

# The Effect of Banning Affirmative Action on College Admissions Rules and Student Quality\*

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## Abstract

This paper assesses the extent to which schools in the University of California (UC) system were able to restore racial diversity among admitted students by changing their admissions rules to implicitly favor minorities after California's ban on race-based affirmative action. Using administrative data from the UC from before and after the ban on race-contingent admissions policies, we present evidence that UC campuses changed the weight given to SAT scores, grades and family background characteristics after the end of affirmative action, and that these changes were able to substantially (though far from completely) offset the fall in minority admissions rate after the ban on affirmative action. In addition, we explore the possible inefficiencies generated by these changes in the admissions process, and find that while the new admissions rules affected the composition of admitted students, it is not clear that overall student quality declined. These results have important implications in light of the declining number of public universities in the United States that practice race-based affirmative action.

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# 1 Introduction

In the last two decades, public universities in a growing number of states have stopped practicing race-based affirmative action in admissions as the result of various court rulings, voter initiatives and administrative decisions. In addition, many now believe that the United States Supreme Court will place further limits on affirmative action in higher education when it issues its ruling on *Fisher v. Texas* later this year. Given that university administrators remain committed to promoting racial diversity, a natural question is to what extent racial diversity can be maintained using race-neutral policies that do not run afoul of the legal and judicial constraints placed on traditional race-based affirmative action. Another important question is whether these race-neutral policies are likely to affect overall student quality. For example, if universities respond to bans on affirmative action by giving an admissions advantage to students from economically disadvantaged backgrounds, to what extent would this enable universities to promote racial diversity and what impact would such policies have on the quality of admitted students?

Knowing the answers to these questions is important not only for understanding the implications of eliminating race-based affirmative action but also because the U.S. Supreme Court's decision in *Grutter v. Bollinger* suggests that the use of race is only permissible if there has been "serious, good faith consideration of workable race-neutral alternatives that will achieve the diversity the university seeks." Thus, the legality of race-based affirmative action appears to hinge at least partly on the extent to which universities are able to successfully achieve racial diversity using race-neutral policies, and any evaluation of whether these policies are "workable" presumably must take into consideration their costs and benefits in terms of their impact on student quality.

In an effort to answer these questions, this paper examines the end of race-based affirmative action at the University of California (UC). The first threat to affirmative action at the University of California came in July 1995, when the Board of Regents of the University of California passed a resolution (SP-1), which stipulated that UCs would discontinue considering race in admissions by the beginning of 1997. However,

in November 1996, California voters passed Proposition 209 (Prop 209), which banned the use of racial preferences in university admissions. Prop 209 underwent various legal challenges until the Supreme Court denied further appeals in November 1997. Thus, the UC's incoming class of 1998 was the first to be admitted under the statewide ban on affirmative action.

Using administrative data from the University of California on every fall freshman applicant from 1995-2006, we document how UC schools changed their admissions rules after Prop 209 took effect, and we assess the extent to which these changes were able to restore the admissions rate of under-represented minorities (URMs). In addition, we investigate how the new admissions rules affected the average quality of the pool of admitted students in terms of SAT scores, high school GPA and predicted performance in college.

Consistent with previous research, we find that the removal of explicit racial preferences dramatically lowered the admissions rates of URMs relative to non-URMs at selective UC campuses. In addition, our results suggest that UC schools responded to the ban on race-based affirmative action by lowering the weight given to SAT scores and increasing the weight given to high school GPA and family background in determining admissions. While these changes were unable to restore URM admission rates to their pre-Prop 209 levels, our results suggest that the relative decline in URM admission rates would have been substantially larger had UC schools not made these changes to their admissions rules. At Berkeley, for example, our findings indicate that the the relative drop in URMs' admission rate after the Prop 209 would have been 5-8 percentage points larger had Berkeley made no other changes to its admission process. In addition, we find evidence that these changes in the admissions rules led to a meaningful shift in the composition of likely admits. Nonetheless, overall student quality (as measured by expected first-year college GPA) appears to have remained quite stable.

This paper proceeds as follows. Section 2 discusses the related literature. Section 3 describes our data and outlines how we estimate the changes in the admissions rule after Prop 209. Section 4 presents our estimates of how the admissions rule changed at each of

the eight UC campuses, documents the extent to which these changes were able to restore URMs' admission rates to their pre-Prop 209 levels, and explores the short-term effects of the changes in the estimated admissions rule on the quality of the pool of admitted students. Finally, Section 5 concludes.

## 2 Related Literature

Here we consider the related literature on affirmative action in higher education, with a particular focus on papers that address the effect of affirmative action on student quality.<sup>1</sup>

The theoretical literature on affirmative action draws a distinction between “color-sighted affirmative action”, wherein there are explicit racial preferences in admissions, and “color-blind affirmative action”, wherein colleges adopt race-neutral policies that implicitly favor minorities by giving an admissions preference to students who possess characteristics that are positively correlated with being a minority (see, for example, Fryer et al. (2008) and Ray and Sethi (2010)). Both forms of affirmative action stand in contrast to laissez-fair admission regimes in which race is not considered either explicitly or implicitly.

Since bans on affirmative action only prohibit the use of explicit racial preferences, we would expect universities to move from color-sighted to color-blind affirmative action in the wake of such bans. Building a model of college admissions, Chan and Eyster (2003) show that a move from color-sighted to color-blind affirmative action could decrease the average quality of admitted students (regardless of race) since color-blind affirmative action may lead admissions officers to partially ignore applicants' qualifications. Ray and Sethi (2010) additionally point out that color-blind affirmative action creates an incentive for admissions officers to adopt admissions policies that are non-monotone in the sense that, within each racial group, some students with lower scores are admitted while those with higher scores are rejected. In this case, average student quality will necessarily be

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<sup>1</sup>See Holzer and Neumark (2000) for a comprehensive review of the theoretical and empirical literature on affirmative action more generally.

lower under color-blind relative to color-sighted affirmative action. Additionally, building a model of college admissions with endogenous human capital investment, both Fryer et al. (2008) and Hickman (2009) show that, relative to color-sighted affirmative action, color-blind affirmative action may alter students' incentives to invest in human capital.

Thus, the theoretical literature suggests that if colleges adopt color-blind affirmative action policies after a ban on color-sighted affirmative action (like Prop 209), then this may affect student quality both in the short run (by altering the pool of admitted students) and in the long run (by changing incentives to invest in human capital). In this paper, we focus on the short-run impact of Prop 209 on the quality of admitted students. In a companion paper (Antonovics and Backes (2013a)), we examine the long-run impact of Prop 209 on human capital investment.

Similar to our paper, Long and Tienda (2008) examine how the admissions process changed at public universities in Texas after the affirmative action ban imposed by the 1996 *Hopwood* ruling, and like us find that these schools were unable to restore black and Hispanic applicants' share of admitted students using race-neutral alternatives. Our paper differs from theirs, however, in a number of important ways. First, Long and Tienda do not comprehensively assess the effect of the changes in the admissions process on student quality. Table 4 of their paper indicates that the new admissions rules led to a small reduction in the SAT/ACT scores of admitted students, but the paper does not otherwise examine the quality of admitted students. Second, the policy change in Texas was fundamentally different from that in California. In particular, a year after the University of Texas stopped using race-based affirmative action in admission, it introduced a top 10% plan in which students in the top 10% of their high school class were guaranteed admission to any Texas public university. California adopted a similar policy in 2001 (known as "Eligibility in a Local Context"), but this plan was significantly weaker than Texas's plan both in that the guarantee was only offered students in the top 4 percent of their high school class, and California's plan only guaranteed a student admission to at least one UC school (and not necessarily the school of his or her choice—as was the case in Texas). Thus, in California, the primary tool available to admissions offices to

increase minority admission rates after the ban on race-based affirmative action was to change the weights given to various student characteristics in the admissions process.

Yagan (2012) also examines the effect of Prop 209 on the admission rates of minorities relative to non-minorities, but focusses law school admissions at Berkeley and UCLA. He finds that while black admission rates to these two schools fell dramatically after Prop 209, but his data do not allow him to fully examine the extent to which admissions officers may have changed the weight given to various student characteristics in the admissions process or the possible effect of these changes on overall student quality.

Finally, we note that one strand of the literature on affirmative action examines whether affirmative action creates a mismatch between the quality of the average student and the quality of the average minority (see, for example, Sander (2004), Rothstein and Yoon (2008), and Arcidiacono et al. (2012)). The hypothesis is that aggressive affirmative action programs destine minority admits to be at the bottom of their incoming class in terms of academic credentials. As a result, the claim is that these students are likely to do poorly (relative to their white peers) in college, which in turn may adversely affect their later life outcomes. In this paper, we focus on student quality rather than on the extent of mismatch between a student's academic credentials and that of his or her peers.

### 3 Data and Empirical Strategy

We begin by investigating how each of the eight UC campuses changed its admissions rule in response to Prop 209. To do so, we use administrative data on every fall freshman applicant to the UC from 1995-2006. The data contain individual-level information on each student's race, high school GPA, SAT scores, parental income, and parental education.<sup>2</sup>

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<sup>2</sup>The measure of high school GPA available in the data is UC adjusted high school GPA, which gives increased weight to AP courses, and only counts certain kinds of courses. SAT scores are reported at their post-1995 re-centered values. Parental income and parental education are reported by the student, and parental education is the highest education level of either parent. Unfortunately, gender is not included in the data. Additional information about this publicly available dataset can be found in Antonovics and Sander (2013).

In addition, the data report the campuses to which each student applied, the campuses that accepted the applicant, and the campus at which the student enrolled, if any.<sup>3</sup> Since these data were provided by the University of California Office of the President, we refer to them as the UCOP data.

In an effort to protect student privacy, the UC Office of the President collapsed many important variables into descriptive categories before releasing the data. Thus, for example, SAT scores are reported in seven bins and high school GPA is reported in four bins. To facilitate comparison across these different measures of academic ability, we assign the midpoint of each bin to be the student's test score (or grade) and then standardize so each is mean zero with a standard deviation of one. Parental income and parental education are also reported in bins (11 for parental income and 8 for parental education), and we again assign to each student the midpoint of his or her bin. Year of application is grouped into three-year cohorts (1995-1997, 1998-2000, 2001-2003 and 2004-2006). By design, the second three-year application cohort begins in 1998, the year the ban on racial preferences was implemented. Finally, race is collapsed into four categories: white, Asian, URM and other/unknown. The URM category includes Native Americans, blacks, Chicanos and Latinos, which are the primary groups that received preferential treatment based on race before Prop 209. The other/unknown category includes both students who indicate that their race falls outside the categories used by the university, as well as students who choose not to reveal their race (a group that grew substantially after Prop 209 went into effect). In our empirical analysis, we compare admissions rates of URMs with the combined set of whites, Asians and other/unknown. Our primary reason for grouping students in the other/unknown category with whites and Asians is that the average characteristics of students in the other/unknown group are very close to the average characteristics of whites and Asians. Nonetheless, our results are not sensitive to dropping the other/unknown group.

A potential problem with using a sample composed of UC applicants is that the

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<sup>3</sup>The 8 UC campuses are Berkeley, Los Angeles, San Diego, Santa Barbara, Davis, Irvine, Santa Cruz and Riverside.

application decision could itself be affected by the affirmative action ban, leading to sample selection bias. While we are not aware of any direct evidence of changes in application rates following affirmative action bans, a handful of studies have used data from SAT test-takers to proxy for college application. For example, Dickson (2006), finds that removal of affirmative action in Texas led to a decline in the share of minority students taking either the ACT or SAT. On the other hand, Furstenberg (2010) shows that the demographic characteristics of SAT takers are generally uncorrelated with the introduction of the bans on affirmative action in California and Texas. In addition, Antonovics and Backes (2013b) show that although URMs were less likely to send SAT scores to selective UCs after Prop 209, the magnitude of the change is small, and there is no evidence of a decline in URM score-sending to UC campuses generally.

Turning to our data on UC applicants, Table 1 presents basic summary statistics of the UCOP data used in our analysis.<sup>4</sup> As might be expected, relative to non-URMs, URMs who applied to the UC have lower average SAT scores, lower average high school GPAs and come from families with lower parental income and education. The bottom panel of Table 1 also presents the admission rates for URMs and non-URMs at each of the eight UC campuses for each admission cohort. As the table shows, there was a substantial drop in URMs' relative chances of admission starting with the 1998-2000 application cohort, especially at the more selective UC schools.

Letting  $A_i = 1$  if an applicant to a given school is admitted and  $A_i = 0$  if the applicant is not admitted, we estimate a probit model of the likelihood that a student who applies to a given school is admitted. That is, we estimate

$$\Pr(A_i = 1) = \Phi(\delta_1 URM_i + \mathbf{X}'_i \delta_2 + \delta_3 (URM_i \times Post_i) + (\mathbf{X}'_i Post_i) \delta_4), \quad (1)$$

where  $URM_i$  is an indicator that takes on a value of one if the student is black, Hispanic or Native American (with whites and Asians being the excluded group),  $\mathbf{X}_i$  is a vector of student-level characteristics used in determining admissions (SAT scores, high school GPA, parental income and parental education) plus a constant term,  $Post_i$  is an indicator

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<sup>4</sup>Here we present the unstandardized versions of SAT scores and high school GPA.



that takes on a value of one if the student applied after Prop 209 went into effect (though in practice, we include indicators for each of the three post-Prop 209 time periods: 1998-2000, 2001-2003 or 2004-2006), and  $\Phi(\cdot)$  is the standard normal cumulative distribution function. Our estimates of Equation (1) form the backbone of most of our empirical analysis, with  $\delta_3$  and  $\delta_4$  capturing the change in the predictive power of race and other student-level characteristics after the implementation of Prop 209.<sup>5</sup>

Of course, campuses have a much richer set of information about students than we do. For example, we have no information on the quality of student essays or the extracurricular activities in which students are involved. Thus, we cannot estimate the true admissions rule used at each campus. Nonetheless, to the extent that we know many of the most salient pieces of information used in the admission process, we are broadly able to characterize the admissions process for each application cohort and its changes over time. In addition, we can use our estimates of Equation (1) to explore how changes in the importance of SAT scores, high school GPA and family background characteristics in predicting admissions affected a) the relative admission rates of URMs and b) the overall quality of students admitted to each of the UC campuses.

[work this into previous paragraph] Rothstein (2004) shows that in the absence of a rich set of controls, SAT scores serve in part as a proxy for student background characteristics.

## 4 Results

Figure 1 presents our estimates of Equation (1), with the height of each bar representing the average change in students' probability of admission given a one-unit change in the various predictors of admission both before and after the implementation of Prop 209. We present our results graphically in order to facilitate comparisons across the different UC campuses and across the different predictors of admissions.<sup>6</sup>

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<sup>5</sup>Our results are qualitatively similar if  $\mathbf{X}_i$  also includes intended major.

<sup>6</sup>Appendix Table A.1 shows the marginal effects for a model in which we include separate indicators for each post-Prop 209 application cohort.

