmatriculation study conducted by UC Riverside that UC campuses lose minority students to community colleges for financial reasons. Additional information on the probabilities of the alternative scenarios is available from the High School and Beyond survey conducted by the National Center for Education Statistics. This is a longitudinal study of students who were seniors in 1980. Table 5 reports the degree attainment of these students by acceptance status. The differences in educational attainment are trivial. Indeed, students not accepted at their first choice institution were slightly more likely to have completed the B.A. degree.

The benefits of a change in admissions policy for Mr. Jenkins essentially mirror the costs for Mr. Smith. Mr. Jenkins is accepted at his preferred UC campus under the new policy when he was rejected under the old. If, under the old policy, Mr. Jenkins did not attend a four-year college or university, he will, under the new policy, enjoy increased earnings capacity. If, under the old policy, Mr. Jenkins attended a less selective four year college or university, he will, under the new policy, enjoy the increase in earnings

associated with college selectivity. From society's perspective, the key question is whether the marginal benefit to Mr. Jenkins exceeds the marginal cost to Mr. Smith from a change in policy.

There are three plausible reasons to expect differences in the returns to college by race and ethnicity: 1) a college education functions in part as a signal of worker quality. To the extent that employers have less information about minority workers, a college degree could have a bigger impact on the probability of employment or on salary for minority workers than for white workers; 2) college is an important source of contacts and information about jobs. Students from communities where job networks are weak get a bigger boost from access to this information than do students who are already plugged in to a job network; and 3) racial discrimination may have a smaller impact on the earnings of college educated workers than on the earnings of those with only a high school education.

Returning to Table 4, in raw numbers, the addition to lifetime earnings associated with a college degree is greatest for white, non-Hispanic men. However, a comparison of the raw earnings data is misleading for several reasons. Empirical research on the determinants of earnings has found that roughly 21 percent of the earnings differences between high school graduates and those who have attended college are due to differences in ability. A more appropriate comparison would be to examine the returns to earnings holding ability constant. Women historically work fewer hours than men. Reliance on earnings alone will understate the value of a college education to women (Hansen and Weisbrod, 1969). Finally, earnings differences across demographic groups could reflect the influence of labor market discrimination, not differences in marginal productivity. Recent studies suggest that discrimination explains roughly 10 percent of the earnings differences between African American and white males (O'Neill, 1990).

There is empirical evidence that, controlling for individual characteristics, the impact of a B.A. degree is greater for African Americans than for whites. From a thorough survey of the available evidence, Pascarella et al. conclude:

. . . [I]t would appear that in terms of occupational status, nonwhite or black men derive somewhat greater relative benefits from a bachelor's degree than do white men. The evidence on earnings is less consistent but suggests that since about 1970 nonwhite or black men may also be receiving somewhat greater relative benefits from a bachelor's degree than are their white counterparts. . . . Of all groups, nonwhite women appear to receive the greatest economic return on investment from a bachelor's degree. . . . (Pascarella and Terenzini, 1991)

Hoffman (1984) concludes that the relative income returns to a bachelor's degree for black men were 13 percent higher than those for white men in 1971 but were 89 percent higher in 1977. There are no comparable studies of the returns to college degrees for Asian Americans and Hispanics.

There are also racial differences in the returns to selectivity. Datcher-Loury and Garman (1995) conclude that, holding constant performance, blacks gain substantially from an increase in college selectivity. For a white male with a composite SAT score greater than 850 but less than 1,000, attending a college with a median SAT score of 1,000 points rather than 900 points increases earnings by $298 if he graduates and by $283 if he drops out. If his score is greater than 1,000, he increases his earnings by only $253.

On the other hand, if Mr. Jenkins attends a more selective school, his probability of graduation increases (Datcher-Loury and Garman, 1995). His grade point average increases if his composite SAT score is greater than 850, and decreases otherwise.

The most probable scenario is that both men will attend four-year institutions under both the old and new admissions policies. SP-1 and the CCRI simply send Mr. Jenkins to a more competitive campus and Mr. Smith to a less competitive campus or to the CSU system. Assuming both men graduate from college, Mr. Smith could lose up to $4,791 over his lifetime, while Mr. Jenkins gains only $1,856. Adjusting for differences in graduation rates, the difference in benefits and costs equals-$2,437

Consequences for the Undergraduate Academic Environment

A change in admissions criteria will have an impact not only on Mr. Smith and Mr. Jenkins but also on the students whose probability of admission is unaffected by the change in policy. Even a student whose admissions decision is unaffected by the CCRI will indirectly enjoy benefits or suffer costs as a result of its passage.

A change in admissions policies will affect the academic environment in two ways. First, a change in admissions policies will change the characteristics of the entering class. If greater weight is given to SAT scores and GPAs in the admissions process, the median SAT for the entering class at the most competitive campuses is likely to increase. On the other hand, if socioeconomic criteria replaces race in the admissions process, simulation results suggest a decline in the median SAT of the entering class. For example, at Berkeley the median verbal SAT score for the class entering in the fall of 1994 was 600. The median verbal SAT score predicted by the Office of the President's simulation analysis is 580. The median math SAT score for actual admits was 690; the median score for the simulated admits, 680.(n18) As described in the previous section, a decrease in median SAT could decrease the earnings of an individual whose probability of admission is identical under the old and new processes. Those concerned about the potential for "watering down" the curriculum under affirmative action have even more to fear from the revised admissions policies.

Second, a change in admissions policies is likely to reduce racial and ethnic diversity in the classrooms. Many educators strongly believe that this diversity improves the quality of education received by all students. According to Neil Rudenstine, president of Harvard University, a diverse educational environment challenges students "to see issues from various sides, to rethink their own premises, to achieve the kind of understanding that comes only from testing their own hypotheses against those of other people with other views" (Rudenstine, as cited in Schoenfield, 1996). James McLeod, vice chancellor for students at Washington University said recently, "understanding different kinds of people is a mark of an educated person" (McLeod, as cited in Schoenfield, 1996). A study of student opinions at the Berkeley campus found that students support the concept of racial and ethnic diversity on UC campuses although the concept had different meanings for different groups of students (University of California, Berkeley, Institute for the Study of Social Change, 1991).

Perhaps because of its wide acceptance, the hypothesis that diversity improves educational outcomes has not been subjected to much empirical scrutiny. Deppe (1989) investigates the relationship between social concern and the racial diversity (nonwhite students as percent of all students) of the student body. Social concern is defined as the importance students placed on: influencing political structure, influencing social values, helping others who are in difficulty, developing a meaningful philosophy of life, participating in community action, and helping to promote racial understanding. Deppe finds that racial diversity did not contribute either positively or negatively to student value development. Deppe, citing other studies, concludes that the racial integration of campuses has improved neither intergroup contact nor racial attitudes.

