EXHIBIT A

EXPERT REPORT OF PETER S. ARCIDIACONO

Students for Fair Admissions, Inc. v. Harvard
No. 14-cv-14176-ADB (D. Mass)

TABLE OF CONTENTS

1 Executive Summary

I am a Professor of Economics at Duke University. My area of academic expertise is labor economics; I have published numerous peer-reviewed articles on issues of race/ethnicity and admissions decisions in higher education. I was retained by Students for Fair Admissions, Inc. in this case to review and analyze extensive data and information produced by Harvard in this litigation and to answer several questions about Harvard's admissions process, using accepted econometric and statistical methods and techniques that I have used repeatedly in my published academic work for the past fourteen years:

- Are Harvard's admissions decisions biased against Asian-American applicants in the scoring and/or selection of applicants for admission?
- What role does an applicant's race/ethnicity play in admissions decisions made by Harvard?
- Does Harvard set floors or ceilings on the admission of any racial/ethnic groups in making admissions decisions?

To answer these questions, I reviewed a litany of materials provided by Harvard in this case, including: (1) data regarding individual applicants to Harvard from the classes of 2014-2019; (2) aggregate admissions data from the classes of 2000-2019; (3) the deposition transcripts and related exhibits of numerous Harvard officials; (4) training materials from the admissions office; (5) summary sheets and application files for selected applicants; and (6) reports from the admissions office and Harvard's Office of Institutional Research.

Using these materials, I constructed a database that permitted me to analyze how various factors—including race/ethnicity—affect admissions and Harvard's scoring of the applications. I analyze the data using standard techniques for data where the variable of interest takes on a discrete number of values. For example, in analyzing admissions decisions, I code the dependent variable as one (if the applicant was admitted) or zero (if rejected) and estimate logit models of this decision. For Harvard's ratings, the ratings are ordered such that lower numbers are associated with higher ratings and I use ordered logit models for the analysis. This approach is

consistent with generally accepted principles of econometric and statistical analysis, and has been used by experts in the field for the purposes of studying the influence of race in institutional decision-making generally, and in the field of higher education specifically.

To analyze the individual applicant data produced by Harvard, I considered two distinct sets of applicants. The first "baseline" set included all domestic applicants who met each of the following criteria: (i) regular decision applicant; (ii) not a recruited athlete; (iii) not a legacy (*i.e.*, the child of a Harvard alum); (iv) not a person appearing on the Dean's or Director's Interest List[1]; and (v) not the child of a member of the Harvard faculty or staff. Each of these characteristics is associated with a preference by Harvard, and thus an increased chance of admission. Excluding them from the baseline allows me to more easily compare similarly-situated candidates, and thus better perceive the role that race/ethnicity is playing (both positively and negatively) in Harvard's admissions process.[2] Second, I analyzed an expanded set that included all domestic applicants and thus includes the groups excluded from the baseline dataset. In both datasets, I excluded a small number of individuals who were missing key pieces of information (such as both SAT and ACT scores).

Employing statistical and econometric methods of analysis, it is my opinion, to a reasonable degree of certainty, that:

- Asian-American applicants as a whole are stronger on many objective measures than any other racial/ethnic group including test scores, academic achievement, and extracurricular activities.

- Asian-American applicants suffer a statistically significant penalty relative to white applicants in two of the ratings Harvard's admissions officers assign to each file (the personal and overall rating).

[1] These lists are used to identify candidates of particular interest to Harvard's admissions office, [redacted] *See* Fitzsimmons Depo. 268: 6-14.

[2] Harvard previously has defended against claims it discriminates against Asian Americans by arguing that any disparity in admissions arises from its preferences for legacies and athletes, not its consideration of race. *See* HARV00023651; HARV00023143-44; Fitzsimmons Depo. at 371:19-374:3; Hansen Depo. at 114:7-115:19.

- Asian-American applicants also suffer a statistically significant penalty relative to white applicants in the admissions decisions themselves, even aside from the penalty in the personal and overall ratings.

- Race plays a significant role in admissions decisions. Consider the example of an Asian-American applicant who is male, is not disadvantaged,[3] and has other characteristics that result in a 25% chance of admission. Simply changing the race of this applicant to white—and leaving all his other characteristics the same—would increase his chance of admission to 36%. Changing his race to Hispanic (and leaving all other characteristics the same) would increase his chance of admission to 77%. Changing his race to African-American (again, leaving all other characteristics the same) would increase his chance of admission to 95%.