As panel (a) suggests, substantial racial preferences were in place prior to Prop 209, especially at the more selective UC schools. For example, at Berkeley, URMs were over 40 percentage points more likely to be admitted than similarly qualified non-URMs. After Prop 209 the association between race and students' likelihood of admission fell dramatically. Interestingly, however, even after Prop 209 URMs were still more likely than similarly qualified non-URMs to be admitted to the UC schools to which they applied. At Berkeley, for example, in the 1998-2000 application cohort, URMs were about 13 percentage points more likely to be admitted than similarly qualified non-URMs. We note that this could arise even if admissions officers were not practicing race-based affirmative action after Prop 209, but still used admissions rules that favored students who possessed characteristics correlated with being a URM that we do not observe in our data.

Panels (b)-(f) focus on the importance of various student academic and family background characteristics in predicting admissions and on how the importance of those factors changed after Prop 209. As Panel (b) shows, SAT math scores became a much less important predictor of admissions after Prop 209, particularly at the more selective UC schools. At Berkeley, for example, prior to Prop 209, a one standard deviation increase in SAT math scores was associated with almost an 11 percentage point increase in a student's chances of admission. After Prop 209, however, this association fell to less than 6 percentage points. At Berkeley and UCLA, the two schools that appear to have practiced the most extensive affirmative action prior to Prop 209, we also see that SAT verbal scores became a less important predictor of admission, though this pattern is not consistent across all eight campuses. We also see in Panels (d)-(f) that UC adjusted high school GPA generally became a more important predictor of admission. Prior to Prop 209, for example, a one standard deviation increase in UC adjusted high school GPA was associated with a 14 percentage point increase in the probability of admission to Berkeley, and by 2004-2006 this increased to 22 percentage points. In addition, we see evidence that, all else equal, students from disadvantaged backgrounds were more likely to receive offers of admission after Prop 209. That is, the negative association between admission

and both parental income and parental education grew substantially after Prop 209. At Berkeley and UCLA, for example, the negative association between parental income and admission doubled, and at UCSD it nearly tripled.

As mentioned above, using these coefficient estimates to make inferences about the precise changes in the admissions rules at each school is complicated by the fact that we do not observe all of the criteria used by admissions officers in determining admissions. For example, the fact that high school GPA became a more important predictor of admission could reflect the possibility that after Prop 209 an increased preference was given to students from disadvantaged high schools, where applicants to the UC were likely to have a relatively high GPA. Nonetheless, it is clear from Figure 1 that student characteristics associated with SAT test scores (including SAT scores themselves) generally became less important in determining admissions while those associated with high school GPA and being from a disadvantaged background became more important in determining admissions.

A natural question is whether the apparent changes in admissions process shown in Figure 1 occurred because of Prop 209 or because admissions officers were responding to changes in the relationship between student characteristics and college performance. For example, if SAT scores became less predictive of college success and if high school GPA became more predictive of college success, then we might expect admissions officers to place less weight on SAT scores and more weight on high school GPA. We investigate this possibility in Table 2 in which we present the coefficient estimates from a linear regression of first-year college GPA on SAT scores, high school GPA, family background characteristics and intended college major for students who enroll at each UC school (except UCSC, where data on first-year college GPA are missing from 1995-2000).<sup>7</sup> As the table reveals, SAT scores actually became a *more* important predictor of first-year college GPA, while high school GPA became a *less* important predictor of college performance, particularly at the more selective UC schools.<sup>8</sup> Thus, it is clear that neither the apparent

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<sup>7</sup>Adding intended college major is important because students with high SAT math scores tend to major in the sciences where first-year college GPA is relatively low.

<sup>8</sup>Appendix tables A.4 and A.5 show results separately for URMs and non-URMs. Generally, the

decrease in the weight given to SAT scores nor the apparent increase in the weight placed on high school GPA in determining admissions was driven by changes in how well SAT scores and high school GPA predicted college performance. In fact, it seems likely that the changes importance of SAT scores and high school GPA in predicting first-year college GPA were driven by the changes in the admissions process after Prop 209 (rather than visa versa).

Finally, it is worth pointing out that our results are largely consistent with the theoretical prediction in Fryer et al. (2008) that schools that are prohibited from using race as an explicit criterion in admission will place less emphasis on traits that predict academic performance and more emphasis on social traits that proxy for race. In order see which student characteristics proxy for race, Table 3 shows the coefficient estimates from a linear regression of an indicator for whether a student is a URM on SAT scores, high school GPA, parental income and parental education for all applicants to the UC system from 1995-2006.<sup>9</sup> As the table reveals, SAT math scores, parental education and parental income all negatively predict whether a student is a URM, and consistent with Fryer et al. (2008), Figure 1 indicates that students with high SAT math scores, high parental education and high parental income were less likely to be admitted after Prop 209. Although Table 3 also suggests that SAT verbal scores positively predict whether a student is a URM, this finding hinges on the fact that Asians are included in the omitted racial category. If Asians are dropped from the analysis, then the coefficient on SAT verbal scores becomes negative and statistically significant. Thus, for example, decreasing the weight placed on SAT verbal scores in the admissions process would tend to benefit both URMs and Asians. In light of the fact that Asians are overrepresented at the UC relative to California's population, this may have created a tension at many UC campuses and may explain why the importance of SAT verbal scores declined at some campuses and increased at others.

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results in Table 2 hold for both URMs and non-URMs, though the time trends are less obvious for URMs.

<sup>9</sup>The predictors of race are very consistent over time and across campuses.

The only finding that is at odds with the predictions of Fryer et al. (2008) is that we find that high school GPA became a more important predictor of admission after Prop 209 even though Table 3 indicates that high school GPA is negatively associated with being a URM. The magnitude of the relationship between high school GPA and being a URM, however, is extremely small, suggesting that the increased emphasis UC schools placed on high school GPA would have had a negligible negative impact on the admission rate of URMs. In the next section, we address the combined impact of the change in the weights given to SAT scores, high school GPA, parental education and parental income and find that together they worked to significantly increase the admission rate of URMs.

#### 4.1 Changes in URMs' Relative Admission Rates

How did the decreased importance of SAT scores and the increased importance of high school GPA and family background affect the admission rates of students from different racial groups? To examine this, we use the estimates from a modified version of Equation (1) that includes indicators for each application cohort (rather than just an indicator for post Prop 209) to simulate the changes over time in each student's predicted probability of admission due to the estimated changes in the admissions rules treating all students as if they are white (that is, setting  $URM=0$ ). Thus, any changes over time in a student's predicted probability of admission are driven by the changes in the weights given to SAT scores, high school GPA and family background characteristics. We then compute the change in the average predicted probability of admission for students in each racial group in each time period, and determine how the predicted admission rate of URMs and Asians changed relative to that of whites. In order to insure that the changes over time are not driven by changes in the characteristics of the applicant pool, we conduct these simulations only for students who apply in the 1995-1997 application cohort, though our results are not sensitive to which application cohort we use.

Figure 2 shows the results of this simulation.<sup>10</sup> The figure focusses on the top four UCs (as measured by the average math SAT scores of admitted students), since these

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<sup>10</sup>Table A.2 shows the numbers used to generate Figure 2.

schools practiced the most extensive affirmative action prior to Prop 209, and so were the most constrained by the passage of Prop 209. As the figure indicates, the change in the importance of SAT scores, high school GPA and family background in predicting admission appears to have had a large, positive and statistically significant impact on URM's relative chances of admission at each of the four schools. At Berkeley, for example, we estimate that by 2004-2006, the decrease in the importance of SAT scores and the increase in the importance of high school GPA and family background in predicting admissions led URM's relative chances of admission to increase by 7 percentage points compared to 1995-1997. In addition, this increase generally appears to have grown over time. At UCLA for example, the increase in URM's relative chances of admission grew from about 6 percentage points by 1998-2000 to about 11 percentage points by 2004-2006 (compared to 1995-1997). Thus, to the extent that campuses changed their admissions rules to implicitly favor URM's after Prop 209, Figure 2 suggests that they got better at doing so over time.

On one hand, the magnitude of these changes is quite small. For example, prior to Prop 209, Figure 1 shows that URM's were approximately 42 percentage points more likely to be admitted to Berkeley than similarly qualified non-URM's, and after Prop 209 this gap fell to about 11 percentage points. If we interpret this 31 percentage point drop in URM's relative chances of admission as the direct result of the end of racial preferences (with the admissions rule otherwise held constant), then it's clear that the small increases in URM's relative chances of admission shown in Figure 2 are nowhere near big enough to restore URM's admissions rates to their pre Prop 209 levels. Indeed, we know there was a large observed drop URM's relative chances of admission after Prop 209.

On the other hand, the fall in URM's relative admissions rates would have been substantially larger had UC schools not adopted race-neutral changes to their admissions rules. For example, as Figure 2 suggests, the change in the weights given to SAT scores, high school GPA and family background at Berkeley increased URM's chances of admission 5-8 percentage points relative to whites, so that Berkeley was able to restore roughly 16-26 percent of the 31 percentage point direct fall in URM's relative chances of admis-

sion. The magnitudes are also quite large in terms of raw numbers. For example, given that there were approximately 20,000 in-state fall freshman URM applicants to Berkeley in the 2004-2006 cohort, the 7 percentage point increase in URMs' relative chances of admission by 2004-2006 translates into about 1,400 additional URM admits over this three-year time period (and about 40 percent of those who are admitted enroll).

Interestingly, the estimated changes in the admissions rule also appear to have positively affected Asians' relative chances of admissions, though the magnitude is considerably smaller than for URMs. For example, by 2004-2006, the estimated changes in the admissions rule at Berkeley indicate an approximate 2 percentage point increase in Asians' relative chances of admission compared to 1995-1997. This increase is driven by the fact that Asian applicants to the UC have lower parental income and parental education than otherwise similar whites. Thus, the end of affirmative action benefitted Asians applying to the UC both because the ban on affirmative action opened up more slots for Asian applicants and because the admissions rules changed in ways that implicitly favored Asians relative to whites.

Finally, as Table A.2 indicates, the changes in URMs' and Asians' predicted probability of admissions (relative to whites) at the remaining four campuses was generally negative, though the magnitude of the decline was typically quite small.

## **4.2 The Effect on the Pool of Admitted Students**

Any change in a college's admission rule necessarily affects the pool of admitted students. Given the apparent changes in UC schools' admissions rules after Prop 209, an obvious concern is whether the decreased emphasis on SAT scores (and/or their correlates) and the increased emphasis on high school GPA and family background (and/or their correlates) negatively affected the average quality of admitted students. Examining the changes in the characteristics actual admits over time, however, is complicated by the fact that a) the characteristics of applicant pool may have shifted over time and b) the UC schools became more selective during this time period. For example, Table 1 shows that between 1995-1997 and 2004-2006, the probability of admission for non-URMs fell at every campus

except UC Riverside. Since average student quality is likely to increase as schools become more selective, it is necessary to hold selectivity constant when trying assess the effect of changes in a school's admission rule on student quality.

With this in mind, we use the estimated admission rule for the 1995-1997 cohort to identify the pool of likely URM and non-URM admits given the 1995-1997 admission rate for each racial group. Then, using this same group of students (those who applied in 1995-1997), we identify the pool of likely admits using the 2004-2006 estimated admission rule, but hold the admissions rate for URMs and non-URMs at their 1995-1997 level.<sup>11</sup> Doing so allows us to assess the effect of the changes in the weights given to SAT scores, high school GPA and family background on the pool of likely admits, holding constant the characteristics of the applicant pool and overall selectivity.<sup>12</sup>

Table 4 presents our results for URMs.<sup>13</sup> Beginning with the top row of Table 4, our results suggest that the changes in the admissions rules between 1995-1997 and 2004-2006 led to a 20.4 percentage point drop in the average SAT math scores of likely admits. In order to gauge the magnitude of this change, the third and fourth rows show the average SAT math scores and the standard deviation of math SAT scores of likely admits using the 1995-1997 estimated admission rule. As the table reveals, math SAT scores fall by 3.4 percent (relative to the 1995-1997 mean of 607.7), or about 29 percent of a standard

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<sup>11</sup>In this section of the paper, the estimated admissions rule for each applicant cohort is obtained using a modified version of Equation 1 that includes indicators for each applicant cohort and the interaction of those indicators with student-level characteristics. This model generally fits the data very well. Appendix Table A.3 shows the probability we correctly predict admits and non-admits for each school over the entire 1995-2006 time period.

<sup>12</sup>Our estimates are not sensitive to the application cohort we use to conduct these simulations. See the appendix tables A.6-A.11 for results using the 1998-2000, 2001-2003 and 2004-2006 application cohorts.

<sup>13</sup>We were unable to conduct this analysis for UCSC and UCR because we had missing values for a larger fraction of applicants than were actually admitted (due to the very high admissions rate at both schools), making it difficult to determine the pool of likely admits. Given the high admissions rate at these schools, however, it is unlikely that the estimated changes in the admissions rule would have had a large effect on the pool of admitted students (since most applicants were admitted, regardless of the rule).



deviation (relative to the 1995-1997 standard deviation of 71.4). In addition, the drop in SAT verbal scores is of a similar magnitude. At UCLA, UCSD and UCSB, the drop in SAT math scores and SAT verbal scores is about half as large as the drop for Berkeley, both in terms of the actual number of points and relative to the 1995-1997 mean and standard deviation. At UCD and UCI, we also see a fall in SAT math and SAT verbal scores among predicted admits, though the magnitude is quite small.

In addition, we find that the high school GPA of likely admits increases over time. As Table 4 indicates, the average high school GPA of likely admits at Berkeley increased by about 0.11 between 1995-1997 and 2004-2006, representing a 3 percent increase relative to the mean high school GPA among predicted admits in 1995-1997, or about 27 percent of a standard deviation. The increase in the high school GPA among likely admits at UCLA is about half as large. We also see an increase at UCSD, though the magnitude is quite small, and changes to the admissions rules at UCD, UCI and UCSB yielded no discernible change in high school GPA.

In terms of family background characteristics, among likely URM admits at Berkeley, the fraction of students who have at least one parent with a college degree declines by 6 percentage points (a 12 percent drop relative to the mean of 50 percent) and the average family income declines by \$3,500 (a 7 percent drop relative to the mean of \$52,500).<sup>14</sup> Interestingly, the change in family background characteristics brought about by the changes in the admissions rule at UCLA, UCSD, UCD and UCSB is similar in magnitude to the change at Berkeley.

Thus, several broad patterns emerge from Table 4. First, the most salient changes in the pool of predicted admits occurs at the most selective UC schools. Second, balancing the moderate fall in the SAT scores was an increase in the high school GPA of predicted URM admits. Finally, across all UC campuses, predicted URM admits increasingly came from relatively disadvantaged backgrounds. Together, these results suggest that the changes in UC's admissions rules over time have lead to a meaningful shift in the composition of the student body.

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<sup>14</sup>To obtain these numbers from Table 4, note that  $\$3,500=0.7 \times 50k$ , and  $\$52,500=1.05 \times 50k$ .

As a way to partially examine the overall impact of these compositional changes on the college performance of likely admits, we predict the first-year college GPA of likely admits based on their academic and family background characteristics. In particular, using the pool of students who enroll at each campus in the 1995-1997 cohort, we regress first-year college GPA on SAT scores, high school GPA, parental income, parental education and intended major.<sup>15</sup> We then use the results of this regression to predict, for each likely admit at each campus, expected first-year GPA. Table 4 presents the change in predicted first-year college GPA of likely admits due to the changes in the weights given to SAT scores, high school GPA and family background between 1995-1997 and 2004-2006. Note that since the weights used to calculate predicted first-year college GPA are the same for all students, this exercise is best seen as a way to summarize the changes in SAT scores, high school GPA and family background characteristics brought about by the changes in the admissions process over time. As the table suggests, there is almost no change in expected first-year college GPA. The stability of first-year college GPA is driven by the fact the deleterious effect of the fall in the SAT scores of predicted admits is counterbalanced by the increase in high school GPA.