Astin (1993a) reports that socializing with students from different racial/ethnic groups has strong positive effects on cultural awareness and commitment to promoting racial understanding. It has a negative effect on beliefs that racial discrimination is no longer a problem in America and that the individual can do little to change society. However, Astin, too, concludes that the racial composition of the student body has trivial effects on outcomes.

Consequences for Taxpayers

A change in UC admissions policies will also impose benefits and costs on the community at large. Taxpayers could gain or lose depending on the impact on overall operating costs for the university and on the impact of tax revenues for the state. In addition, a decrease in the pool of minority college graduates could have negative consequences for minority communities.

The available evidence suggests that the CCRI will either increase university operating costs or leave them unchanged. The anticipated changes in admissions policies at the undergraduate level should not

affect the length of the application or increase the costs of processing. The computer simulations performed by both the Office of the President and by UC San Diego relied on information already provided on the application. The principal problem will be making admissions decisions for applicants who decline to state parental income on their application form.

The CCRI could also affect operating costs if it leads to the elimination of some outreach, academic support or scholarship programs; the university system has recently completed a careful review of these (University of California, Office of the President, 1996a). In many cases, programs have already been reconfigured to eliminate race as a criterion for eligibility. In most instances, socioeconomic disadvantage has replaced race.

University officials anticipate that some of these programs might expand as a result of the CCRI. This is particularly true for outreach programs designed to target middle-school and high-school students. In the past, these programs targeted specific schools based on the racial and ethnic make-up. Now the programs will target schools based on the socioeconomic status of the majority of the student body. The use of socioeconomic disadvantage will expand the set of potential targets and thus increase costs.

In the worst case scenario, where a change in admissions policies results in a reduction in the number of African Americans, Hispanics, and Native Americans who attend post-secondary institutions, there could be negative consequences for taxpayers and for minority communities. Several studies have shown that an increase in the average income of a community is associated with increased earnings and reduced incidence of dropping out of high school and teenage childbearing (Crane, 1991; Datcher, 1982; Hogan and Kitagawa, 1985).(n19)

In addition, a college degree is a prerequisite for becoming an elementary and secondary school teacher. There appear to be educational benefits from the presence of African American teachers in classrooms with African American students and Latino teachers in classrooms with Latino students (Cox, 1993). Both groups are currently underrepresented in this profession. A reduction in the number of African Americans and Mexican Americans will also affect the pipeline of students interested in graduate study. UCLA and Berkeley are among the top ten feeder schools for applicants to medical and law school. They rank third and fourth for the production of Hispanic applicants.

Taxpayers also lose to the extent that the decrease in earnings for African Americans, Hispanics and Native Americans is not offset by an increase in earnings for Asians and Non-Hispanic, whites.

THE IMPACT OF CHANGES IN LAW AND MEDICAL SCHOOL ADMISSIONS POLICIES

The excess demand for slots in the UC law and medical schools is even greater than for the undergraduate programs at UC Berkeley and UCLA. In 1994, there were 13,458 applicants for 754 spaces in UC schools of law and 26,416 applicants for 592 spaces in UC schools of medicine (University of California, Office of the President, 1995a). There are no strict eligibility requirements for admission to professional schools. Admission is based on a variety of criteria, with emphasis placed on academic merit. Since there are differences in the admissions procedures between law and medicine, they are discussed separately.

Law School Admissions

To select a first year class, the UC law schools rely on a two-step procedure. All applications are initially ranked primarily on the basis of their academic credentials: LSAT score, undergraduate GPA (UGPA) and letters of recommendation. UCLA admits up to 60 percent of its entering class almost entirely on the basis of academic criteria; Boalt Hall, up to 50 percent.(n20) The remainder of the class is filled on the basis of academic criteria combined with other factors, including institutional diversity. For example, at UC Davis, consideration is given to growth and maturity, economic disadvantage and physical handicap, and, until recently, racial or ethnic minority status.

Prior to the Board of Regents' decision, all three law schools considered race and ethnicity in the admissions process. Figure 2 summarizes the results of this admissions process for the three UC law schools. It reports acceptance rates by race based on 1992-1995 cumulative applicants and admits.

Acceptance rates were not consistently higher for under-represented minorities than for whites. Over the four year period 1992-1995, 19.5 percent of African American applicants and 19.2 percent of white applicants were accepted for admission. Acceptance rates were lower for Asian Americans and Hispanic.(n21) There are, however, consistent racial differences in yield rates. Figure 3 reports yield rates by race based on 1992-1995 cumulative admits and matriculants. Yield rates are consistently lower for African Americans than for other groups.

Table 6 provides a more detailed picture of the admissions process at UC Berkeley. Most Asian American and white applicants were admitted from Group I where LSAT scores and UGPA are heavily weighted. Most African Americans, Latinos and Chicanos were admitted from the second category, after a review of nonnumerical indicators. A similar pattern held at UCLA. Most white and Asian American applicants were admitted in the first 60 percent of the class. For this top group, the admission decision is based primarily on LSAT scores and UGPA. Most African Americans, Hispanics, and Native Americans were admitted in the 40 percent group (University of California, Office of the President, 1995a).

Given the small numbers of African Americans, Latinos and Chicanos admitted on the basis of academic criteria alone, a change in admissions policies to give greater weight to UGPA and LSAT scores could have a dramatic effect on the number of non-Asian minorities studying law at Boalt Hall. However, the law schools do not plan to increase the weight given to UGPA and LSAT scores. The law schools are responding to Board of Regents' mandate by decreasing the weight given to UGPA and LSAT scores and by increasing the weight on other factors. Given this increased reliance on nonnumerical factors, it is difficult to predict the impact of changes in admissions policies on the racial composition of entering classes. Simulations conducted at the undergraduate level suggest that substituting socioeconomic disadvantage for race in the admissions process will result in lower acceptance rates for African Americans and Mexican Americans and higher acceptance rates for Asian Americans.

The changes in policy are likely to increase the direct costs of the admissions process. Costs will increase as campuses gather more information about the students' socioeconomic backgrounds and as they expand recruitment efforts. For example, at UCLA, the law school application has lengthened from two pages to between six and eight pages as a result of questions that explore the applicant's socioeconomic status. This increase in the length of the application will increase the time spent reviewing applications and will thus increase costs. There will also be an increase in the printing and postage expenditures.