- Asian-American applicants also are negatively affected by preferences for athletes and legacies, though the combined negative effects of these preferences on Asian-American admit rates is smaller than the penalty Asian Americans face as a result of being treated differently than white applicants who are not legacies or athletes.

- For the three most recent admissions cycles, a period during which Harvard's Admissions Office has tracked admission rates by race using the federal IPEDS (Integrated Postsecondary Education Data System) methodology, Harvard has maintained African-American admission rates at nearly exactly the same level as the admission rates for all other domestic applicants (within 0.00064). The probability that the difference in admission rates would be smaller than 0.00064 in each of the three years is *less than 0.2%* absent direct manipulation, and is consistent with Harvard having a floor on the African-American admit rate.

Penalties Against Asian-American Applicants. Asian-Americans applicants to Harvard as a group have, on average, the highest objective academic credentials. In the expanded dataset, their average SAT score (SAT math plus SAT verbal) is 24.9 points higher than white applicants; 153.9 points higher than Hispanic applicants; and 217.7 points higher than African-American applicants.[4] Asian-American

[3] Disadvantaged is a label assigned by the reader of the file. According the 2018 reader guidelines, the applicant is supposed to be labeled disadvantaged if the reader believes the applicant is from a very modest economic background.

[4] These average SAT scores include ACT scores, as converted to SAT scores using a formula provided by Harvard.

applicants also have the highest academic index—Harvard's combined score for standardized testing and high-school performance.

Despite being more academically qualified than the other three major racial/ethnic groups (whites, African Americans, and Hispanics), Asian-American applicants have the lowest admissions rates. In fact, data produced by Harvard show that this has been true for every admissions cycle for the classes of 2000 to 2019.

A closer examination of the six years for which Harvard produced applicant-level admissions data shows that even removing those who receive some other form of preferences (such as legacy, athletic, or early action) still results in Asian Americans having the lowest admit rates over this period. For the Class of 2014 through the Class of 2019, Asian Americans made up roughly 22% of domestic students admitted to the Harvard freshman class. If Harvard relied exclusively on the academic index it assigns to each applicant in making domestic admissions decisions, the Asian-American share of its domestic admitted freshman class over those same six years would be over 50%.

In evaluating applications for admission, Harvard considers factors other than academics, assigning each applicant four component scores and an overall score. The component scores are known as the Academic, Extracurricular, Athletic, and Personal Ratings. The Overall Rating is a score that purports to reflect Harvard's overall assessment of the applicant; it is not an average of these other scores, but it takes them into account. Harvard also assigns scores that rate the quality of the teacher and guidance counselor recommendation letters. Furthermore, if the applicant interviewed with an alum, the scores on the personal and overall rating of the interviewer are also recorded.

Accepting Harvard's scoring of applicants at face value, Harvard imposes a penalty against Asian Americans as compared to whites in the selection of applicants for admission. This penalty has a significant effect on an Asian-American applicant's probability of admission. Consider that an Asian male who is not disadvantaged in the baseline dataset who, based on his observed characteristics (*e.g.*, test scores, Harvard ratings, etc.), has a 25% chance of admission. Yet this applicant would see

his admission probability increase to over 32% had he been treated as a white applicant.

But race also factors into some of the rating components, particularly those that are most subjective. On the more objective measures, Asian-American applicants are very strong. Recall that Asian-American applicants were stronger than any of the other three groups on objective academic credentials. Naturally, then, Asian-American applicants rank higher than any other group based on the Academic Rating. In particular, the most competitive applicants receive a 1 or 2 (the best scores) on the Academic Rating. In the baseline dataset, 58.6% of Asian-American applicants receive a 1 or 2, compared to 44.7% of whites, 14.7% of Hispanics, and 7.3% of African Americans. Asian-American applicants likewise have very strong Extracurricular Ratings, again ranking higher on average than any of the other three groups.