As a robustness check, we also examine whether the stability of predicted first-year GPA is sensitive to whether we allow the predictors of first-year GPA to vary by application cohort and race, and find no qualitative changes in our findings.<sup>16</sup> In addition, we also examine predicted cumulative college GPA, the predicted probability finishing a bachelor's degree, predicted time to degree (in quarters) and intended major at the time of application, and again find no meaningful changes in any of these measures of college performance.<sup>17</sup>

Table 5 shows a similar set of results for non-URMs. As the table reveals, the changes

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<sup>15</sup>In appendix tables A.6-A.11, in which we reproduce tables 4 and 5 for the other application cohorts, we predict first-year college GPA based on students who enroll in the corresponding application cohort in order to verify that our results do not change even though the predictors of first-year GPA shift over time.

<sup>16</sup>See tables A.12-A.19.

<sup>17</sup>See tables A.12-A.19.

in the characteristics of likely non-URM admits are very similar to the changes in the characteristics of likely URM admits. Thus, the patterns revealed in Table 4 are not specific to one racial group, but rather reflect broader changes in the characteristics of predicted admits.

One possible problem with the analysis above is that our model may not adequately capture all of the changes in the admissions rule after Prop 209. Thus, we also examine how the academic ability of actual admits changes over time. Of course, changes in the quality of actual admits may also reflect changes in the characteristics of the applicant pool and changes in overall selectivity. Nonetheless, we feel it is a useful check on our results. The best measure of academic ability in our data is a student's index score. A student's index score is a weighted average of a student's SAT math scores, SAT verbal scores and high school GPA, where the weights were determined by regressing students' first-year college GPA on these three variables. The index score was created by the UC and is the only continuous measure of student quality in our data. Given the increase in the overall selectivity of UC schools over this time period, one would expect average index scores to increase over time. Indeed, Figure 3, which plots kernel density estimates of the distribution of index scores among actual admits in each time period, reveals that student quality increases over time. In addition, to the extent that schools relied more heavily on family background characteristics in determining admissions after Prop 209, you might also expect the variance of students' index scores to also increase over time. There is, however, little evidence of this in Figure 3. Indeed, in Table A.20, we see that the log of the ratio of the 90th and 10th percentiles of the index distribution is stable over this time period. Thus, consistent with our findings in Table 4, we do not find strong evidence that students' overall academic ability (as measured by the combination of SAT scores and high school GPA) was negatively affected by the introduction of color-blind affirmative action.

Several caveats are worth mentioning. First, although we do not find evidence of a change in predicted college performance, we emphasize that this stability masks a substantial compositional change in the student body, and it's possible that this com-

positional change is important in ways we are unable to measure. In addition, although the predicted college performance of the average likely admit remains stable after Prop 209, it is possible that there were more substantial changes in the quality of the *marginal* admit. Unfortunately, when we use our model to assess the changes in the quality of the marginal admit (for example, by looking at student quality among the bottom 20 percent of admits), our results are not stable across campuses and application cohorts, so we are unable to draw any definitive conclusions.<sup>18</sup>

## 5 Summary

Preventing universities from using race as an explicit criterion in admissions does not prevent universities from valuing diversity, and a natural response to bans on affirmative action is the adoption of race-neutral policies that increase diversity by increasing the admissions advantage given to students who possess characteristics that are correlated with being from an underrepresented group. A natural question is the extent to which these policies can restore racial diversity and how the changes to the admissions process will affect the quality of admitted students. Indeed, a number of scholars have pointed out that since bans on affirmative action give schools an incentive to place a greater weight on non-academic factors in determining admissions (such as being from a disadvantaged background), they could lower the quality of students who are admitted, regardless of race.

In this paper, we provide evidence that UC schools responded to California's ban on affirmative action by decreasing the weight placed on SAT scores and increasing the weight given to high school GPA and family background characteristics in determining admissions. In addition, we find that the changes in the weights given to student characteristics substantially increased the fraction of minority students predicted to be admitted. For example, although the admission rate of URMs remained well below its

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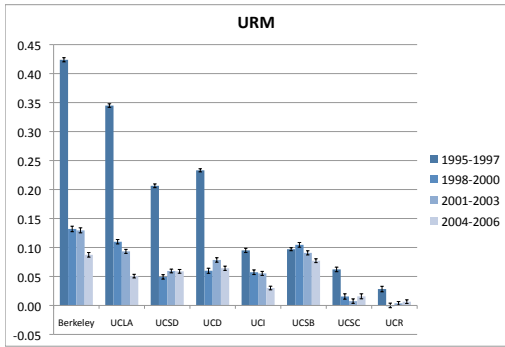
<sup>18</sup>The instability of our estimates is likely driven by the small number of URM admits, especially after Prop 209.

pre-Prop 209 level, our estimates suggest that at Berkeley as much as 26 percent of admissions advantage lost by URMs after Prop 209 was restored through race-neutral changes to the admissions process. Put differently, the observed fall in URMs' relative chances of admission after Prop 209 would have been substantially larger had Berkeley not changed its admissions process to implicitly favor URMs. In addition, these changes to the admissions process had a meaningful effect on the composition of admitted students. The new rules led to a modest decrease in the average SAT scores of admitted students, and a modest increase in their high school GPA. In addition, admitted students were more likely to be from relatively disadvantaged families. Nonetheless, we find almost no change in the predicted first-year college GPA of predicted admits. Thus, while the characteristics of admitted students changed, it is not clear that overall student quality declined.

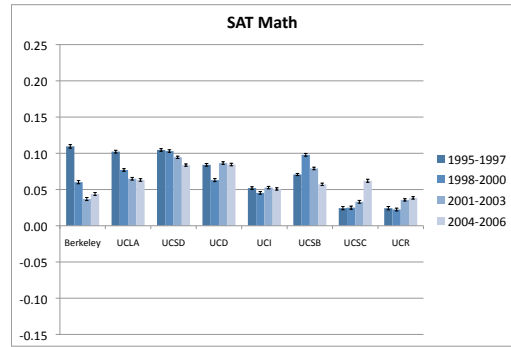
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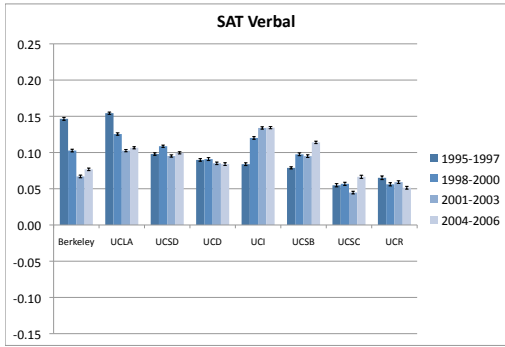
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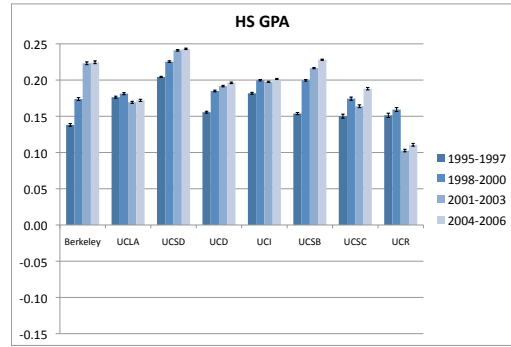
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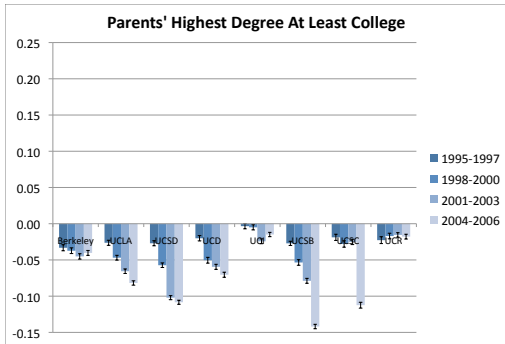
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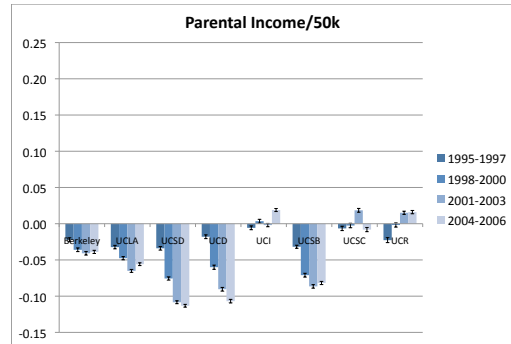
(c)



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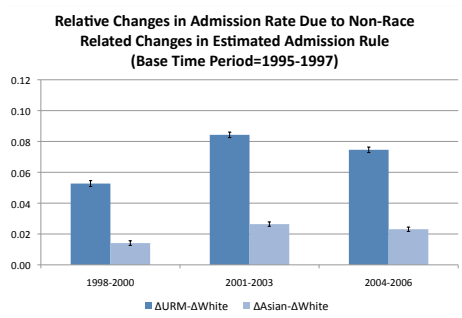


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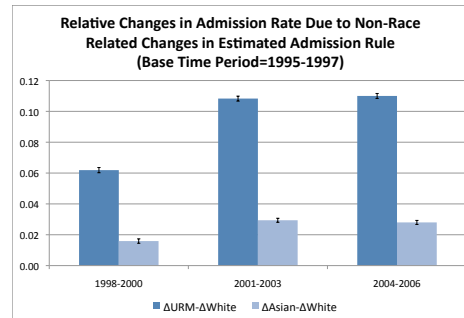


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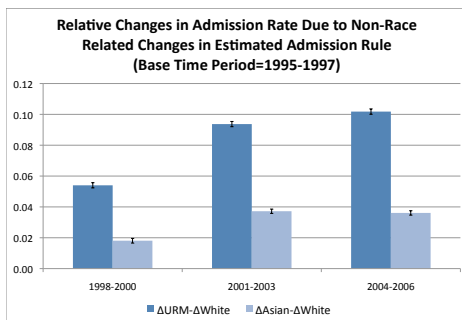
Figure 1: The height of each bar shows the average change in students' predicted probability of admission given a one-unit change in the relevant student characteristic. Estimates derived from a probit model of a student's likelihood of admission. See text for details. Standard errors are indicated by standard error bars.



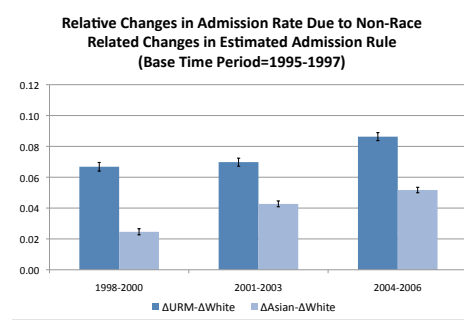
(a) Berkeley



(b) UCLA



(c) UCSD



(d) UCD

Figure 2: The height of each bar shows the change in the predicted probability of admission for URMs relative to whites and for Asians relative to whites in each time period (relative to 1995-1997), treating all students as if they were white (that is, setting  $URM=0$ ). Simulation conducted for students in the 1995-1997 applicant cohort. Estimates derived from a probit model of a student's likelihood of admission. See text for details. Standard errors indicated by standard error bars.



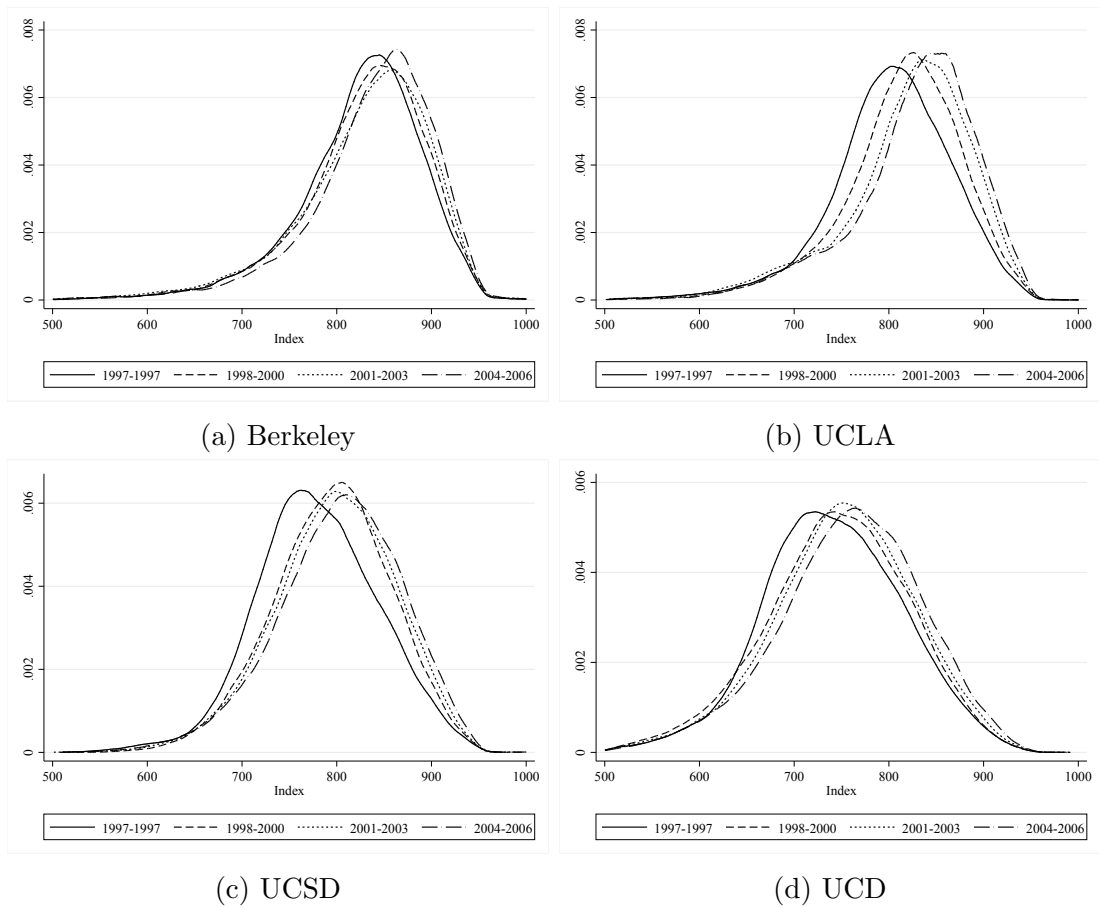


Figure 3: Shows the true distribution of index scores at different campuses for non-URMs admitted during different time periods.