Medical School Admissions

Approximately 5,000 students apply to each UC medical school each year. Each campus selects only 100 for admission. All campuses use a generic medical school application from the American Medical College Application Service (AMCAS), and all campuses screen applicants with a multistage, labor-intensive process. Applications are initially sorted on the basis of grades and MCAT scores. Applicants who survive this initial screen are asked to submit a secondary application. On the basis of information in the AMCAS and in the secondary application, some candidates will be invited for an interview. Approximately 18,000 hours per school year are devoted to this effort (University of California, 1995b).

Although there are variations across campuses in admissions procedures, all of the medical schools stress that students with high grades and scores can be rejected in favor of students with lower grades and scores based on other criteria, including patient orientation and clinical experience. Prior to the Board of Regents' resolution, admissions committees also considered the race and ethnicity of the candidate. Table 7 and Figure 4 describe the outcome of this admissions process over the four-year period 1992-1995. Acceptance rates were higher for African Americans, Native Americans and Hispanics than for Asians and whites.

University officials acknowledge that average MCAT scores and UGPA's were lower for the African Americans, Native Americans, and Hispanics admitted to UC medical schools than for Asians and whites, but they stress the importance of other qualities such as commitment to service, honesty, integrity, and perseverance, which cannot be assessed by quantitative measures such as UGPA or MCAT scores

(Morrison, 1994; Drake, 1994; Nickens and Cohen, 1996). As Dr. Michael Drake, in testimony to the UC Board of Regents', stressed: "Medical school admission is not a prize. Rather we work to select a class that will produce doctors who serve the needs of society. Applicants tend to look at the act of admission as an end itself, we focus more on the product, the doctor the student will become" (Drake, 1994). Admissions officers believe that these other factors could be as important in predicting success as the MCAT.(n22)

UCI implemented the changes required by the Board of Regents during the 1996 admission cycle. Under the old policy, the admissions office divided applicants into three categories--traditional, members of underrepresented racial or ethnic groups, and financially disadvantaged. Applicants were evaluated according to the national performance of their pool. Applicants meeting the minimum academic requirement for their respective pool were sent a secondary application. For the 1996 admission cycle, applicants were divided into only two categories--traditional and financially disadvantaged. Figure 5 describes the impact of the new policy on acceptance rates by race for UC Irvine from 1990 to 1996. The new policy has resulted in a lower acceptance rate for African Americans, for Mexican Americans, and American Indians than in any of the earlier four years. The acceptance rates for Asians, primarily Chinese Americans, increased.

The data in Figure 5 also illustrate the effect of a change in admissions policy occurring in the spring of 1995. Before the spring of 1995, UCI initially screened applicants on the basis of numerical criteria, rejecting the bottom group without further review. Minority applicants and financially disadvantaged applicants were eligible for further consideration, even if they fell into this bottom group. In the spring of 1995, UCI ended this practice. No applicant was rejected solely on the basis of MCAT scores and UGPA's. All applications, not just those of minority students, were individually reviewed for factors that might merit further consideration. Returning to Figure 5, the acceptance rates for African Americans, Mexican Americans and American Indians were lower in 1995 than in any of the previous three years.

UCSD also implemented new admissions policies for the classes entering in the fall of 1995 and in the fall of 1996. Before the class entering in the fall of 1995, minority and disadvantaged students had a different cut-off of scores and grades. In the spring of 1995, this practice was suspended. The cut-off used for minority students was applied to all students. As a result, the admissions committee reads approximately 3,000 additional applications. Minority group status continued to be a plus factor in the admissions process for classes entering in the fall of 1995 and the fall of 1996. However, for the class entering in the fall of 1996, the committee developed a more precise definition of socioeconomic disadvantage and applied it to all applicants. Beginning with the class entering in 1997, the admissions committee will no longer consider race or ethnic minority status. As Figure 6 illustrates, the experience at UCSD is similar to that at UCI. The percentage of African American and Mexican American applicants accepted for admission dropped significantly between 1994 and 1995, and again between 1995 and 1996. The percentage of Asian and white applicants accepted for admission increased.

Measuring the Costs and Benefits of the Change in Policy

Once again, the problem is to compare the marginal cost to an individual rejected under the new policy (Mr. Smith) with the marginal benefit to an individual accepted in his place (Mr. Jenkins). The discussion that follows assumes the marginal costs of education do not depend on the race or ethnicity of the applicant.

In the case of professional school admissions, more so than at the undergraduate level, rejection could lead to Mr. Smith's failure to complete the degree. There is greater excess demand for slots in law and medicine than at the undergraduate level. There are fewer options for Mr. Smith if he is not accepted. The admissions process is more subjective--leading to greater variability in possible outcomes. The discussion that follows assumes that Mr. Smith will not complete a degree in law or medicine if he is rejected from a University of California campus.

The returns to being a doctor or lawyer do not appear to differ systematically by race. However, a strict comparison of the monetary returns associated with being a doctor or lawyer is problematic for two reasons. First, not all medical school and law school graduates go on to practice medicine and law. Graduates must pass certification exams before they are admitted to the profession. Racial differences in passing rates could lead to differences in the marginal benefit of schooling even if there are no racial differences in salaries. Second, there is likely to be an inverse relationship between earnings and psychic income. A student who practices medicine in an underserved community could have a high private return, but low earnings. The spillover benefits of a medical education, described below, are also likely to be negatively correlated with earnings.

Differences in rates of passing board certification exams and bar exams have been a focal point for critics of affirmative action (Cook, 1995). A smaller percentage of African American, Mexican American, Puerto Rican and American Indian students pass Step One of the National Boards on their first try (Cook, 1996). However, data presented by Dr. Michael Drake of UCSF show that the percentages passing on either the first or second try are quite similar (Drake, 1994). For the purpose of calculating the private return to medical education, passing on the second try is equivalent to passing on the first. These findings suggest that the private marginal cost of rejection from medical school for Mr. Smith is roughly equal to the private marginal benefit of acceptance for Mr. Jenkins.

Completion rates for UC law school students are quite high. The over-all completion rate for classes entering between 1986 and 1990 exceeded 90 percent (University of California, Office of the President, 1995b). However, completion rates tend to be lower for minority students. For the class entering in 1990, 89.4 percent of minorities and 95.9 percent of whites completed the program (University of California, Office of the President, 1995b). For the first year class cohorts of 1986, 1987, 1988, 1989, and 1990, the average completion rate for minority students was 90.5 percent and for white students, 94.3 percent. A smaller percentage of minority students pass the California State Bar examination on the first try. In 1994, 97.5 percent of white and 83.0 percent of minority UC law school graduates who were first-time takers passed the bar exam. For any graduating class, 90 percent of minorities and 100 percent of nonminorites taking the bar exam pass within nine months of graduation (either on the first or second attempt) (University of California, Office of the President, 1995b).