Asian-American applicants, however, do not score as well on the Personal Rating and the Overall Rating relative to other racial/ethnic groups—especially when compared to other groups within the same academic index deciles.[5] On the personal rating, Asian Americans have the lowest share receiving a 1 or a 2 of the four groups. Yet, for all groups, the share receiving one of these top personal ratings is higher with higher academic indices. For example, African-American applicants in the top decile of the academic index are 4 times more likely to receive a 1 or 2 on the personal rating relative to African-American applicants in the bottom decile of the academic index. At the top decile of the academic index, African Americans are twice as likely to receive a 1 or a 2 on the personal rating than Asian Americans in the top decile; Asian Americans in the top decile receive a 1 or 2 at a rate lower than African Americans at the third decile (from the bottom) of the academic index.

But there is no observable reason why this should be so; the testimony from officers and leaders of the Admissions Office is that there is nothing about Asian Americans as a group that would suggest they have less attractive personal qualities. Ratings given by alumni interviewers do not show this pattern. Alumni interviewers score

[5] Asian Americans score worse than all other groups on the Athletic Rating. However, this rating has little impact on admissions outside of recruited athletes.

Asian-American applicants higher than African-American and Hispanic applicants; a result consistent with those who score higher on academics also having stronger personal qualities.

Asian-American applicants also face a penalty on the overall rating, a penalty that increases in magnitude at levels of the overall rating where admission is more likely. The chances of an Asian-American applicant receiving a 2 or better on Harvard's overall rating is 4%. But if Asian-American applicants were treated equally to white applicants, their probability of receiving a 2 or better on Harvard's overall rating would increase from 4% to 4.5%. This effect is statistically significant and represents more than a 12% increased chance in receiving an overall rating of a 2 or better.

The rise in an Asian American's chances of receiving a 2 or better on the overall rating would be even greater if they were treated like African-American or Hispanic applicants. If treated like Hispanic applicants, their probability of receiving a 2 or better would be 2.5 times higher, increasing to over 10%. Had Asian-American applicants been treated like African-American applicants, their probability of receiving a 2 or better would be 4.5 times higher, increasing to over 18%.

The penalty against Asian-American applicants in the overall rating negatively affects their chances of being admitted. Translating the increased chance of receiving a 2 or better on the overall rating into an admission probability helps put the magnitude of the harm in context. The probability of admission to Harvard (for all racial groups) increases by over 50% when an applicant's overall rating moves from 3+ to 2. Moving from a 3+ to a 2 means that the applicant changes from being a likely reject to being a likely admit.

Taking into account both the penalties Asian-American applicants face in the scoring of the personal and overall ratings and in the selection of applicants for admission, I calculate how many Asian Americans were denied admission because of these penalties. Removing the Asian-American penalty while also holding the total number of admits constant in each of the six years would increase the number of Asian-American admits by 235 over the six-year period, a more than 16%

increase in the number of Asian-American applicants admitted during that time frame.

Finally, it is important to emphasize that my estimates of the degree to which Asian Americans are penalized are conservative. In other words, they likely *underestimate* the penalty for three reasons:

- a significant fraction of applicants do not report their race, and some of these are likely Asian American;
- Asian-American applicants are markedly stronger on the observed measures that affect admission, which suggests that they would likely be stronger on the unobserved measures as well; and
- there is evidence that race plays a role in Harvard's characterization of teacher and counselor ratings to the detriment of Asian-American applicants, even though these ratings are less impacted by race/ethnicity than Harvard's personal and overall ratings.

Race Plays a Significant Role in Admissions Decisions. Statistical and econometric methods can be used to determine the effects of Harvard's penalty against Asian-American applicants (*i.e.*, the extent to which they are treated worse than similar white applicants) as well as how preferences given to African-American and Hispanic applicants negatively affect Asian-American applicants. In particular, using the baseline dataset and my preferred model:

- An Asian-American applicant who was male, who was not disadvantaged, and whose characteristics result in a 25% chance of admission would have more than a 36% chance of admission if treated as a white applicant; more than a 75% chance of admission if treated as a Hispanic applicant; and more than a 95% chance of admission if treated as an African-American applicant (with all other characteristics unchanged).
- If all Asian-American applicants were treated as white applicants, their chance of admission would increase from 3.95% to 4.7%; if they were treated as Hispanic applicants, their admission rate would jump more than three times higher, with their chances of admission increasing to 12.3%; and if they were treated as African-American applicants, the Asian-American admission rate would jump to more than six times the actual rate, increasing to a 24.2% chance of admission.