Table 1: UCOP Summary Statistics

	Non-URM				URM			
	'95-'97	'98-'00	'01-'03	'04-'06	'95-'97	'98-'00	'01-'03	'04-'06
SAT Math	614 (.86)	617 (.86)	620 (.86)	619 (.87)	528 (.93)	534 (.93)	532 (.93)	528 (.92)
SAT Verbal	580 (.95)	583 (.94)	582 (.94)	584 (.94)	525 (.93)	527 (.93)	519 (.93)	519 (.92)
High School GPA	3.7 (.5)	3.7 (.49)	3.7 (.49)	3.7 (.48)	3.4 (.48)	3.5 (.49)	3.5 (.49)	3.5 (.48)
Parental Income/50,000	1.3 (.66)	1.4 (.66)	1.5 (.66)	1.5 (.68)	.91 (.61)	.99 (.63)	1 (.65)	1 (.65)
Parent At Least College	.73 (.44)	.72 (.45)	.72 (.45)	.69 (.46)	.37 (.48)	.36 (.48)	.34 (.47)	.31 (.46)
Observations	110,072	121,598	131,539	124,880	26,694	27,707	35,274	41,457
Admitted to Berkeley	0.32	0.28	0.24	0.25	0.52	0.25	0.24	0.20
Admitted to UCLA	0.38	0.32	0.26	0.27	0.47	0.25	0.21	0.18
Admitted to UCSD	0.59	0.44	0.43	0.45	0.58	0.32	0.34	0.36
Admitted to UCD	0.72	0.67	0.64	0.63	0.85	0.62	0.58	0.58
Admitted to UCI	0.73	0.63	0.59	0.62	0.68	0.53	0.46	0.44
Admitted to UCSB	0.78	0.54	0.51	0.54	0.78	0.52	0.49	0.52
Admitted to UCSC	0.84	0.82	0.84	0.77	0.84	0.76	0.75	0.69
Admitted to UCR	0.85	0.88	0.91	0.89	0.81	0.82	0.83	0.82

Notes: Includes all students who applied to any UC school from 1995-2006 with complete data on SAT scores, high school GPA, parental income and parental education. Non-URM includes white, Asian and other/unknown. URM includes blacks, Hispanics, and Native Americans. Standard deviations in parentheses.

Table 2: Predictors of First-Year College GPA

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB	UCR
SAT Math	0.05*** (0.01)	0.10*** (0.01)	0.10*** (0.01)	0.10*** (0.01)	0.10*** (0.01)	0.07*** (0.01)	0.04*** (0.01)
SAT Math*(1998-2000)	0.01 (0.01)	-0.02** (0.01)	-0.00 (0.01)	0.00 (0.01)	-0.01 (0.01)	-0.02** (0.01)	-0.01 (0.02)
SAT Math*(2001-2003)	0.06*** (0.01)	-0.03*** (0.01)	0.03** (0.01)	0.00 (0.01)	-0.01 (0.01)	-0.01 (0.01)	0.01 (0.01)
SAT Math*(2004-2006)	0.04*** (0.01)	-0.05*** (0.01)	0.01 (0.01)	0.01 (0.01)	-0.03*** (0.01)	0.01 (0.01)	0.02 (0.01)
SAT Verbal	0.09*** (0.01)	0.11*** (0.01)	0.09*** (0.01)	0.11*** (0.01)	0.15*** (0.01)	0.12*** (0.01)	0.10*** (0.01)
SAT Verbal*(1998-2000)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.02** (0.01)	-0.03*** (0.01)	0.00 (0.01)	0.02 (0.02)
SAT Verbal*(2001-2003)	0.03*** (0.01)	0.03** (0.01)	0.01 (0.01)	-0.01 (0.01)	-0.00 (0.01)	0.01 (0.01)	0.00 (0.02)
SAT Verbal*(2006-2006)	0.04*** (0.01)	0.02* (0.01)	0.00 (0.01)	0.01 (0.01)	0.01 (0.01)	-0.00 (0.01)	0.03* (0.02)
HS GPA	0.23*** (0.01)	0.23*** (0.01)	0.23*** (0.01)	0.23*** (0.01)	0.23*** (0.01)	0.22*** (0.01)	0.24*** (0.01)
HS GPA*(1998-2000)	-0.03*** (0.01)	-0.02** (0.01)	0.03** (0.01)	-0.01 (0.01)	-0.04*** (0.01)	0.00 (0.01)	-0.02 (0.01)
HS GPA*(2001-2003)	-0.06*** (0.01)	-0.02 (0.01)	0.00 (0.01)	0.01 (0.01)	-0.01 (0.01)	0.00 (0.01)	0.01 (0.01)
HS GPA*(2004-2006)	-0.05*** (0.01)	-0.01 (0.01)	-0.02** (0.01)	0.02** (0.01)	-0.02** (0.01)	0.01 (0.01)	0.02 (0.01)
Parent College	0.06*** (0.01)	0.06*** (0.01)	0.07*** (0.01)	0.05*** (0.01)	0.01 (0.01)	0.08*** (0.01)	0.08*** (0.02)
Parent College*(1998-2000)	-0.01 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.02 (0.02)	0.03 (0.02)	-0.00 (0.02)	-0.03 (0.03)
Parent College*(2001-2003)	-0.01 (0.02)	0.01 (0.02)	0.00 (0.02)	0.01 (0.02)	0.06*** (0.02)	-0.01 (0.02)	-0.03 (0.03)
Parent College*(2004-2006)	-0.00 (0.02)	0.01 (0.02)	-0.01 (0.02)	0.02 (0.02)	0.03 (0.02)	0.04** (0.02)	-0.01 (0.03)
Income/50,000	0.02** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.01 (0.01)	0.02*** (0.01)	0.01 (0.02)
Income/50,000*(1998-2000)	0.03** (0.01)	0.01 (0.01)	0.03** (0.01)	-0.01 (0.01)	0.02 (0.01)	0.02 (0.01)	0.02 (0.02)
Income/50,000*(2001-2003)	0.01 (0.01)	0.01 (0.01)	0.02 (0.01)	0.00 (0.01)	0.01 (0.01)	0.01 (0.01)	0.02 (0.02)
Income/50,000*(2004-2006)	0.01 (0.01)	0.01 (0.01)	0.03** (0.01)	0.00 (0.01)	0.01 (0.01)	0.01 (0.01)	0.04* (0.02)

*(continues)*

Table 2: (continued)

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB	UCR
Science Major	-0.24*** (0.01)	-0.20*** (0.01)	-0.12*** (0.01)	-0.13*** (0.01)	-0.25*** (0.01)	-0.16*** (0.01)	-0.17*** (0.02)
Science Major*(1998-2000)	0.03* (0.02)	-0.05*** (0.02)	-0.01 (0.02)	-0.02 (0.02)	-0.04** (0.02)	-0.06*** (0.02)	-0.01 (0.03)
Science Major*(2001-2003)	0.03 (0.02)	-0.01 (0.02)	-0.01 (0.02)	-0.06*** (0.02)	-0.01 (0.02)	0.04** (0.02)	-0.00 (0.03)
Science Major*(2004-2006)	0.04** (0.02)	0.01 (0.02)	0.00 (0.02)	-0.01 (0.02)	0.03 (0.02)	0.02 (0.02)	0.01 (0.03)
Soc Science Major	0.06*** (0.02)	-0.04*** (0.01)	0.04** (0.02)	0.09*** (0.02)	-0.07*** (0.02)	-0.01 (0.02)	0.06** (0.03)
Soc Science Major*(1998-2000)	0.02 (0.03)	-0.01 (0.02)	0.01 (0.03)	0.02 (0.03)	0.03 (0.03)	-0.02 (0.02)	0.02 (0.04)
Soc Science Major*(2001-2003)	0.00 (0.03)	0.03 (0.02)	-0.00 (0.02)	-0.05** (0.02)	0.08*** (0.02)	-0.03 (0.02)	-0.04 (0.04)
Soc Science Major*(2004-2006)	-0.00 (0.03)	0.06*** (0.02)	-0.00 (0.02)	-0.05** (0.02)	0.06** (0.02)	-0.05** (0.02)	-0.06 (0.04)
1998-2000	-0.04** (0.02)	0.02 (0.02)	-0.07*** (0.02)	0.01 (0.02)	-0.10*** (0.02)	-0.01 (0.02)	-0.10*** (0.03)
2001-2003	0.01 (0.02)	0.05*** (0.02)	-0.06*** (0.02)	0.06** (0.02)	-0.11*** (0.02)	-0.01 (0.02)	-0.08** (0.03)
2004-2006	0.02 (0.02)	0.06*** (0.02)	-0.01 (0.02)	0.03 (0.02)	-0.11*** (0.02)	-0.01 (0.02)	-0.08** (0.03)
Constant	2.88*** (0.01)	2.82*** (0.01)	2.75*** (0.02)	2.74*** (0.02)	3.00*** (0.02)	2.89*** (0.02)	2.92*** (0.02)
Observations	34,065	39,533	34,767	40,171	35,972	34,881	27,099
R-squared	0.20	0.25	0.18	0.23	0.20	0.26	0.18
Mean GPA (1995-2006)	3.14	3.09	2.96	2.77	2.81	2.90	2.62

Notes: OLS estimates of first-year GPA. First-year GPA was not reported at UCSC for 1995-2000, so UCSC is omitted from this table.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table 3: Predictors of URM

	URM
SAT Math	-0.124*** (0.001)
SAT Verbal	0.010*** (0.001)
HS GPA	-0.004*** (0.001)
Parent College	-0.159*** (0.001)
Income/50,000	-0.044*** (0.001)

Notes: Standard errors in parentheses. Shows the coefficients from a linear regression of an indicator for whether an applicant to the UC was a URM on academic achievement and family background characteristics. The data span the years 1995-2006. \*\*\* significant at the 99 percent level.

Table 4: Changes in the Characteristics of Predicted URM Admits

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
SAT Math						
Change	-20.4*** (1.4)	-9.2*** (1.3)	-9.2*** (1.5)	-3.1** (1.5)	-1.6 (1.6)	-8.0*** (1.3)
Average	607.7 (71.4)	586.5 (75.1)	586.6 (77.7)	549.0 (85.7)	544.8 (82.3)	533.5 (81.3)
SAT Verbal						
Change	-26.0*** (1.4)	-11.1*** (1.3)	-8.3*** (1.6)	-3.2** (1.5)	0.8 (1.5)	-6.8*** (1.3)
Average	605.4 (73.2)	582.7 (76.3)	578.7 (82.7)	541.2 (87.2)	537.8 (80.3)	531.7 (82.1)
HS GPA						
Change	0.11*** (0.01)	0.05*** (0.01)	0.02** (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
Average	3.83 (0.41)	3.80 (0.40)	3.76 (0.41)	3.52 (0.48)	3.56 (0.46)	3.41 (0.46)
Parent College						
Change	-0.06*** (0.01)	-0.06*** (0.01)	-0.06*** (0.01)	-0.04*** (0.01)	0.00 (0.01)	-0.07*** (0.01)
Average	0.50 (0.50)	0.43 (0.50)	0.49 (0.50)	0.43 (0.49)	0.36 (0.48)	0.40 (0.49)
Income/50k						
Change	-0.07*** (0.01)	-0.06*** (0.01)	-0.09*** (0.01)	-0.06*** (0.01)	0.02 (0.01)	-0.10*** (0.01)
Average	1.05 (0.64)	0.99 (0.63)	1.06 (0.64)	0.98 (0.63)	0.91 (0.62)	0.98 (0.63)
First-Year GPA <sup>†</sup>						
Change	0.01*** (0.00)	-0.01* (0.00)	-0.01*** (0.00)	-0.01* (0.01)	-0.00 (0.01)	-0.02*** (0.00)
Average	2.98 (0.24)	2.87 (0.24)	2.81 (0.25)	2.60 (0.33)	2.73 (0.29)	2.68 (0.28)

Notes: “Change” shows the change in the characteristics of URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average characteristics of URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 1995-1997 cohort, with the admission rate fixed at the 1995-1997 non-URM admission rate.

<sup>†</sup> Predicted, see text for details.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table 5: Changes in the Characteristics of Predicted Non-URM Admits

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
SAT Math						
Change	-13.9*** (0.5)	-5.3*** (0.5)	-4.3*** (0.5)	-3.2*** (0.6)	-1.2* (0.6)	-3.8*** (0.6)
Average	695.3 (39.2)	677.5 (50.4)	656.0 (60.9)	633.2 (70.1)	624.3 (75.2)	603.0 (72.5)
SAT Verbal						
Change	-26.0*** (0.6)	-8.5*** (0.6)	-4.2*** (0.6)	-4.4*** (0.7)	0.6 (0.7)	-1.6*** (0.6)
Average	678.7 (47.3)	649.1 (60.8)	618.7 (76.7)	593.5 (84.3)	571.3 (85.7)	571.6 (80.2)
HS GPA						
Change	0.09*** (0.00)	0.02*** (0.00)	0.00* (0.00)	0.01* (0.00)	0.00 (0.00)	0.00 (0.00)
Average	4.14 (0.20)	4.08 (0.24)	3.98 (0.27)	3.79 (0.43)	3.69 (0.45)	3.53 (0.48)
Parent College						
Change	-0.04*** (0.00)	-0.06*** (0.00)	-0.04*** (0.00)	-0.03*** (0.00)	-0.00 (0.00)	-0.03*** (0.00)
Average	0.83 (0.38)	0.79 (0.41)	0.79 (0.41)	0.74 (0.44)	0.70 (0.46)	0.76 (0.42)
Income/50k						
Change	-0.06*** (0.01)	-0.09*** (0.01)	-0.06*** (0.01)	-0.06*** (0.01)	0.01* (0.01)	-0.04*** (0.00)
Average	1.40 (0.64)	1.35 (0.66)	1.38 (0.65)	1.35 (0.65)	1.21 (0.67)	1.40 (0.64)
First-Year GPA <sup>†</sup>						
Change	0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.00 (0.00)	-0.01*** (0.00)
Average	3.23 (0.16)	3.19 (0.17)	3.04 (0.19)	2.89 (0.26)	2.93 (0.29)	2.88 (0.28)

Notes: “Change” shows the change in the characteristics of URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average characteristics of non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 1995-1997 cohort, with the admission rate fixed at the 1995-1997 URM admission rate.