Given these differences in outcomes, the private marginal benefit of admission to law school for Mr. Jenkins could exceed the private marginal cost to Mr. Smith.

Impact on Educational Environment in Law and Medicine

Educators in law and medicine are even more adamant about the educational value of a diverse campus environment than are educators at the undergraduate level. Medical educators stress the importance of understanding differences in culture and social practice for the effective delivery of health care services, and they credit minority students with improving the "cultural competence" of their nonminority classmates (Nickers, 1996). Michael Drake, Associate Dean of Medicine at the UC San Francisco Medical school testified to the UC Board of Regents:

[E]ducational diversity is important to all physicians regardless of the predominant practice mix. This is because medicine is practiced on a diverse population in our society. Students learn from books, from professors, from patients and from each other. We learn invaluable lessons about working on people different from ourselves by working with people different from ourselves. Lessons about communicating, lessons about rejecting stereotypes, are often best taught by our peers . . . a diverse medical school class serves to make all of its members better doctors. I know that I'm better at caring for elderly Chinese women, because I trained with Asian women who helped teach me a better approach.

Justice William Powell's decision in Bakke, 438 U.S. 314 (1978), affirmed the importance of diversity to the education of lawyers.

The law school, the proving ground for legal learning and practice, cannot be effective in isolation from the individuals and institutions with which the law interacts. Few students and no one who has practiced law would choose to study in an academic vacuum, removed from the interplay of ideas and the exchange of views with which the law is concerned.

Legal educators also cite the role of minority students in improving the cultural competence of their nonminority classmates (Oko, 1996). Legal educators argue that diversity of intellectual tradition and background helps students identify areas where the law is "inconsistent, inappropriate, or unresponsive to the needs of society" (Kay, 1995). Legal and medical educators believe that a decrease in the racial and ethnic diversity of the law and medical school student populations diminishes the quality of education received by all students, regardless of race and ethnicity.

Furthermore, educators stress the importance of the presence of a critical mass of underrepresented minority students. The report of the Admissions Policy Task Force at Boalt Hall (University of California, Berkeley, 1993) argues that a critical mass of minority students is essential to maintaining an active exchange of ideas. According to the report, when minority students are enrolled in small numbers, they often experience feelings of alienation and isolation that make them less likely to participate pate in class discussions. Tokenism, according to the report, can "silence the very voices that are crucial to building a diverse and intellectually stimulating law school" (University of California, Berkeley, 1993).

Impact of Delivery of Medical and Legal Services to Minority Communities

Proponents of affirmative action in law and medicine typically cite not the private benefits to individuals, but the spillover benefits for society as a whole derived from increasing the supply of minorities in these professions. One source of slipover is the impact on the educational environment described above. A second is the potential impact of minority lawyers and doctors on the delivery of legal and medical services to minority communities.(n23) The size of this spillover depends on the link between the underrepresentation of African Americans and Hispanics in law and medicine and the racial disparities in the utilization of these services.

There is an especially rich body of literature documenting a link between the training of minority doctors and the delivery of health care services to minority communities.23 All physicians tend to care for patients of their own race and ethnicity, but this is especially true for black and Hispanic physicians (Komaromy et al., 1996). On average, black physicians care for nearly six times as many black patients, and Hispanics physicians care for nearly three times as many Hispanic patients as do other physicians (Komaromy et al., 1996). Black, Asian and Hispanic physicians are more likely to serve patients who are Medicaid recipients (Komaromy et al., 1996; Association of American Medical Colleges, Minority Students in Medical Education, 1995). According to the Association of American Medical Colleges (AAMC), nearly 40 percent of underrepresented minority physicians practice in deprived areas. Less than 10 percent of non-URM's do. The AAMC also reported that URM students were more likely to participate in public health screening clinics, to deliver medical services to underserved populations outside clinical rotations, and to volunteer to educate high school and college students about science and medicine (Association of American Medical Colleges, 1996). Doctors admitted under a special admissions program at UC San Diego saw more patients per day and were more likely to have a poor clientele than were their classmates (Penn et al., 1986).

A reduction in the number of African American and Hispanic medical school graduates clearly has negative consequences for the delivery of health care services to these communities. However, there is a flip side to this argument. Will an increase in the number of white and Asian graduates increase the delivery of health care services to their communities? The answer is probably yes, but the marginal effect is likely to be smaller for two reasons. First, as noted above, the tendency to care for patients of one's own race and ethnicity is greater for African Americans and Hispanics than for other racial groups. Second, there is a greater shortage of health care providers in black and Hispanic communities. Komaromy et al. report that communities with high proportions of black and Hispanic residents are four

times as likely as others to have a shortage of physicians, regardless of community income (Komaromy et al., 1996).

A decline in the number of African American and Hispanic medical school students will have detrimental effects on health care delivery in their respective communities. These effects are likely to outweigh any benefits from an increase in the delivery of health care services to white and Asian communities.

Legal scholars argue that increasing the diversity of the legal profession is essential preservation of trust in the American legal system (Kay, 1995), that black lawyers have a better understanding of the legal problems faced by a fellow black (Oko, 1996), and that black clients feel more comfortable with lawyers from the same racial background (Oko, 1996).(n24) However, there is no body of empirical research, comparable to that in medicine, that documents the social benefits of educating minority lawyers.

THE IMPACT OF ELIMINATING RACE-BASED AFFIRMATIVE ACTION IN ADMISSIONS: A PRELIMINARY APPRAISAL

The short-term effects of eliminating race as a factor in undergraduate admissions are unlikely to be dramatic. Even with affirmative action, the total number of African American, Mexican American and Native American students admitted to the most selective UC campuses was small. Nearly all of the students admitted under the old admissions policy were UC eligible. Hence, there was, in principle, a place for them at other UC campuses or in the California State University system. From society's perspective, the cost of this change in policy is the difference in the returns to college selectivity for the underrepresented minorities and white and Asian students.

The impact of the change in admission policies will be more dramatic at the professional schools. Again, the total number of students affected is relatively small. However, a student denied admission to a publicly funded law or medical school has fewer options. The elimination of race as a factor in admissions decisions will reduce the supply of African American, Mexican American and Native American physicians, and could reduce the delivery of health care services in these communities.