- Removing racial and ethnic preferences (both preferences for African Americans and Hispanics and penalties for Asian Americans) while holding the total number of admits constant in each of the six years would increase the number of Asian-American admits by 674 over the six-year period, more than a 46% increase.

Notably, Harvard's preferential treatment of African-American and Hispanic applicants is not the result of efforts to achieve socioeconomic diversity. Rather, preferences for African Americans and Hispanics are significantly smaller if the applicant is economically disadvantaged. While students flagged by the admissions office as disadvantaged generally receive a modest boost in admissions, this is not true for African Americans (who receive no such boost) and the boost is cut in half for Hispanics.

In other words, Harvard is not employing racial preferences in an effort to benefit disadvantaged minority students. Harvard admits more than twice as many non-disadvantaged African-American applicants than disadvantaged African-American applicants. This would not be the case if Harvard eliminated racial preferences, but provided a uniform preference for socioeconomic status. Under that scenario, disadvantaged African-American admits would outnumber the non-disadvantaged African-American admits.

Asian Americans are the Primary Group Hurt by Preferences Given in Harvard's Admissions Office. The discussion so far has focused on the baseline dataset, which reveals a penalty against Asian Americans in admissions and Asian-American admit rates being negatively affected by racial preferences. The fact that legacies and athletes are excluded from that dataset means that Harvard's preferences for those groups cannot explain the unequal treatment of Asian-American applicants. Turning to the expanded dataset allows me to separately uncover the effects of preferences for athletes and legacies on Asian-American applicants. Although the effects of removing either legacy or athlete preferences are small compared with the effects of removing racial/ethnic penalties and preferences, Asian-American applicants are hurt by these preferences as well. Holding fixed the number of applicants that Harvard admitted over the six-year period, removing preferences for legacies and athletes would increase the number of admitted Asian Americans by 4% and 7%, respectively.

More stark are the effects of removing all racial preferences for under-represented minorities, penalties against Asian Americans, and legacy and athlete preferences. The number of Asian-American admits would increase by 1,241 over the six-year period, a 50% increase.[6]

Artificial Floor for African-American Admit Rates. Before the Class of 2017, Harvard employed a methodology for tracking admissions by racial group that involved recording multi-racial students as African-American if any one of the racial groups they self-selected was African-American. But starting with the Class of 2017, Harvard began recording admissions by racial group using the federal IPEDS methodology. Under the IPEDS methodology, students of more than one race are recorded as "multiracial," rather than as a member of any single racial group.

In the three years since this change, Harvard's admission rate for single-race African-American applicants using the IPEDS method almost exactly matched the admission rate for all other domestic applicants. Indeed, the two rates were within 0.00064 of each other in all three years—a miniscule disparity, especially given the size of the admitted class. Using statistical methods employed to determine whether this could have happened randomly (*i.e.*, without direct manipulation), I found the probability that the difference between African-American admission rates and the admission rates for all other applicants would be smaller than 0.00064 in each of the three years is less than 0.2%.

My Findings Are Consistent with Harvard's Own Internal Analyses Before this Lawsuit. My findings are consistent with and reinforced by the independent work of Harvard's Office of Institutional Research (OIR), which undertook to conduct its own analysis of the effect of race on various admissions processes at Harvard.[7] Those internal studies—prepared more than a year before this litigation was filed—draw upon ten years of Harvard's admissions data, seven of which predate the applicant-level data Harvard provided in this case. OIR personnel

[6] Whites would also see gains, but the increase is small at 178, a 3.5% increase. The smaller gains occur because whites lose out from the removal of preferences for legacies and athletes. The increase in Asian-American admits comes at the expense of African-American and Hispanic admits who see drops of 964 and 524, respectively.

[7] *See* HARV00031718; HARV00065741, HARV00023547, HARV00069760.

employed logistic regression models to generate admission probabilities to predict admit rates, based on particular factors.