<sup>†</sup> Predicted, see text for details.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

# A Appendix

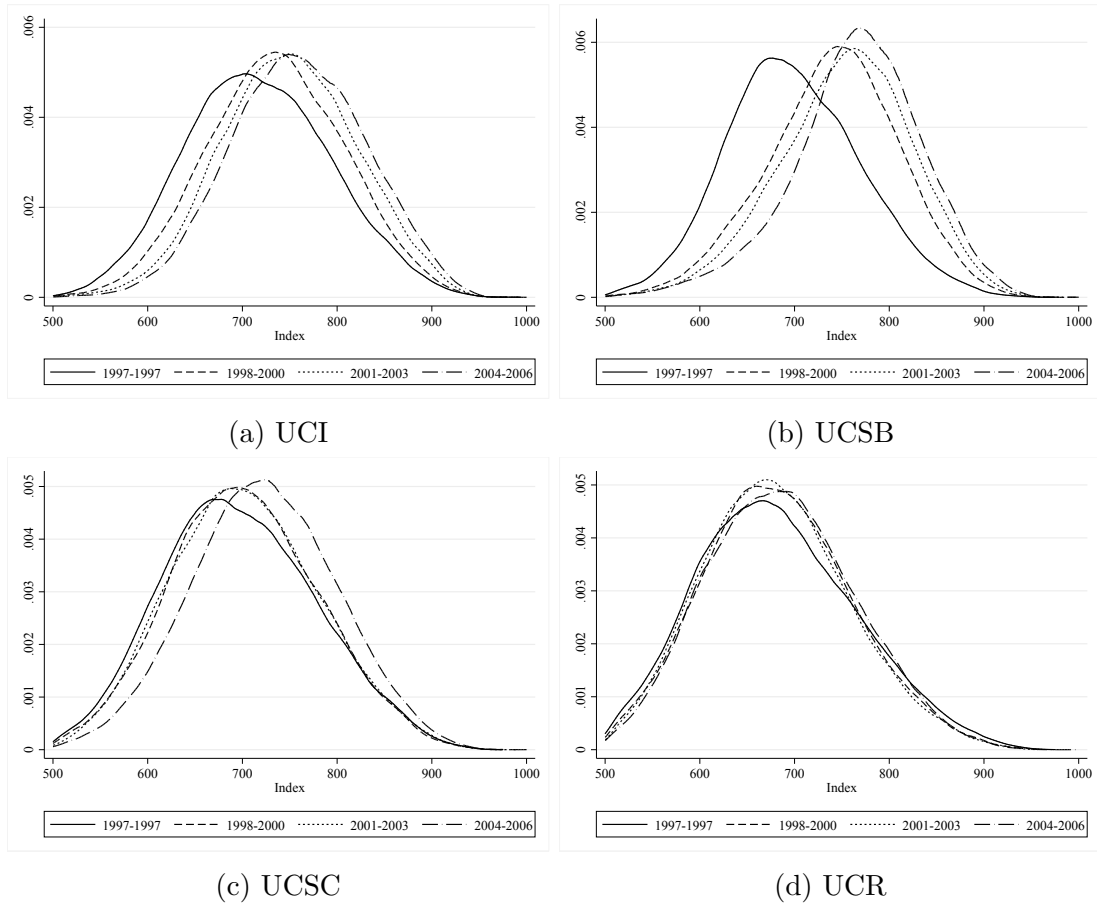


Figure A.1: Shows the true distribution of index scores at different campuses for non-URMs admitted during different time periods.



Table A.1: Predictors of Admission to Each UC Campuses

	Berkeley (1)	UCLA (2)	UCSD (3)	UCD (4)	UCI (5)	UCSB (6)	UCSC (7)	UCR (8)
<b>URM</b>								
1995-1997	0.42*** (0.00)	0.34*** (0.00)	0.21*** (0.00)	0.23*** (0.00)	0.09*** (0.00)	0.10*** (0.00)	0.06*** (0.00)	0.03*** (0.00)
1998-2000	0.13*** (0.00)	0.11*** (0.00)	0.05*** (0.00)	0.06*** (0.00)	0.06*** (0.00)	0.10*** (0.00)	0.02*** (0.00)	0.00 (0.00)
2001-2003	0.13*** (0.00)	0.09*** (0.00)	0.06*** (0.00)	0.08*** (0.00)	0.06*** (0.00)	0.09*** (0.00)	0.01** (0.00)	0.00 (0.00)
2004-2006	0.09*** (0.00)	0.05*** (0.00)	0.06*** (0.00)	0.06*** (0.00)	0.03*** (0.00)	0.08*** (0.00)	0.02*** (0.00)	0.01** (0.00)
<b>SAT Math</b>								
1995-1997	0.11*** (0.00)	0.10*** (0.00)	0.10*** (0.00)	0.08*** (0.00)	0.05*** (0.00)	0.07*** (0.00)	0.02*** (0.00)	0.02*** (0.00)
1998-2000	0.06*** (0.00)	0.08*** (0.00)	0.10*** (0.00)	0.06*** (0.00)	0.05*** (0.00)	0.10*** (0.00)	0.02*** (0.00)	0.02*** (0.00)
2001-2003	0.04*** (0.00)	0.06*** (0.00)	0.09*** (0.00)	0.09*** (0.00)	0.05*** (0.00)	0.08*** (0.00)	0.03*** (0.00)	0.04*** (0.00)
2004-2006	0.04*** (0.00)	0.06*** (0.00)	0.08*** (0.00)	0.08*** (0.00)	0.05*** (0.00)	0.06*** (0.00)	0.06*** (0.00)	0.04*** (0.00)
<b>SAT Verbal</b>								
1995-1997	0.15*** (0.00)	0.15*** (0.00)	0.10*** (0.00)	0.09*** (0.00)	0.08*** (0.00)	0.08*** (0.00)	0.05*** (0.00)	0.07*** (0.00)
1998-2000	0.10*** (0.00)	0.13*** (0.00)	0.11*** (0.00)	0.09*** (0.00)	0.12*** (0.00)	0.10*** (0.00)	0.06*** (0.00)	0.06*** (0.00)
2001-2003	0.07*** (0.00)	0.10*** (0.00)	0.10*** (0.00)	0.09*** (0.00)	0.13*** (0.00)	0.10*** (0.00)	0.04*** (0.00)	0.06*** (0.00)
2004-2006	0.08*** (0.00)	0.11*** (0.00)	0.10*** (0.00)	0.08*** (0.00)	0.13*** (0.00)	0.11*** (0.00)	0.07*** (0.00)	0.05*** (0.00)
<b>HS GPA</b>								
1995-1997	0.14*** (0.00)	0.18*** (0.00)	0.20*** (0.00)	0.16*** (0.00)	0.18*** (0.00)	0.15*** (0.00)	0.15*** (0.00)	0.15*** (0.00)
1998-2000	0.17*** (0.00)	0.18*** (0.00)	0.23*** (0.00)	0.18*** (0.00)	0.20*** (0.00)	0.20*** (0.00)	0.17*** (0.00)	0.16*** (0.00)
2001-2003	0.22*** (0.00)	0.17*** (0.00)	0.24*** (0.00)	0.19*** (0.00)	0.20*** (0.00)	0.22*** (0.00)	0.16*** (0.00)	0.10*** (0.00)
2004-2006	0.22*** (0.00)	0.17*** (0.00)	0.24*** (0.00)	0.20*** (0.00)	0.20*** (0.00)	0.23*** (0.00)	0.19*** (0.00)	0.11*** (0.00)
<b>Income/50,000</b>								
1995-1997	-0.02*** (0.00)	-0.03*** (0.00)	-0.03*** (0.00)	-0.02*** (0.00)	-0.01** (0.00)	-0.03*** (0.00)	-0.01** (0.00)	-0.02*** (0.00)
1998-2000	-0.04*** (0.00)	-0.05*** (0.00)	-0.08*** (0.00)	-0.06*** (0.00)	0.00 (0.00)	-0.07*** (0.00)	-0.00 (0.00)	-0.00 (0.00)
2001-2003	-0.04*** (0.00)	-0.07*** (0.00)	-0.11*** (0.00)	-0.09*** (0.00)	-0.00 (0.00)	-0.09*** (0.00)	0.02*** (0.00)	0.02*** (0.00)
2004-2006	-0.04*** (0.00)	-0.06*** (0.00)	-0.11*** (0.00)	-0.11*** (0.00)	0.02*** (0.00)	-0.08*** (0.00)	-0.01*** (0.00)	0.02*** (0.00)
<b>Parent College</b>								
1995-1997	-0.03*** (0.00)	-0.03*** (0.00)	-0.03*** (0.00)	-0.02*** (0.00)	-0.00 (0.00)	-0.03*** (0.00)	-0.02*** (0.00)	-0.02*** (0.00)
1998-2000	-0.04*** (0.00)	-0.05*** (0.00)	-0.06*** (0.00)	-0.05*** (0.00)	-0.01 (0.00)	-0.05*** (0.00)	-0.03*** (0.00)	-0.02*** (0.00)
2001-2003	-0.05*** (0.00)	-0.07*** (0.00)	-0.10*** (0.00)	-0.06*** (0.00)	-0.02*** (0.00)	-0.08*** (0.00)	-0.03*** (0.00)	-0.02*** (0.00)
2004-2006	-0.04*** (0.00)	-0.08*** (0.00)	-0.11*** (0.00)	-0.07*** (0.00)	-0.01*** (0.00)	-0.14*** (0.00)	-0.11*** (0.00)	-0.02*** (0.00)

Notes: Each cell shows the average change in students' likelihood of admission given a one-unit change in the relevant student characteristic. Estimates generated from a probit model of a student's likelihood of admission. See text for details. Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Table A.2: Change in the Predicted Probability of Admission for Each Racial Group Relative to 1995-1997, Treating All Students As White ( $URM=0$ )

	Berkeley (1)	UCLA (2)	UCSD (3)	UCD (4)	UCI (5)	UCSB (6)	UCSC (7)	UCR (8)
<b>1998-2000</b>								
URM	-0.01*** (0.00)	-0.03*** (0.00)	-0.10*** (0.00)	0.01 (0.00)	-0.13*** (0.00)	-0.27*** (0.00)	-0.04*** (0.01)	0.01** (0.01)
Asian	-0.05*** (0.00)	-0.08*** (0.00)	-0.13*** (0.00)	-0.04*** (0.00)	-0.12*** (0.00)	-0.29*** (0.00)	-0.04*** (0.00)	0.02*** (0.00)
White	-0.06*** (0.00)	-0.09*** (0.00)	-0.15*** (0.00)	-0.06*** (0.00)	-0.10*** (0.00)	-0.29*** (0.00)	-0.04*** (0.00)	0.02*** (0.00)
<b>2001-2003</b>								
URM	-0.01*** (0.00)	-0.05*** (0.00)	-0.08*** (0.00)	-0.02*** (0.00)	-0.18*** (0.00)	-0.30*** (0.00)	-0.04*** (0.01)	0.02*** (0.01)
Asian	-0.07*** (0.00)	-0.12*** (0.00)	-0.14*** (0.00)	-0.05*** (0.00)	-0.18*** (0.00)	-0.34*** (0.00)	-0.02*** (0.00)	0.04*** (0.00)
White	-0.10*** (0.00)	-0.15*** (0.00)	-0.18*** (0.00)	-0.09*** (0.00)	-0.17*** (0.00)	-0.35*** (0.00)	-0.02*** (0.00)	0.05*** (0.00)
<b>2004-2006</b>								
URM	-0.02*** (0.00)	-0.05*** (0.00)	-0.08*** (0.00)	-0.03*** (0.00)	-0.21*** (0.00)	-0.29*** (0.00)	-0.13*** (0.01)	0.00 (0.01)
Asian	-0.07*** (0.00)	-0.14*** (0.00)	-0.14*** (0.00)	-0.07*** (0.00)	-0.21*** (0.00)	-0.36*** (0.00)	-0.12*** (0.00)	0.02*** (0.00)
White	-0.10*** (0.00)	-0.16*** (0.00)	-0.18*** (0.00)	-0.12*** (0.00)	-0.18*** (0.00)	-0.36*** (0.00)	-0.12*** (0.00)	0.03*** (0.00)
<b>Relative Changes</b>								
URM-White (1998-2000)	0.05*** (0.00)	0.06*** (0.00)	0.05*** (0.00)	0.07*** (0.00)	-0.02*** (0.00)	0.02*** (0.00)	-0.00 (0.00)	-0.01 (0.00)
URM-White (2001-2003)	0.08*** (0.00)	0.11*** (0.00)	0.09*** (0.00)	0.07*** (0.00)	-0.02*** (0.00)	0.05*** (0.00)	-0.02*** (0.00)	-0.03*** (0.00)
URM-White (2004-2006)	0.07*** (0.00)	0.11*** (0.00)	0.10*** (0.00)	0.09*** (0.00)	-0.03*** (0.00)	0.07*** (0.00)	-0.01** (0.00)	-0.03*** (0.00)
Asian-White (1998-2000)	0.01*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	0.02*** (0.00)	-0.02*** (0.00)	-0.00 (0.00)	-0.00* (0.00)	-0.00* (0.00)
Asian-White (2001-2003)	0.03*** (0.00)	0.03*** (0.00)	0.04*** (0.00)	0.04*** (0.00)	-0.02*** (0.00)	0.00** (0.00)	-0.00 (0.00)	-0.01*** (0.00)
Asian-White (2004-2006)	0.02*** (0.00)	0.03*** (0.00)	0.04*** (0.00)	0.05*** (0.00)	-0.03*** (0.00)	-0.00* (0.00)	-0.00 (0.00)	-0.00** (0.00)

Notes: Shows the change in predicted probability of admission for students in the 1995-1997 cohort due to the changes in the estimated admissions rule between the relevant time period and 1995-1997, treating all students as if they were white (that is, setting  $URM=0$ ). The final set of rows shows the relative changes for the different racial groups in each time period. Estimates derived from a probit model of a student's likelihood of admission. See text for details. Standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table A.3: Probability That Our Model Correctly Predicts Admits and Non-Admits

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB	UCSC	UCR
Admits	0.571	0.657	0.821	0.879	0.869	0.850	0.952	0.997
Non-Admits	0.897	0.900	0.837	0.652	0.761	0.736	0.320	0.028

Notes: Shows the probability that our model correctly predicts admits and non-admits over the entire time period we examine, 1995-2006.