The elimination of race-based affirmative action programs, as mandated by the UC Board of Regents and the CCRI, is unlikely to result in any cost savings in the University of California system. Indeed, the costs of the admissions process, particularly at the graduate level, and expenditures on recruitment and academic support are likely to increase. Further-more, society could lose from the redistribution of educational resources away from individuals who enjoy the highest marginal return to post-secondary education, and particularly from those who enjoy the highest marginal benefit from selectivity. A change in admissions policies could also have negative, largely intangible, consequences for the educational environment.

On the other hand, elimination of race-based affirmative action would end the perception that the admissions process is unfair, particularly among Asian American students.

These findings should be viewed as provisional. There is too little information on the decision making of high school students to predict accurately the effect of a change in policy on application rates and yield rates at UC campuses. Nevertheless, these findings do suggest that race is a factor in the calculation of the marginal social benefit of a UC education. Race is relevant in at least three ways: 1) there are racial differences in the returns to college and the returns to selectivity; 2) there appear to be benefits to racial diversity on university campuses, particularly in law and medicine; and 3) the spillover benefits of a university education are likely to be larger for underrepresented minorities than for other groups. Hence, a case can be made for consideration of race as a factor in the admissions decision on the grounds of economic efficiency without appeals to altruism.

NOTES

(n1). The California Civil Rights Initiative (CCRI or Proposition 209) mandates that neither the State of California nor any of its political subdivisions or agents shall use race, sex, color, ethnicity, or national origin as a criterion for either discriminating against, or granting preferential treatment to, any

individual or group in the operation of the State's system of public employment, public education, or public contracting.

(n2). To save space, we forgo the use of the gender neutral term first-year student. The term "freshman" will apply to both males and females.

(n3). Reginald Wilson (1989, 1995) and A Common Destiny, edited by Gerald Jaynes, discuss factors contributing to the decline in African American enrollments in post-secondary institutions. Richard Santos (1986) discusses factors influencing college attendance among Hispanics. Astin (1982) is a classic source.

(n4). This is one of many possible measures of the dropout rate. Other measures report similar racial disparity.

(n5). The five criteria specified as important in the admissions decision were: (1) high school grade point average of 3.5 or higher, (2) SAT equivalent score of 1100 or higher; (3) accumulated four credits in English, three in math, three in science, three in social studies, and two in a foreign language; (4) positive teacher evaluations; and (5) participation in two or more extra-curricular activities.

(n6). Pages 356-357 of A Common Destiny (Jaynes, 1989) provides a concise discussion of the role that teacher expectations and tracking can play in later achievement.

(n7). Among fall 1994 applicants to the UC system, 83.1 percent of white students had fathers with a B.A. degree or higher. Only 36.2 percent of African American students and 25 percent of Chicano/Latino applicants had fathers with similar educational attainment (Aldaco, 1995). The average parental income of white applicants was $85,592; of African American applicants, $45,715; of Chicano/Latino applicants, $42,411.

(n8). Foster and Vohra (1992) show that the Coats and Loury conclusion is not robust. A change in assumptions about the joint distribution of true abilities and test scores reverses their findings. In addition, implicit in the Coates and Loury model is the assumptions that there is space for all eligible candidates. In fact, the admissions process at the most competitive UC campuses is better modeled as a winner take all game. Each participant has an incentive to work as hard as possible because, even within the minority group category, only those with the highest scores will win.

(n9). UC campuses can admit a limited number of students who do not meet this criteria. Up to five percent of an entering class can be admitted by exception.

(n10). University-wide, the acceptance rates are higher for Asians and whites than for African Americans and Hispanics.

(n11). Asian Americans have the highest rates of eligibility for the UC system. Nearly 40 percent of Asian American graduates of California public high schools are UC eligible compared with less than 10 percent of African American graduates. A little over 20 percent of white California public high school graduates are UC eligible.

(n12). For example, see testimony by Linda Chavez at the Assembly Committee on the Judiciary, California State Legislature, Sacramento, CA, May 5, 1995.

(n13). The APCV is an indicator of high school quality developed by the California Board of Education. It considers the percentage of students enrolled in the courses required for admission to the UC system, the percentage of students enrolled in geometry, the percentage of students staying in school, the percentage of students in advanced placement courses, the percentage of students scoring at or above 900 on SAT combined, and the percentage of students attending UC and CSU.

(n14). The ideal measure of benefits would consider a range of educational outcomes, not just earnings.

(n15). It is possible that Mr. Smith will attend a more selective college. Elite private institutions base admissions decisions on a variety of factors in addition to academic credentials. Admissions officers at both Yale University and Stanford University could recall cases in which they accepted a student rejected by UC Berkeley.

(n16). A change in admissions criteria might affect characteristics other than the selectivity of the institution attended by Mr. Smith. For example, a telephone survey of historically black colleges suggests that they are an attractive alternative for African American high-school graduates. Attending a predominantly black institution does not appear to affect educational outcomes for black men and has small, positive effects for black women (Pascarella et al., 1989; Pascarella and Terenzini, 1991; Astin, 1993a). Differences associated with attending a black college disappear once we control for the institutional characteristics, such as the number of students, faculty to student ratio and for the characteristics of entering students. For black women, attendance at a predominantly black institution increases academic achievements (Pascarella and Terenzini, 1991); and improves occupational status (Pascarella et al., 1989). Thomas (1984) found that net of social origins, mathematics and science preparation, occupational aspirations and college grades, attending a black college significantly improved the likelihood that black women would major in natural, biological or technical sciences. Astin (1977) found that attending a black institution enhanced the likelihood that a black student would become a physician.
(n17). Datcher-Loury and Garman do not estimate the effect of college selectivity on earnings for Hispanics, Asians, or for women.
(n18). The office of the President's study defines the socioeconomic status of the applicant on the basis of the parent's income and educational level. Since there is a strong correlation between income, parent's education and SAT scores, the increase in the number of low-income students admitted results in a reduction of mean and median scores. The UC San Diego simulation uses information on the applicant's secondary school to define socioeconomic disadvantage. Using this definition of socioeconomic status results in a smaller reduction in average scores. The actual mean verbal score for the class entering in 1995 was 539; the simulated mean, 536. The actual math score was 641, the simulated score, 636.
(n19). These studies utilize a geographic concept of community. Hence, the impact of an increase in the number of college graduates on average income will be sensitive to the residential location choices of those individuals.
(n20). At Boalt, the Director of Admissions admits the first 50 percent of applicants. In this initial screening, the director considers both quantitative and nonquantitative factors.
(n21). For the purposes of law school admissions, Asians are an underrepresented minority.
(n22). Nickens and Cohen (1996) report finding only one study that examined the correlation between numerical indicators (MCATS and UGPA) and outcomes, and its findings were inconclusive.
(n23). For additional references, see Nickens and Cohen, 1996; and Komaromy et al., 1996.
(n24). Additional citations can be found in Oko (1996).
TABLE 1 Minority Post-secondary Enrollment in California
All Post-secondary Institutions[1]