Table A.4: Predictors of First-Year College GPA, Non-URMs

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB	UCR
SAT Math	0.05*** (0.01)	0.09*** (0.01)	0.09*** (0.01)	0.11*** (0.01)	0.10*** (0.01)	0.07*** (0.01)	0.04*** (0.01)
SAT Math*(1998-2000)	0.03* (0.02)	-0.02 (0.01)	0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)	-0.02* (0.01)	-0.01 (0.02)
SAT Math*(2001-2003)	0.06*** (0.02)	-0.02 (0.01)	0.02 (0.01)	0.00 (0.01)	-0.02** (0.01)	-0.00 (0.01)	-0.01 (0.02)
SAT Math*(2004-2006)	0.03* (0.02)	-0.05*** (0.01)	0.01 (0.01)	0.01 (0.01)	-0.04*** (0.01)	0.00 (0.01)	-0.00 (0.02)
SAT Verbal	0.08*** (0.01)	0.10*** (0.01)	0.08*** (0.01)	0.11*** (0.01)	0.15*** (0.01)	0.12*** (0.01)	0.10*** (0.01)
SAT Verbal*(1998-2000)	0.02* (0.01)	0.01 (0.01)	0.01 (0.01)	0.03** (0.01)	-0.03*** (0.01)	0.00 (0.01)	0.02 (0.02)
SAT Verbal*(2001-2003)	0.04*** (0.01)	0.03*** (0.01)	0.02* (0.01)	-0.01 (0.01)	-0.00 (0.01)	0.00 (0.01)	-0.01 (0.02)
SAT Verbal*(2006-2006)	0.06*** (0.01)	0.03** (0.01)	0.01 (0.01)	0.02 (0.01)	0.01 (0.01)	-0.02 (0.01)	0.02 (0.02)
HS GPA	0.27*** (0.01)	0.24*** (0.01)	0.23*** (0.01)	0.23*** (0.01)	0.23*** (0.01)	0.22*** (0.01)	0.24*** (0.01)
HS GPA*(1998-2000)	-0.06*** (0.01)	-0.03*** (0.01)	0.03** (0.01)	-0.01 (0.01)	-0.03*** (0.01)	0.01 (0.01)	-0.01 (0.02)
HS GPA*(2001-2003)	-0.08*** (0.02)	-0.04*** (0.01)	-0.00 (0.01)	0.02** (0.01)	-0.01 (0.01)	0.02* (0.01)	0.03* (0.02)
HS GPA*(2004-2006)	-0.07*** (0.02)	-0.03** (0.01)	-0.02 (0.01)	0.03*** (0.01)	-0.01 (0.01)	0.03** (0.01)	0.03* (0.02)
Parent College	0.03* (0.02)	0.03* (0.01)	0.06*** (0.02)	0.06*** (0.02)	-0.01 (0.01)	0.08*** (0.02)	0.08*** (0.03)
Parent College*(1998-2000)	0.01 (0.02)	0.02 (0.02)	-0.00 (0.02)	-0.03 (0.02)	0.03 (0.02)	-0.01 (0.02)	-0.04 (0.03)
Parent College*(2001-2003)	0.01 (0.02)	0.02 (0.02)	-0.00 (0.02)	-0.01 (0.02)	0.05** (0.02)	-0.02 (0.02)	-0.06* (0.03)
Parent College*(2004-2006)	0.02 (0.02)	0.01 (0.02)	-0.01 (0.02)	0.00 (0.02)	0.02 (0.02)	0.00 (0.02)	-0.06* (0.03)
Income/50,000	0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)	0.03** (0.01)	0.01 (0.01)	0.03** (0.01)	0.01 (0.02)
Income/50,000*(1998-2000)	0.02 (0.01)	0.01 (0.01)	0.03* (0.01)	-0.00 (0.02)	0.02 (0.02)	0.01 (0.01)	0.03 (0.02)
Income/50,000*(2001-2003)	-0.01 (0.02)	0.00 (0.01)	0.01 (0.01)	0.01 (0.02)	0.00 (0.02)	0.01 (0.02)	0.01 (0.02)
Income/50,000*(2004-2006)	0.00 (0.01)	0.01 (0.01)	0.02 (0.01)	-0.01 (0.02)	0.01 (0.02)	-0.00 (0.02)	0.03 (0.02)

*(continues)*

Table A.4: (continued)

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB	UCR
Science Major	-0.24*** (0.01)	-0.21*** (0.01)	-0.11*** (0.01)	-0.14*** (0.01)	-0.23*** (0.01)	-0.16*** (0.01)	-0.16*** (0.03)
Science Major*(1998-2000)	0.03* (0.02)	-0.03* (0.02)	-0.02 (0.02)	-0.02 (0.02)	-0.05** (0.02)	-0.05** (0.02)	-0.01 (0.03)
Science Major*(2001-2003)	0.03 (0.02)	-0.00 (0.02)	-0.01 (0.02)	-0.06*** (0.02)	-0.02 (0.02)	0.06*** (0.02)	-0.01 (0.03)
Science Major*(2004-2006)	0.05** (0.02)	0.04** (0.02)	0.00 (0.02)	0.00 (0.02)	0.02 (0.02)	0.05** (0.02)	0.01 (0.03)
Soc Science Major	0.08*** (0.02)	-0.04** (0.02)	0.05*** (0.02)	0.10*** (0.02)	-0.06*** (0.02)	-0.02 (0.02)	0.10*** (0.04)
Soc Science Major*(1998-2000)	-0.02 (0.03)	-0.00 (0.02)	0.00 (0.03)	0.01 (0.03)	0.02 (0.03)	-0.01 (0.03)	-0.03 (0.05)
Soc Science Major*(2001-2003)	0.00 (0.03)	0.04 (0.02)	-0.01 (0.03)	-0.07*** (0.03)	0.06** (0.03)	-0.02 (0.03)	-0.05 (0.05)
Soc Science Major*(2004-2006)	-0.02 (0.03)	0.07*** (0.02)	-0.01 (0.03)	-0.06** (0.03)	0.05* (0.03)	-0.04 (0.03)	-0.10** (0.05)
1998-2000	-0.04 (0.03)	-0.00 (0.02)	-0.06*** (0.02)	0.02 (0.02)	-0.10*** (0.02)	0.01 (0.03)	-0.09** (0.04)
2001-2003	0.02 (0.03)	0.05** (0.02)	-0.03 (0.02)	0.07*** (0.02)	-0.08*** (0.02)	0.03 (0.03)	-0.02 (0.04)
2004-2006	0.02 (0.03)	0.05** (0.02)	0.00 (0.02)	0.05** (0.02)	-0.10*** (0.02)	0.05* (0.03)	-0.02 (0.04)
Constant	2.87*** (0.02)	2.88*** (0.02)	2.76*** (0.02)	2.74*** (0.02)	3.00*** (0.02)	2.89*** (0.02)	2.92*** (0.03)
Observations	28,064	31,268	30,263	34,042	30,677	27,211	18,709
R-squared	0.17	0.19	0.15	0.23	0.19	0.23	0.17
Mean GPA (1995-2006)	3.20	3.16	3.00	2.81	2.84	2.97	2.67

Notes: OLS estimates of first-year GPA. First-year GPA was not reported at UCSC for 1995-2000, so UCSC is omitted from this table.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table A.5: Predictors of First-Year College GPA, URM's

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB	UCR
SAT Math	-0.01 (0.02)	0.08*** (0.01)	0.06** (0.02)	0.06** (0.02)	0.08*** (0.02)	0.08*** (0.02)	0.03 (0.03)
SAT Math*(1998-2000)	-0.02 (0.03)	-0.01 (0.02)	-0.00 (0.04)	0.02 (0.03)	-0.05 (0.03)	-0.04 (0.03)	0.01 (0.03)
SAT Math*(2001-2003)	0.07** (0.03)	-0.05** (0.02)	0.06* (0.03)	-0.03 (0.03)	-0.01 (0.03)	-0.04 (0.03)	0.01 (0.03)
SAT Math*(2004-2006)	0.07** (0.03)	-0.05** (0.02)	0.03 (0.03)	0.00 (0.03)	-0.02 (0.03)	-0.01 (0.02)	0.03 (0.03)
SAT Verbal	0.11*** (0.02)	0.11*** (0.01)	0.13*** (0.02)	0.14*** (0.02)	0.17*** (0.02)	0.10*** (0.02)	0.11*** (0.03)
SAT Verbal*(1998-2000)	-0.02 (0.03)	-0.01 (0.02)	0.01 (0.03)	-0.02 (0.03)	0.00 (0.03)	-0.01 (0.03)	0.00 (0.04)
SAT Verbal*(2001-2003)	-0.01 (0.03)	0.01 (0.02)	-0.06* (0.03)	-0.02 (0.03)	-0.01 (0.03)	0.03 (0.03)	0.03 (0.03)
SAT Verbal*(2006-2006)	-0.01 (0.03)	0.00 (0.02)	-0.03 (0.03)	-0.02 (0.03)	-0.01 (0.03)	0.03 (0.02)	0.05 (0.03)
HS GPA	0.16*** (0.01)	0.19*** (0.01)	0.19*** (0.02)	0.24*** (0.02)	0.22*** (0.02)	0.23*** (0.02)	0.21*** (0.02)
HS GPA*(1998-2000)	0.00 (0.02)	-0.00 (0.02)	0.07** (0.03)	-0.03 (0.03)	-0.07** (0.03)	-0.06*** (0.02)	-0.04 (0.03)
HS GPA*(2001-2003)	-0.02 (0.02)	0.04** (0.02)	0.05 (0.03)	-0.05* (0.02)	-0.03 (0.03)	-0.04* (0.02)	-0.00 (0.03)
HS GPA*(2004-2006)	-0.02 (0.03)	0.03 (0.02)	-0.05* (0.03)	-0.01 (0.02)	-0.06** (0.03)	-0.03 (0.02)	0.01 (0.03)
Parent College	0.11*** (0.03)	0.09*** (0.02)	0.07 (0.04)	0.02 (0.04)	0.06 (0.04)	0.05 (0.03)	0.05 (0.05)
Parent College*(1998-2000)	-0.01 (0.05)	-0.07 (0.04)	0.02 (0.06)	0.07 (0.05)	-0.01 (0.06)	0.02 (0.05)	0.02 (0.06)
Parent College*(2001-2003)	-0.01 (0.05)	0.01 (0.04)	0.05 (0.06)	0.10* (0.05)	0.05 (0.06)	0.02 (0.05)	-0.00 (0.06)
Parent College*(2004-2006)	-0.05 (0.05)	0.03 (0.04)	0.04 (0.06)	0.08 (0.05)	0.00 (0.06)	0.09** (0.04)	0.05 (0.06)
Income/50,000	-0.01 (0.02)	0.05*** (0.02)	-0.01 (0.03)	0.04 (0.03)	0.03 (0.04)	0.01 (0.02)	0.01 (0.04)
Income/50,000*(1998-2000)	0.09** (0.04)	0.02 (0.03)	0.09** (0.05)	-0.02 (0.04)	-0.00 (0.05)	0.06* (0.04)	0.01 (0.05)
Income/50,000*(2001-2003)	0.05 (0.04)	0.01 (0.03)	0.08* (0.04)	0.01 (0.04)	0.03 (0.05)	0.03 (0.04)	0.07 (0.05)
Income/50,000*(2004-2006)	0.05 (0.04)	0.01 (0.03)	0.11*** (0.04)	0.04 (0.04)	0.00 (0.04)	0.04 (0.03)	0.04 (0.05)

(continues)

Table A.5: (continued)

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB	UCR
Science Major	-0.23*** (0.03)	-0.16*** (0.02)	-0.19*** (0.04)	-0.08** (0.04)	-0.39*** (0.04)	-0.12*** (0.03)	-0.21*** (0.05)
Science Major*(1998-2000)	0.01 (0.05)	-0.12*** (0.04)	0.05 (0.06)	-0.04 (0.05)	-0.00 (0.05)	-0.14*** (0.05)	-0.01 (0.06)
Science Major*(2001-2003)	0.05 (0.05)	-0.03 (0.04)	-0.02 (0.05)	-0.05 (0.05)	0.05 (0.05)	-0.03 (0.04)	0.01 (0.06)
Science Major*(2004-2006)	0.00 (0.05)	-0.09** (0.04)	0.01 (0.05)	-0.07 (0.05)	0.08 (0.05)	-0.08* (0.04)	0.02 (0.05)
Soc Science Major	0.02 (0.03)	-0.03 (0.03)	-0.03 (0.05)	0.06 (0.05)	-0.14*** (0.05)	0.04 (0.03)	-0.01 (0.05)
Soc Science Major*(1998-2000)	0.09 (0.06)	-0.01 (0.04)	0.03 (0.07)	0.09 (0.07)	0.10 (0.07)	-0.04 (0.05)	0.10 (0.07)
Soc Science Major*(2001-2003)	-0.01 (0.05)	0.04 (0.04)	0.04 (0.07)	0.01 (0.06)	0.17*** (0.06)	-0.05 (0.05)	0.01 (0.06)
Soc Science Major*(2004-2006)	0.00 (0.05)	0.03 (0.04)	0.07 (0.06)	0.01 (0.06)	0.13** (0.06)	-0.08* (0.04)	0.02 (0.06)
1998-2000	-0.10** (0.05)	0.06 (0.04)	-0.14** (0.07)	-0.02 (0.06)	-0.12* (0.07)	-0.07 (0.05)	-0.12* (0.07)
2001-2003	-0.00 (0.05)	0.01 (0.04)	-0.19*** (0.06)	-0.05 (0.06)	-0.23*** (0.07)	-0.06 (0.05)	-0.16** (0.07)
2004-2006	0.07 (0.05)	0.06 (0.04)	-0.09 (0.06)	-0.09 (0.06)	-0.16** (0.06)	-0.06 (0.05)	-0.13* (0.07)
Constant	2.84*** (0.03)	2.73*** (0.02)	2.77*** (0.05)	2.71*** (0.04)	3.02*** (0.05)	2.87*** (0.04)	2.91*** (0.05)
Observations	6,001	8,265	4,504	6,129	5,295	7,670	8,390
R-squared	0.14	0.21	0.20	0.21	0.21	0.21	0.15
Mean GPA (1995-2006)	2.88	2.82	2.72	2.56	2.65	2.67	2.50

Notes: OLS estimates of first-year GPA. First-year GPA was not reported at UCSC for 1995-2000, so UCSC is omitted from this table.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table A.6: Changes in the Characteristics of Predicted URM Admits, Simulated for 1998-2000 Admissions Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
SAT Math						
Change	-25.8*** (1.6)	-11.3*** (1.4)	-13.1*** (1.5)	-5.0*** (1.6)	6.7*** (1.6)	-8.7*** (1.4)
Average	648.8 (57.5)	628.6 (63.0)	617.3 (66.2)	571.4 (82.6)	553.1 (87.7)	565.9 (82.6)
SAT Verbal						
Change	-30.1*** (1.7)	-13.3*** (1.5)	-12.0*** (1.7)	-5.2*** (1.6)	9.0*** (1.6)	-5.9*** (1.5)
Average	644.8 (59.1)	623.6 (63.2)	604.5 (72.8)	560.2 (85.2)	539.7 (88.3)	557.7 (86.0)
HS GPA						
Change	0.12*** (0.01)	0.04*** (0.01)	0.01** (0.01)	0.01 (0.01)	-0.04*** (0.01)	0.01* (0.01)
Average	4.06 (0.27)	4.05 (0.26)	4.02 (0.26)	3.72 (0.43)	3.78 (0.37)	3.73 (0.40)
Parent College						
Change	-0.10*** (0.01)	-0.11*** (0.01)	-0.12*** (0.01)	-0.04*** (0.01)	0.02*** (0.01)	-0.06*** (0.01)
Average	0.55 (0.50)	0.48 (0.50)	0.49 (0.50)	0.43 (0.50)	0.33 (0.47)	0.41 (0.49)
Income/50k						
Change	-0.13*** (0.02)	-0.13*** (0.01)	-0.17*** (0.01)	-0.07*** (0.01)	0.06*** (0.01)	-0.06*** (0.01)
Average	1.19 (0.65)	1.14 (0.65)	1.17 (0.66)	1.09 (0.65)	0.96 (0.63)	1.07 (0.67)
First-Year GPA <sup>†</sup>						
Change	-0.01*** (0.00)	-0.02*** (0.00)	-0.04*** (0.00)	-0.01** (0.01)	0.01 (0.00)	-0.01*** (0.00)
Average	3.12 (0.17)	3.07 (0.18)	2.97 (0.20)	2.73 (0.27)	2.76 (0.25)	2.89 (0.24)

Notes: “Change” shows the change in the characteristics of URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average characteristics of non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 1998-2000 cohort, with the admission rate fixed at the 1998-2000 URM admission rate.

<sup>†</sup> Predicted, see text for details.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10.



Table A.7: Changes in the Characteristics of Predicted Non-URM Admits, Simulated for 1998-2000 Admissions Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
SAT Math						
Change	-15.2*** (0.4)	-5.6*** (0.4)	-5.0*** (0.4)	-2.6*** (0.5)	0.5 (0.6)	-5.6*** (0.5)
Average	700.6 (35.5)	684.5 (47.1)	665.2 (57.5)	632.3 (71.3)	630.9 (78.0)	626.0 (70.7)
SAT Verbal						
Change	-24.3*** (0.5)	-8.9*** (0.5)	-4.8*** (0.6)	-4.3*** (0.6)	2.1*** (0.7)	-4.3*** (0.6)
Average	682.6 (45.1)	658.1 (57.4)	628.3 (72.1)	591.0 (84.0)	577.5 (87.3)	595.9 (79.4)
HS GPA						
Change	0.10*** (0.00)	0.02*** (0.00)	0.00 (0.00)	0.01* (0.00)	-0.01** (0.00)	0.01** (0.00)
Average	4.14 (0.20)	4.11 (0.22)	4.03 (0.25)	3.77 (0.43)	3.75 (0.42)	3.77 (0.40)
Parent College						
Change	-0.04*** (0.00)	-0.07*** (0.00)	-0.05*** (0.00)	-0.03*** (0.00)	0.01 (0.00)	-0.04*** (0.00)
Average	0.82 (0.38)	0.79 (0.41)	0.77 (0.42)	0.72 (0.45)	0.69 (0.46)	0.76 (0.43)
Income/50k						
Change	-0.08*** (0.01)	-0.10*** (0.01)	-0.08*** (0.00)	-0.05*** (0.00)	0.02*** (0.01)	-0.05*** (0.00)
Average	1.49 (0.64)	1.45 (0.66)	1.44 (0.65)	1.42 (0.66)	1.27 (0.68)	1.47 (0.64)
First-Year GPA <sup>†</sup>						
Change	-0.00* (0.00)	-0.02*** (0.00)	-0.02*** (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.01*** (0.00)
Average	3.25 (0.15)	3.21 (0.17)	3.08 (0.19)	2.87 (0.27)	2.89 (0.26)	3.03 (0.24)

Notes: “Change” shows the change in the characteristics of non-URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average characteristics of non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 1998-2000 cohort, with the admission rate fixed at the 1998-2000 non-URM admission rate.

<sup>†</sup> Predicted, see text for details.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Table A.8: Changes in the Characteristics of Predicted URM Admits, Simulated for 2001-2003 Admissions Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
SAT Math						
Change	-24.8*** (1.4)	-12.4*** (1.3)	-13.5*** (1.3)	-4.6*** (1.3)	4.8*** (1.3)	-12.6*** (1.2)
Average	646.6 (57.8)	635.9 (60.9)	614.3 (66.9)	571.2 (82.7)	563.6 (82.7)	572.7 (80.4)
SAT Verbal						
Change	-32.2*** (1.6)	-14.4*** (1.3)	-11.7*** (1.4)	-5.7*** (1.4)	8.2*** (1.3)	-10.1*** (1.3)
Average	637.9 (59.7)	625.5 (62.6)	594.4 (74.1)	553.7 (86.0)	543.4 (86.6)	556.3 (85.8)
HS GPA						
Change	0.12*** (0.00)	0.05*** (0.00)	0.01** (0.00)	0.01 (0.01)	-0.03*** (0.01)	0.03*** (0.01)
Average	4.06 (0.27)	4.07 (0.25)	4.00 (0.26)	3.72 (0.43)	3.83 (0.34)	3.78 (0.38)
Parent College						
Change	-0.11*** (0.01)	-0.12*** (0.01)	-0.11*** (0.01)	-0.05*** (0.01)	0.02*** (0.01)	-0.06*** (0.01)
Average	0.54 (0.50)	0.48 (0.50)	0.46 (0.50)	0.41 (0.49)	0.32 (0.47)	0.38 (0.49)
Income/50k						
Change	-0.14*** (0.01)	-0.15*** (0.01)	-0.17*** (0.01)	-0.08*** (0.01)	0.05*** (0.01)	-0.08*** (0.01)
Average	1.27 (0.67)	1.23 (0.67)	1.20 (0.67)	1.14 (0.67)	1.04 (0.65)	1.12 (0.67)
First-Year GPA <sup>†</sup>						
Change	-0.03*** (0.00)	-0.02*** (0.00)	-0.04*** (0.00)	-0.01*** (0.00)	0.01 (0.00)	-0.02*** (0.00)
Average	3.16 (0.17)	3.16 (0.18)	2.94 (0.20)	2.76 (0.28)	2.82 (0.26)	2.93 (0.24)

Notes: “Change” shows the change in the characteristics of URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average characteristics of non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 2001-2003 cohort, with the admission rate fixed at the 2001-2003 URM admission rate.

<sup>†</sup> Predicted, see text for details.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Table A.9: Changes in the Characteristics of Predicted Non-URM Admits, Simulated for 2001-2003 Admissions Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
SAT Math						
Change	-10.6*** (0.4)	-6.3*** (0.4)	-5.8*** (0.4)	-2.7*** (0.5)	1.5*** (0.5)	-5.9*** (0.5)
Average	702.8 (33.3)	692.0 (42.2)	669.8 (55.9)	635.8 (71.4)	635.8 (76.8)	636.1 (69.2)
SAT Verbal						
Change	-20.9*** (0.5)	-10.2*** (0.5)	-5.6*** (0.5)	-4.0*** (0.6)	3.0*** (0.6)	-4.5*** (0.5)
Average	686.1 (42.5)	668.1 (52.7)	630.0 (71.5)	591.6 (83.7)	585.7 (87.0)	601.4 (78.1)
HS GPA						
Change	0.08*** (0.00)	0.03*** (0.00)	0.00 (0.00)	0.01** (0.00)	-0.01*** (0.00)	0.01*** (0.00)
Average	4.16 (0.19)	4.14 (0.20)	4.03 (0.25)	3.77 (0.43)	3.79 (0.41)	3.83 (0.36)
Parent College						
Change	-0.05*** (0.00)	-0.08*** (0.00)	-0.05*** (0.00)	-0.03*** (0.00)	0.01*** (0.00)	-0.04*** (0.00)
Average	0.84 (0.37)	0.80 (0.40)	0.76 (0.43)	0.73 (0.45)	0.70 (0.46)	0.76 (0.42)
Income/50k						
Change	-0.06*** (0.01)	-0.11*** (0.01)	-0.09*** (0.00)	-0.05*** (0.00)	0.02*** (0.00)	-0.04*** (0.00)
Average	1.57 (0.62)	1.55 (0.64)	1.52 (0.65)	1.52 (0.65)	1.40 (0.68)	1.56 (0.63)
First-Year GPA <sup>†</sup>						
Change	-0.02*** (0.00)	-0.02*** (0.00)	-0.02*** (0.00)	-0.01*** (0.00)	0.00* (0.00)	-0.01*** (0.00)
Average	3.32 (0.14)	3.31 (0.15)	3.09 (0.19)	2.92 (0.28)	2.96 (0.28)	3.10 (0.22)

Notes: “Change” shows the change in the characteristics of non-URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average characteristics of non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 2001-2003 cohort, with the admission rate fixed at the 2001-2003 non-URM admission rate.

<sup>†</sup> Predicted, see text for details.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Table A.10: Changes in the Characteristics of Predicted URM Admits, Simulated for 2004-2006 Admissions Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
SAT Math						
Change	-30.3*** (1.4)	-14.9*** (1.3)	-11.8*** (1.2)	-8.3*** (1.3)	1.5 (1.1)	-10.9*** (1.1)
Average	652.3 (55.0)	641.5 (59.7)	609.3 (69.5)	572.2 (80.5)	570.0 (78.7)	566.9 (81.7)
SAT Verbal						
Change	-33.5*** (1.4)	-15.3*** (1.3)	-9.4*** (1.2)	-8.6*** (1.3)	8.0*** (1.1)	-8.7*** (1.1)
Average	645.4 (56.5)	636.5 (57.4)	593.8 (73.5)	557.0 (83.5)	554.8 (81.4)	556.4 (84.8)
HS GPA						
Change	0.13*** (0.00)	0.05*** (0.00)	0.01** (0.00)	0.03*** (0.01)	-0.02*** (0.00)	0.03*** (0.00)
Average	4.09 (0.24)	4.11 (0.22)	4.01 (0.26)	3.75 (0.40)	3.91 (0.28)	3.80 (0.36)
Parent College						
Change	-0.11*** (0.01)	-0.14*** (0.01)	-0.10*** (0.01)	-0.05*** (0.01)	0.02*** (0.01)	-0.05*** (0.01)
Average	0.53 (0.50)	0.49 (0.50)	0.44 (0.50)	0.39 (0.49)	0.33 (0.47)	0.37 (0.48)
Income/50k						
Change	-0.15*** (0.01)	-0.17*** (0.01)	-0.15*** (0.01)	-0.09*** (0.01)	0.04*** (0.01)	-0.07*** (0.01)
Average	1.31 (0.68)	1.28 (0.69)	1.22 (0.68)	1.15 (0.68)	1.08 (0.66)	1.12 (0.68)
First-Year GPA <sup>†</sup>						
Change	-0.04*** (0.00)	-0.03*** (0.00)	-0.03*** (0.00)	-0.01*** (0.00)	0.01** (0.00)	-0.02*** (0.00)
Average	3.21 (0.17)	3.20 (0.17)	2.96 (0.19)	2.76 (0.29)	2.88 (0.24)	2.92 (0.26)

Notes: “Change” shows the change in the characteristics of URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average characteristics of non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 2004-2006 cohort, with the admission rate fixed at the 2004-2006 URM admission rate.

<sup>†</sup> Predicted, see text for details.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Table A.11: Changes in the Characteristics of Predicted Non-URM Admits, Simulated for 2004-2006 Admissions Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
SAT Math						
Change	-15.2*** (0.4)	-6.3*** (0.4)	-5.6*** (0.4)	-1.7*** (0.5)	-0.0 (0.5)	-5.0*** (0.5)
Average	701.3 (35.0)	690.1 (43.6)	666.9 (57.5)	633.1 (75.0)	636.0 (77.2)	634.9 (72.1)
SAT Verbal						
Change	-21.6*** (0.5)	-11.1*** (0.5)	-5.4*** (0.5)	-2.8*** (0.6)	1.3** (0.5)	-3.2*** (0.5)
Average	682.2 (44.9)	667.6 (52.8)	627.5 (72.6)	589.6 (85.2)	590.1 (85.3)	601.5 (79.8)
HS GPA						
Change	0.09*** (0.00)	0.03*** (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	0.01** (0.00)
Average	4.15 (0.20)	4.13 (0.21)	4.02 (0.25)	3.75 (0.44)	3.79 (0.42)	3.81 (0.39)
Parent College						
Change	-0.05*** (0.00)	-0.07*** (0.00)	-0.06*** (0.00)	-0.02*** (0.00)	0.00 (0.00)	-0.04*** (0.00)
Average	0.82 (0.39)	0.79 (0.41)	0.75 (0.43)	0.70 (0.46)	0.69 (0.46)	0.74 (0.44)
Income/50k						
Change	-0.07*** (0.01)	-0.10*** (0.01)	-0.10*** (0.00)	-0.04*** (0.00)	0.02*** (0.00)	-0.04*** (0.00)
Average	1.58 (0.64)	1.54 (0.65)	1.51 (0.66)	1.49 (0.67)	1.42 (0.68)	1.55 (0.65)
First-Year GPA <sup>†</sup>						
Change	-0.02*** (0.00)	-0.02*** (0.00)	-0.02*** (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.01*** (0.00)
Average	3.34 (0.14)	3.30 (0.15)	3.10 (0.18)	2.91 (0.32)	2.95 (0.27)	3.10 (0.26)

Notes: “Change” shows the change in the characteristics of non-URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average characteristics of non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 2004-2006 cohort, with the admission rate fixed at the 2004-2006 non-URM admission rate.

<sup>†</sup> Predicted, see text for details.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Table A.12: Changes in Predicted College Outcomes of Predicted Non-URM Admits, Simulated for the 1995-1997 Admissions Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
Pred. First-Year GPA						
Change	0.02*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.00 (0.00)	-0.01*** (0.00)
Average	3.25 (0.17)	3.20 (0.16)	3.05 (0.18)	2.89 (0.27)	2.93 (0.28)	2.88 (0.27)
Pred. Cumulative GPA						
Change	0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.01*** (0.00)
Average	3.29 (0.14)	3.25 (0.16)	3.15 (0.19)	2.99 (0.25)	3.00 (0.23)	2.96 (0.25)
Pred. Bachelor						
Change	0.01*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00 (0.00)	-0.00*** (0.00)
Average	0.90 (0.03)	0.91 (0.03)	0.89 (0.04)	0.83 (0.06)	0.81 (0.06)	0.78 (0.07)
Pred. Time to Degree						
Change	0.02*** (0.00)	0.05*** (0.00)	0.03*** (0.00)	0.02*** (0.00)	-0.00 (0.00)	0.02*** (0.00)
Average	12.50 (0.21)	12.78 (0.45)	12.72 (0.41)	13.11 (0.40)	13.27 (0.36)	12.70 (0.39)
Intended Science						
Change	0.00 (0.00)	0.01** (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)
Average	0.42 (0.49)	0.39 (0.49)	0.44 (0.50)	0.42 (0.49)	0.44 (0.50)	0.28 (0.45)
Intended Social Science						
Change	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Average	0.10 (0.30)	0.17 (0.38)	0.13 (0.34)	0.12 (0.33)	0.13 (0.34)	0.13 (0.34)

Notes: “Change” shows the change in predicted outcome for non-URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average predicted outcome for non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 1995-1997 cohort, with the admission rate fixed at the 1995-1997 non-URM admission rate. Each predicted measure of college performance is based on the performance of students in the 1995-1997 cohort, additionally the predictors of first-year college GPA are allowed to vary by race.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table A.13: Changes in Predicted College Outcomes of Predicted URM Admits, Simulated for the 1995-1997 Admissions Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
Pred. First-Year GPA						
Change	0.00 (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.01* (0.01)	0.00 (0.01)	-0.02*** (0.00)
Average	2.91 (0.19)	2.82 (0.22)	2.74 (0.23)	2.59 (0.32)	2.73 (0.31)	2.65 (0.27)
Pred. Cumulative GPA						
Change	0.01*** (0.00)	-0.01 (0.00)	-0.02*** (0.00)	-0.01** (0.01)	0.00 (0.00)	-0.02*** (0.00)
Average	3.06 (0.21)	2.98 (0.22)	2.94 (0.24)	2.72 (0.30)	2.85 (0.23)	2.78 (0.26)
Pred. Bachelor						
Change	0.02*** (0.00)	0.00*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.00 (0.00)	-0.01*** (0.00)
Average	0.84 (0.08)	0.84 (0.07)	0.82 (0.07)	0.75 (0.09)	0.76 (0.07)	0.72 (0.08)
Pred. Time to Degree						
Change	0.02*** (0.01)	0.04*** (0.01)	0.03*** (0.01)	0.02*** (0.01)	-0.00 (0.01)	0.04*** (0.01)
Average	12.92 (0.32)	13.35 (0.53)	13.00 (0.44)	13.48 (0.45)	13.45 (0.36)	12.93 (0.38)
Intended Science						
Change	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	-0.00 (0.01)	0.00 (0.01)
Average	0.32 (0.47)	0.32 (0.47)	0.43 (0.49)	0.36 (0.48)	0.40 (0.49)	0.26 (0.44)
Intended Social Science						
Change	0.00 (0.01)	-0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
Average	0.16 (0.36)	0.22 (0.41)	0.16 (0.37)	0.16 (0.37)	0.16 (0.37)	0.19 (0.39)