Race/ Ethnicity	1990 Total Enrollment	% of Post-secondary Enrollment	% of State Population
African American	118,492	6.5	7.4
Hispanic	233,527	12.9	25.8
Asian American[2]	227,372	12.6	9.6

American Indian[3]	21,301	1.2	0.9

Race/ Ethnicity	1980 Total Enrollment	% of Post-secondary Enrollment	% of State Population
African American	142,400	8.0	7.7
Hispanic	26,777	9.37	19.2
Asian American[2]	129,298	7.2	5.3
American Indian[3]	22,835	1.3	0.8

Four-year Institutions

Race/ Ethnicity	1990 Total Enrollment	% of Post-secondary Enrollment	% of State Population
African American	38,690	5.2	7.4
Hispanic	77,845	10.5	25.8
Asian American	116,017	15.7	9.6
American Indian	6,162	0.8	0.9

Four-year Institutions

African American	38,017	5.8	7.7
Hispanic	46,270	7.1	19.2
Asian American	57,645	8.8	5.3
American Indian	5,751	0.9	0.8

Source: Carter and Wilson, 1993.

Notes: [1.] Includes two-and four-year institutions

[2.] Includes Pacific Islanders

[3.] Includes Alaskan Natives

TABLE 2 Admissions Rates and Yield Rates by Race and Ethnicity, by University of California

Legend for Table:

A - # of Applicants
B - # Admitted
C - Acceptance Rate
D - # Enrolled
E - Yield

ALL CAMPUSES (Unduplicated counts)

	A	B	C	D	E
African American	2,432	1,436	0.590	793	0.552
American Indian	495	384	0.776	243	0.633
Asian	13,183	10,382	0.788	8,531	0.822
Chicano	5,533	4,014	0.725	2,238	0.558
Filipino	2,309	1,743	0.755	1,108	0.636
Latino	2,149	1,553	0.723	896	0.577
Unknown	2,092	1,739	0.831	883	0.508
White/Other	23,545	18,913	0.803	9,554	0.505
Total	51,738	40,164	0.776	22,226	0.553

Berkeley

African American	1,204	530	0.440	178	0.336
American Indian	197	130	0.660	60	0.462
Asian	7,580	2,611	0.344	1,154	0.442
Chicano	1,906	1,116	0.586	385	0.345
Filipino	917	157	0.171	59	0.376
Latino	861	332	0.386	112	0.337
Unknown	1,075	450	0.419	165	0.367
White/Other	9,166	3,403	0.371	1,179	0.346
Total	22,908	8,729	0.381	3,292	0.377

Davis

African American	659	366	0.555	77	0.210
American Indian	181	142	0.785	42	0.296
Asian	4,966	3,252	0.655	877	0.270

Chicano	1,354	1,017	0.751	224	0.220
Filipino	754	376	0.499	112	0.298
Latino	608	485	0.798	123	0.254
Unknown	721	543	0.753	102	0.188
White/Other	8,469	5,987	0.707	1,487	0.248
Total	17,712	12,148	0.686	3,044	0.251

Irvine

African American	634	267	0.421	50	0.187
American Indian	101	65	0.644	14	0.215
Asian	6,403	4,589	0.717	1,387	0.303
Chicano	1,783	1,024	0.574	214	0.209
Filipino	996	729	0.732	263	0.361
Latino	618	386	0.625	94	0.244
Unknown	478	376	0.787	76	0.202
White/Other	4,899	3,730	0.761	734	0.197
Total	15,912	11,166	0.702	2,834	0.254

Los Angeles

African American	1,444	668	0.463	249	0.373
American Indian	166	111	0.669	44	0.396
Asian	8,389	3,244	0.387	1,055	0.325
Chicano	2,709	1,474	0.544	538	0.365
Filipino	1,181	491	0.416	259	0.527
Latino	1,137	649	0.571	247	0.381
Unknown	1,031	460	0.446	120	0.261
White/Other	9,401	3,626	0.386	1,087	0.300
Total	25,458	10,623	0.417	3,599	0.339

Riverside

African American	539	241	0.447	64	0.266
American Indian	59	39	0.661	8	0.205
Asian	3,696	2,687	0.727	446	0.166
Chicano	1,422	820	0.577	212	0.259
Filipino	577	463	0.802	110	0.238
Latino	400	235	0.588	51	0.217
Unknown	257	200	0.778	34	0.170
White/Other	2,917	2,346	0.804	488	0.208
Total	9,867	7,031	0.713	1,413	0.201

San Diego

African American	681	291	0.427	41	0.141
American Indian	183	131	0.716	22	0.168

Asian	6,268	3,788	0.604	963	0.254
Chicano	1,813	1,081	0.596	212	0.196
Filipino	990	467	0.472	145	0.310
Latino	733	300	0.409	62	0.207
Unknown	998	677	0.678	152	0.225
White/Other	9,917	5,791	0.584	1,450	0.250
Total	21,583	12,526	0.580	3,047	0.243

Santa Barbara

African American	583	336	0.576	57	0.170
American Indian	190	144	0.758	226	0.181
Asian	3,733	2,829	0.758	454	0.160
Chicano	1,919	294	0.674	248	0.192
Filipino	622	497	0.799	105	0.211
Latino	816	587	0.719	114	0.194
Unknown	709	595	0.839	111	0.187
White/Other	9,719	8,121	0.836	2,043	0.252
Total	18,291	14,403	0.787	3,158	0.219

Santa Cruz

African American	412	249	0.604	35	0.141
American Indian	146	106	0.726	23	0.217
Asian	2,041	1,464	0.717	154	0.105
Chicano	1,369	975	0.712	135	0.138
Filipino	352	289	0.821	51	0.176
Latino	558	426	0.763	71	0.167
Unknown	550	464	0.844	95	0.205
White/Other	5,978	5,032	0.842	1,046	0.208
Total	11,404	9,005	0.790	1,610	0.179

Source: University of California, Office of the President
TABLE 3 Impact of Substituting Socioeconomic Status for Race University of California, Office of President's Simulation
All Campuses

	Actual Enrollment, Fall 1994	Simulated Enrollment	Change
African American	309	178	-131
American Indian	89	51	-39
Asian	2,289	2,740	451
Chicano/Latino	1,146	999	-148
Filipino	261	272	11
White/Other	3,876	3,991	115
Total	7,970	8,229	