Notes: “Change” shows the change in predicted outcome for URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average predicted outcome for non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 1995-1997 cohort, with the admission rate fixed at the 1995-1997 URM admission rate. Each predicted measure of college performance is based on the performance of students in the 1995-1997 cohort, additionally the predictors of first-year college GPA are allowed to vary by race.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table A.14: Changes in Predicted College Outcomes of Predicted Non-URM Admits, Simulated for the 1998-2000 Admissions Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
Pred. First-Year GPA						
Change	-0.00*** (0.00)	-0.01*** (0.00)	-0.02*** (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.01*** (0.00)
Average	3.26 (0.15)	3.22 (0.16)	3.08 (0.19)	2.87 (0.28)	2.90 (0.25)	3.04 (0.24)
Pred. Cumulative GPA						
Change	0.00** (0.00)	-0.01*** (0.00)	-0.02*** (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.01*** (0.00)
Average	3.33 (0.14)	3.29 (0.16)	3.18 (0.18)	2.98 (0.25)	3.01 (0.21)	3.10 (0.22)
Pred. Bachelor						
Change	0.01*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00*** (0.00)	-0.00 (0.00)	-0.00*** (0.00)
Average	0.93 (0.03)	0.92 (0.03)	0.89 (0.03)	0.82 (0.06)	0.83 (0.04)	0.83 (0.05)
Pred. Time to Degree						
Change	0.02*** (0.00)	0.05*** (0.00)	0.03*** (0.00)	0.02*** (0.00)	-0.00* (0.00)	0.02*** (0.00)
Average	12.37 (0.19)	12.54 (0.40)	12.72 (0.36)	12.92 (0.36)	13.04 (0.34)	12.39 (0.35)
Intended Science						
Change	-0.00 (0.00)	0.01 (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Average	0.43 (0.49)	0.39 (0.49)	0.42 (0.49)	0.41 (0.49)	0.43 (0.50)	0.28 (0.45)
Intended Social Science						
Change	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Average	0.11 (0.31)	0.18 (0.38)	0.15 (0.36)	0.12 (0.33)	0.14 (0.35)	0.12 (0.33)

Notes: “Change” shows the change in predicted outcome for non-URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average predicted outcome for non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 1998-2000 cohort, with the admission rate fixed at the 1998-2000 non-URM admission rate. Each predicted measure of college performance is based on the performance of students in the 1998-2000 cohort, additionally the predictors of first-year college GPA are allowed to vary by race.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .



Table A.15: Changes in Predicted College Outcomes of Predicted URM Admits, Simulated for the 1998-2000 Admissions Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
Pred. First-Year GPA						
Change	-0.00 (0.00)	-0.02*** (0.00)	-0.04*** (0.00)	-0.01** (0.00)	0.01* (0.00)	-0.01*** (0.00)
Average	3.02 (0.19)	3.00 (0.19)	2.96 (0.21)	2.71 (0.25)	2.73 (0.27)	2.82 (0.21)
Pred. Cumulative GPA						
Change	-0.00 (0.00)	-0.02*** (0.00)	-0.03*** (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.01*** (0.00)
Average	3.23 (0.16)	3.17 (0.17)	3.08 (0.19)	2.85 (0.24)	2.92 (0.20)	2.99 (0.22)
Pred. Bachelor						
Change	0.01*** (0.00)	-0.00*** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.00 (0.00)	-0.00*** (0.00)
Average	0.90 (0.05)	0.89 (0.04)	0.86 (0.04)	0.78 (0.07)	0.81 (0.05)	0.80 (0.06)
Pred. Time to Degree						
Change	0.05*** (0.01)	0.07*** (0.01)	0.07*** (0.01)	0.02*** (0.01)	-0.01 (0.01)	0.02*** (0.01)
Average	12.62 (0.25)	12.80 (0.43)	12.87 (0.37)	13.10 (0.36)	13.16 (0.33)	12.56 (0.35)
Intended Science						
Change	-0.01 (0.01)	0.01 (0.01)	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Average	0.37 (0.48)	0.37 (0.48)	0.42 (0.49)	0.38 (0.49)	0.41 (0.49)	0.26 (0.44)
Intended Social Science						
Change	0.00 (0.01)	0.00 (0.01)	0.01 (0.01)	-0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
Average	0.14 (0.34)	0.20 (0.40)	0.17 (0.37)	0.16 (0.36)	0.16 (0.37)	0.17 (0.38)

Notes: “Change” shows the change in predicted outcome for URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average predicted outcome for non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 1998-2000 cohort, with the admission rate fixed at the 1998-2000 URM admission rate. Each predicted measure of college performance is based on the performance of students in the 1998-2000 cohort, additionally the predictors of first-year college GPA are allowed to vary by race.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Table A.16: Changes in Predicted College Outcomes of Predicted Non-URM Admits, Simulated for the 2001-2003 Admissions Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
Pred. First-Year GPA						
Change	-0.01*** (0.00)	-0.02*** (0.00)	-0.02*** (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.01*** (0.00)
Average	3.33 (0.14)	3.32 (0.15)	3.10 (0.18)	2.93 (0.29)	2.97 (0.27)	3.11 (0.22)
Pred. Cumulative GPA						
Change	-0.01*** (0.00)	-0.02*** (0.00)	-0.02*** (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.01*** (0.00)
Average	3.39 (0.13)	3.35 (0.14)	3.19 (0.19)	3.00 (0.25)	3.04 (0.22)	3.16 (0.21)
Pred. Bachelor						
Change	0.00*** (0.00)	-0.00*** (0.00)	-0.01*** (0.00)	-0.00*** (0.00)	0.00 (0.00)	-0.00*** (0.00)
Average	0.94 (0.02)	0.94 (0.02)	0.89 (0.04)	0.85 (0.06)	0.85 (0.05)	0.85 (0.04)
Pred. Time to Degree						
Change	0.02*** (0.00)	0.03*** (0.00)	0.04*** (0.00)	0.01*** (0.00)	-0.00** (0.00)	0.01*** (0.00)
Average	12.19 (0.17)	12.30 (0.31)	12.51 (0.41)	12.64 (0.32)	12.61 (0.29)	12.13 (0.27)
Intended Science						
Change	0.00 (0.00)	0.01* (0.00)	-0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
Average	0.43 (0.49)	0.40 (0.49)	0.40 (0.49)	0.46 (0.50)	0.43 (0.49)	0.29 (0.45)
Intended Social Science						
Change	-0.01* (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Average	0.11 (0.31)	0.13 (0.34)	0.12 (0.33)	0.18 (0.38)	0.15 (0.35)	0.13 (0.34)

Notes: “Change” shows the change in predicted outcome for non-URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average predicted outcome for non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 2001-2003 cohort, with the admission rate fixed at the 2001-2003 non-URM admission rate. Each predicted measure of college performance is based on the performance of students in the 2001-2003 cohort, additionally predicted first-year college GPA varies by race.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Table A.17: Changes in Predicted College Outcomes of Predicted URM Admits, Simulated for the 2001-2003 Admissions Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
Pred. First-Year GPA						
Change	-0.03*** (0.00)	-0.02*** (0.00)	-0.04*** (0.00)	-0.02*** (0.00)	0.01** (0.00)	-0.01*** (0.00)
Average	3.08 (0.15)	3.09 (0.18)	2.84 (0.22)	2.71 (0.23)	2.75 (0.29)	2.85 (0.21)
Pred. Cumulative GPA						
Change	-0.02*** (0.00)	-0.02*** (0.00)	-0.04*** (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.01*** (0.00)
Average	3.24 (0.16)	3.22 (0.16)	3.05 (0.20)	2.87 (0.25)	2.94 (0.21)	3.02 (0.22)
Pred. Bachelor						
Change	0.00 (0.00)	-0.00*** (0.00)	-0.02*** (0.00)	-0.01*** (0.00)	-0.00 (0.00)	-0.00*** (0.00)
Average	0.91 (0.04)	0.91 (0.03)	0.85 (0.05)	0.81 (0.07)	0.82 (0.05)	0.82 (0.05)
Pred. Time to Degree						
Change	0.06*** (0.01)	0.03*** (0.01)	0.07*** (0.01)	0.02*** (0.01)	-0.01 (0.00)	0.01*** (0.00)
Average	12.44 (0.24)	12.44 (0.32)	12.67 (0.42)	12.78 (0.33)	12.73 (0.29)	12.27 (0.28)
Intended Science						
Change	-0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)
Average	0.34 (0.47)	0.33 (0.47)	0.36 (0.48)	0.41 (0.49)	0.37 (0.48)	0.24 (0.43)
Intended Social Science						
Change	-0.01 (0.01)	0.00 (0.01)	0.00 (0.01)	-0.00 (0.01)	-0.00 (0.01)	0.00 (0.01)
Average	0.17 (0.38)	0.19 (0.39)	0.17 (0.37)	0.23 (0.42)	0.20 (0.40)	0.19 (0.39)

Notes: “Change” shows the change in predicted outcome for URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average predicted outcome for non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 2001-2003 cohort, with the admission rate fixed at the 2001-2003 URM admission rate. Each predicted measure of college performance is based on the performance of students in the 2001-2003 cohort, additionally predicted first-year college GPA varies by race.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table A.18: Changes in Predicted College Outcomes of Predicted Non-URM Admits, Simulated for the 2004-2006 Admissions Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
Pred. First-Year GPA						
Change	-0.01*** (0.00)	-0.01*** (0.00)	-0.02*** (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.01*** (0.00)
Average	3.35 (0.15)	3.31 (0.14)	3.10 (0.17)	2.91 (0.32)	2.96 (0.27)	3.12 (0.24)
Pred. Cumulative GPA						
Change	0.01*** (0.00)	-0.01*** (0.00)	-0.02*** (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.01*** (0.00)
Average	3.30 (0.14)	3.30 (0.15)	3.18 (0.18)	2.97 (0.27)	3.08 (0.23)	3.11 (0.23)
Pred. Bachelor						
Change	0.01*** (0.00)	-0.00*** (0.00)	-0.01*** (0.00)	-0.00*** (0.00)	0.00 (0.00)	-0.00*** (0.00)
Average	0.91 (0.03)	0.92 (0.03)	0.89 (0.04)	0.83 (0.07)	0.82 (0.06)	0.82 (0.06)
Pred. Time to Degree						
Change	0.02*** (0.00)	0.06*** (0.00)	0.04*** (0.00)	0.02*** (0.00)	-0.00* (0.00)	0.02*** (0.00)
Average	12.45 (0.21)	12.66 (0.43)	12.65 (0.41)	13.10 (0.46)	13.15 (0.38)	12.52 (0.39)
Intended Science						
Change	-0.00 (0.00)	0.01*** (0.00)	0.00 (0.00)	0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)
Average	0.42 (0.49)	0.40 (0.49)	0.49 (0.50)	0.50 (0.50)	0.42 (0.49)	0.31 (0.46)
Intended Social Science						
Change	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Average	0.12 (0.33)	0.13 (0.34)	0.18 (0.39)	0.22 (0.41)	0.16 (0.37)	0.15 (0.36)

Notes: “Change” shows the change in predicted outcome for non-URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average predicted outcome for non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 2004-2006 cohort, with the admission rate fixed at the 2004-2006 non-URM admission rate. Since actual college performance is not available for students in the 2004-2006 cohort, each predicted measure of college performance is based on the performance of students in the 1995-1997 cohort, additionally predicted first-year college GPA varies by race.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table A.19: Changes in Predicted College Outcomes of Predicted URM Admits, Simulated for the 2004-2006 Admissions Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB
Pred. First-Year GPA						
Change	-0.03*** (0.00)	-0.03*** (0.00)	-0.04*** (0.00)	-0.02*** (0.00)	0.01*** (0.00)	-0.02*** (0.00)
Average	3.14 (0.16)	3.12 (0.19)	2.90 (0.21)	2.71 (0.27)	2.82 (0.25)	2.85 (0.26)
Pred. Cumulative GPA						
Change	0.01* (0.00)	-0.02*** (0.00)	-0.03*** (0.00)	-0.01*** (0.00)	0.00 (0.00)	-0.01*** (0.00)
Average	3.22 (0.16)	3.20 (0.16)	3.08 (0.18)	2.85 (0.25)	3.03 (0.20)	2.98 (0.22)
Pred. Bachelor						
Change	0.01*** (0.00)	-0.00** (0.00)	-0.01*** (0.00)	-0.01*** (0.00)	-0.00 (0.00)	-0.00*** (0.00)
Average	0.89 (0.04)	0.90 (0.03)	0.86 (0.05)	0.79 (0.07)	0.82 (0.05)	0.77 (0.07)
Pred. Time to Degree						
Change	0.05*** (0.01)	0.10*** (0.01)	0.05*** (0.01)	0.03*** (0.01)	-0.01 (0.01)	0.02*** (0.01)
Average	12.65 (0.26)	12.92 (0.48)	12.79 (0.42)	13.30 (0.46)	13.22 (0.36)	12.71 (0.39)
Intended Science						
Change	-0.00 (0.01)	0.01 (0.01)	-0.00 (0.01)	0.00 (0.01)	-0.01 (0.01)	-0.00 (0.01)
Average	0.37 (0.48)	0.37 (0.48)	0.45 (0.50)	0.48 (0.50)	0.40 (0.49)	0.29 (0.45)
Intended Social Science						
Change	0.00 (0.01)	-0.00 (0.01)	0.01 (0.01)	-0.00 (0.01)	0.00 (0.01)	0.00 (0.01)
Average	0.16 (0.36)	0.17 (0.37)	0.21 (0.41)	0.25 (0.43)	0.20 (0.40)	0.21 (0.40)

Notes: “Change” shows the change in predicted outcome for URMs predicted to be admitted in 2004-2006 relative to 1995-1997 due to the change in the weights given to SAT scores, high school GPA, parental education and parental income in predicting admissions (standard error in parentheses). “Average” shows the average predicted outcome for non-URMs predicted to be admitted in 1995-1997 (standard deviation in parentheses). Conducted for students in the 2004-2006 cohort, with the admission rate fixed at the 2004-2006 URM admission rate. Since actual college performance is not available for students in the 2004-2006 cohort, each predicted measure of college performance is based on the performance of students in the 1995-1997 cohort, additionally predicted first-year college GPA varies by race.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Table A.20: Log of the Ratio of the 90th and 10th Percentile of Students' Index Scores Among Admitted Non-URMs, by Admission Cohort

	Berkeley	UCLA	UCSD	UCD	UCI	UCSB	UCSC	UCR
Log 90/10 Ratio: 1995-1997	0.19	0.19	0.21	0.25	0.28	0.26	0.31	0.33
Log 90/10 Ratio: 1998-2000	0.20	0.20	0.20	0.26	0.26	0.25	0.29	0.30
Log 90/10 Ratio: 2001-2003	0.21	0.21	0.21	0.26	0.25	0.24	0.29	0.30
Log 90/10 Ratio: 2004-2006	0.19	0.20	0.21	0.26	0.25	0.23	0.28	0.30

Notes: Shows the log of the ratio of the 90th and 10th percentile of students' index score for non-URMs admitted during different time periods.