Berkeley

African American	203	98	-106
American Indian	37	14	-24
Asian	1,257	1,627	370
Chicano/Latino	498	376	-122
Filipino	56	70	14
White/Other/Unknown	1,297	1,305	8
Total	3,348	3,489	

San Diego

African American	67	49	-18
American Indian	34	22	-13
Asian	839	883	44
Chicano/Latino	347	335	-12
Filipino	147	141	-8
White/Other/Unknown	1,421	1,495	74
Total	2,857	2,924	

Santa Cruz

African American	39	32	-8
American Indian	18	16	-3
Asian	193	230	37
Chicano/Latino	301	288	-14
Filipino	56	61	5
White/Other/Unknown	1,158	1,191	33
Total	1,765	1,816	

San Diego	Actual Number Admitted, Class Entering Fall 1994	Simulated Enrollment	Change
African American	298	217	-81
American Indian	130	83	-47
Asian	3,835	3,917	82
Chicano/Latino	1,410	1,202	-208
Filipino	469	564	95
White/Other/Unknown	6,523	6,714	191
Total	12,526	12,697	

All Campuses

	Change In %	Actual % of Total	Simulated % of

	Freshman Enrollment	Freshman Enrollment
African American	-42.4%	3.9%	2.2%
American Indian	-43.3%	1.1%	0.6%
Asian	19.7%	28.7%	33.3%
Chicano/Latino	-12.9%	14.4%	12.1%
Filipino	4.0%	3.3%	3.3%
White/Other	3.0%	48.6%	48.5%
Total			

Berkeley

African American	-52.0%	6.1%	2.8%
American Indian	-63.5%	1.1%	0.4%
Asian	29.4%	37.5%	46.6%
Chicano/Latino	-24.5%	14.9%	10.8%
Filipino	25.0%	1.7%	2.0%
White/Other/Unknown	0.6%	38.7%	37.4%
Total			

San Diego

African American	-26.9%	2.0%	1.4%
American Indian	-36.8%	1.0%	0.6%
Asian	5.2%	25.1%	25.3%
Chicano/Latino	-3.5%	10.4%	9.6%
Filipino	-5.4%	4.5%	4.0%
White/Other/Unknown	5.2%	42.4%	42.8%
Total			

Santa Cruz

African American	-19.20%	1.2%	0.9%
American Indian	-13.90%	0.5%	0.5%
Asian	19.20%	5.8%	6.6%
Chicano/Latino	-4.50%	9.0%	8.3%
Filipino	8.00%	1.7%	1.7%
White/Other/Unknown	2.80%	34.6%	34.1%
Total			

San Diego	Change in %	% of Total Freshman Enrollment (Assumes Historical yield Rates)	Simulated % of Freshman Enrollment

African American	-27.2%	1.4%	1.0%
American Indian	-36.2%	0.7%	0.5%
Asian	2.1%	32.0%	32.3%
Chicano/Latino	-14.8%	9.2%	7.7%
Filipino	20.3%	4.8%	5.7%
White/Other/Unknown	2.9%	53.6%	54.4%
Total			

Source: University of California, Office of President, May 1995a, and University of California, San Diego, 1996.

TABLE 4 Present Discounted Value of Lifetime Earnings

	Asian, Non-Hispanic	White, Non-Hispanic	Black, Non-Hispanic	White, Hispanic
Men				
High School	$156,993	$205,647	$157,544	$172,816
Some College	$182,262	$237,378	$181,505	$197,233
B.A.	$230,106	$312,589	$235,670	$248,728
Women				
High School	$122,144	$136,884	$122,983	$122,344
Some College	$147,102	$158,597	$146,589	$141,967
B.A.	$173,987	$201,306	$183,696	$184,585
Increase in Lifetime Earnings (As Compared with high School Diploma)				
Men				
Some College	$126,347	$119,805	$119,805	$122,082
B.A.	$365,568	$390,630	$390,630	$379,561
Women				
Some College	$124,787	$118,031	$118,031	$98,118
B.A.	$269,213	$303,563	$303,563	$311,204

Source: US Bureau of the Census, 1990 public Use Micro Sample and Author's calculations. Assumes 3% rate of interest.

TABLE 5 Degree Attainment by Admissions Category[*]

	Accepted by First-choice Institution		
	Certificate	Associates	Bachelor's
Hispanic	12.07	11.22	14.96
Native American	11.99	19.31	20.07

Asian/Pacific Islander	9.85	10.17	30.26
Black, Non-Hispanic	11.41	7.98	16.49
White, Non-Hispanic	8.14	9.58	32.58

Not Accepted by First-choice Institution

Hispanic	18.36	5.07	16.62
Native American	Low n	Low n	Low n
Asian/Pacific Islander	4.17	13.7	44.73
Black, Non-Hispanic	15.94	7.26	13.13
White, Non-Hispanic	10.01	2.98	40.55

Accepted by First-choice Institution

	Advanced	No Degree
Hispanic	0.32	61.43
Native American	0	48.63
Asian/Pacific Islander	1.38	48.34
Black, Non-Hispanic	0.32	63.8
White, Non-Hispanic	1.52	48.18

Not Accepted by First-choice Institution

Hispanic	0	59.95
Native American	Low n	low n
Asian/Pacific Islander	6.99	30.41
Black, Non-Hispanic	0	63.67
White, Non-Hispanic	0.4	46.06

[*] Table includes only students who applied to a post-secondary institution.

Source: National Center for Educational Statistics, High School and Beyond, Data Access System (DAS).
TABLE 6 Minority admissions, UC Berkeley law School, 1994
Legend for Table:

A - Applications
B - Admitted
C - Admissions Ra
D - Enrolled
E - Yield

	A	B	C	D	E
Highest Academic Rank					

Asian	234	93	40%	31	33%
Black	13	13	100%	3	23%
Chicano and Latin American	47	34	72%	6	18%
Native American	8	5	63%	1	20%
Nonminority	1,432	520	36%	154	38%

Other

Asian	547	10	2%	6	60%
Black	426	72	17%	28	39%
Hispanic	485	50	10%	29	58%
Native American	60	9	15%	3	33%
Nonminority	1,924	17	1%	8	47%

Source: University of California, School of Law, Berkeley, Admissions Report, 1994.

TABLE 7 Applicants, Admits, and Matriculates, UC Medical Schools, 1992-1995

	Applicants	Admits	Matriculants
American/Alaska native	961	29	15
Black	6,649	44	169
Mexican American/Chicano	6,832	583	238
Puerto Rican (Mainland)	562	21	10
Asian/Pacific Island	45,089	1,408	733
Other Hispanic	3,669	163	98
Other Unidentified	4,286	102	58
Caucasian	60,297	1,913	1,032
Total	128,345	4,664	2,353

	Acceptance Rate	Yield
American/Alaska native	3.02%	51.71%
Black	6.68%	36.06%
Mexican American/Chicano	8.53%	40.82%
Puerto Rican (Mainland)	3.74%	47.61%
Asian/Pacific Island	3.12%	52.05%
Other Hispanic	4.44%	60.11%
Other Unidentified	2.38%	56.84%
Caucasian	3.17%	53.93%
Total	3.63%	50.45%

Source: Unpublished Tables, Office of the President, 1996b.

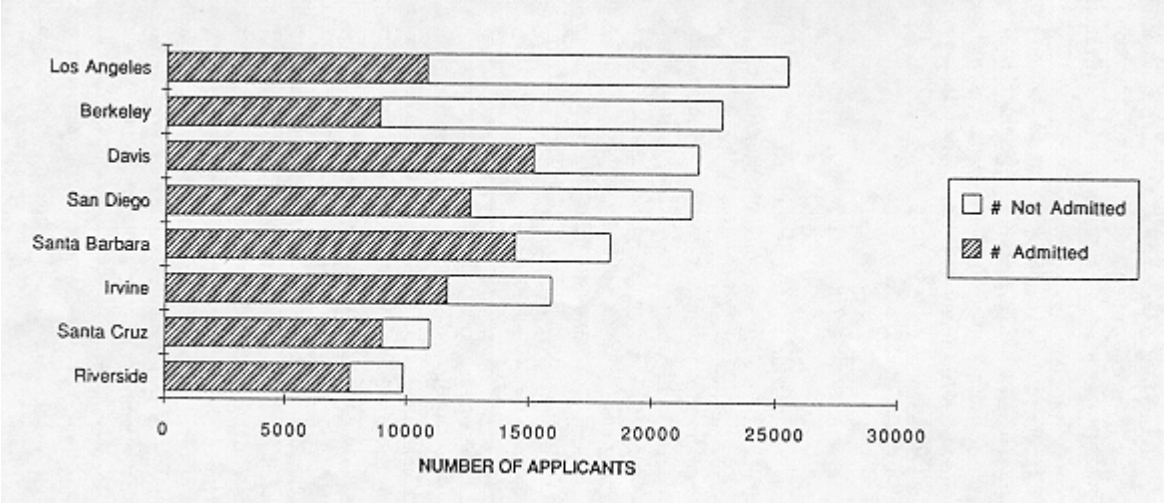

FIGURE 1; Admitted Students as Proportions of All Applications, Fall 1995

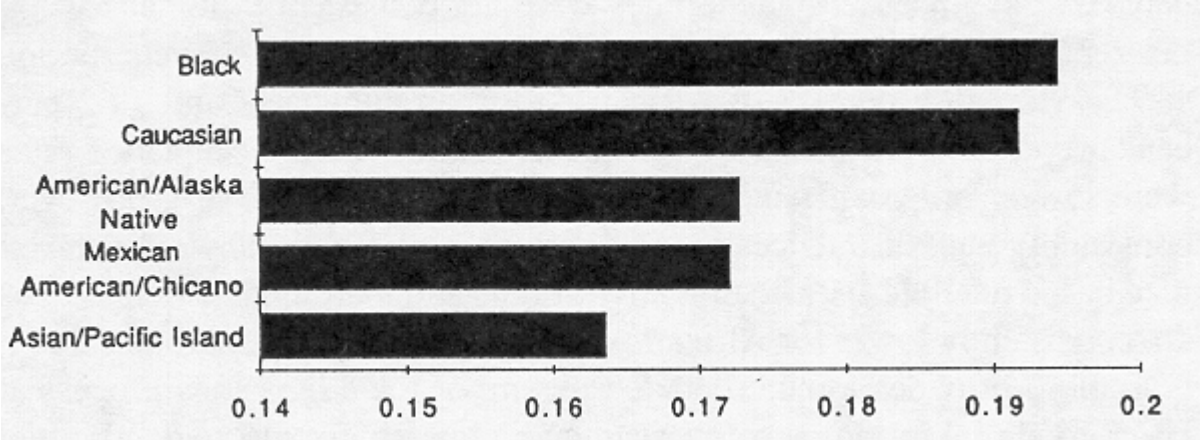

FIGURE 2; Admitted Students/Applications Received, UC Law Schools, 1992-1995

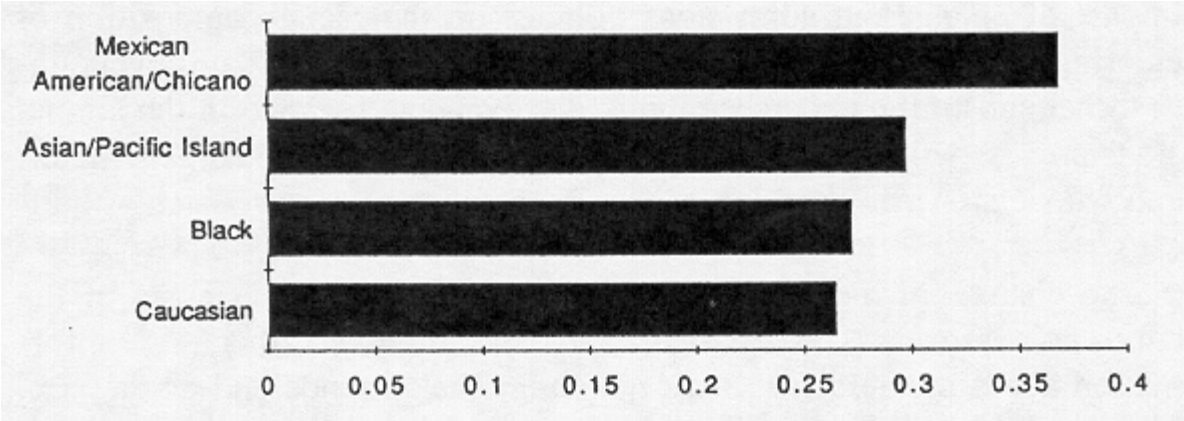

FIGURE 3; Matriculants/Admitted Students, UC Law Schools 1992-1995

GRAPH: FIGURE 4; Number Admits/Number of Applicants, UC Medical Schools, 1992-1995

GRAPH: FIGURE 5; UC Irvine Medical School Acceptance Rates by Race, 1990-1996

GRAPH: FIGURE 6; Acceptance, UC San Diego School of Medicine, 1992-1996

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