These reports found that:

- Asian-American applicants, on average, had stronger academic credentials than other applicants.[8] If academic credentials alone dictated the shape of the class, OIR determined that Asian Americans would make up 43% of the admitted class. And Asian Americans were found to have better SAT, SAT II, and Academic Index scores than their white counterparts.[9]

- Legacy and athlete status could not explain the disparities between whites and Asian Americans.[10]

- Harvard's admissions officers assign significantly lower "personal" scores to Asian Americans as compared to whites. The difference is notable because similar ratings by teachers, guidance counselors, and alumni interviewers do not show nearly as much of a difference between those two groups.[11] The use of personal and extracurricular scores as a whole has a negative effect on the predicted admission rate of Asian-American applicants, but not on the applicants of all other races.[12]

- Accounting for race and gender, Asian Americans see their share of the predicted admissions class fall from 26% to 18%. Whites see a decline from 50.6% to 44.1%; the Hispanic share increases from 4.1% to 9.8%; the African-American share increases from 2.4% to 11.1%.[13]

All of these conclusions are consistent with my analysis, despite being conducted by Harvard's researchers over a different time period and using slightly different methodologies.

[8] HARV00065742, HARV00065745.

[9] HARV00031720.

[10] *See* HARV00065756; HARV00031720.

[11] HARV00065745.

[12] HARV00031720. Because Asian Americans are stronger on the extracurricular rating, this finding is likely driven by the personal rating.

[13] *Id.*

2 Background, Data, and Methods

2.1 Background

I earned a bachelor's degree in Economics from Willamette University, and I earned a Ph.D. in Economics from the University of Wisconsin, where I was awarded a Sloan Dissertation Fellowship.

I am a Professor in the Department of Economics at Duke University. I joined the Duke Economics faculty as an Assistant Professor in 1999, was promoted to Associate Professor (with tenure) in 2006, and became a Full Professor in 2010. I have taken multiple Ph.D.-level courses in econometrics and regularly teach a Ph.D.-level class on the estimation of dynamic models.

My primary fields of interest are Labor Economics, Applied Econometrics, and Applied Microeconomics. These fields all involve the quantitative analysis of economic data through the application of mathematics and statistical methods in order to draw reliable inferences that give empirical content to economic relations.

I have served as an editor or associate editor for several economics journals, including serving as editor for the Journal of Labor Economics, the top field journal in labor economics; a coeditor at Economic Inquiry and Quantitative Economics; an associate editor for the Journal of Applied Econometrics; and a foreign editor for The Review of Economic Studies, one of the top five general-interest journals in economics, and one of the two top-five economics journals that publishes pieces on econometrics.

I have published dozens of works in peer-reviewed academic and economics journals, and have given presentations across the country and around the world on topics in applied economics and econometrics. I also have two survey papers on racial preferences in higher education, including one in the Journal of Economic Literature, widely regarded as the top journal for works synthesizing the literature on a particular topic.

In connection with my work and my research in economics and econometrics, I regularly employ statistical methods and conduct statistical analyses in accordance with generally accepted practices in my field. I have applied discrete choice analysis, where the dependent variable is binary, in much of my work, including using it to characterize the role of race in both undergraduate and law school admissions. I have been awarded numerous grants for research in these areas generally and in particular with regard to the nature, impacts, and the role of race as a factor in admissions decisions in American higher education.

A complete copy of my CV, including all published works for the past ten years, is attached at Appendix E.

I was retained in this matter by counsel for SFFA to provide economic and statistical analysis of Harvard's use of race as a factor in undergraduate admissions decisions. The rate for my services in this matter is $450/hour, and is not dependent on reaching any particular result or conclusion. As part of this effort, I was assisted at various points by two colleagues who worked under my direct supervision.

In the past four years, I testified as an expert at a deposition and trial in the case of *Sander v. State Bar of California*, San Francisco City and County Super. Court CPF-08-508880.

2.2 Data

2.2.1 Data Sources

I use a number of data sources for my analysis. The most important of these is the admissions data produced by Harvard containing selected anonymized data on individual applications for the 2014 to 2019 admission cycles.[14] The data include a variety of information regarding the demographic background, educational achievements, and other information about the applicants. They also include

[14] The dating of the admission cycles refers to when the applicant would typically graduate from Harvard should they be accepted and complete their studies in four years. Hence the actual application dates are generally five years before the date associated with the admissions cycle.

Harvard's scores for the applicants on a variety of measures. Harvard also produced data sufficient to identify the timing that the admissions decisions were made regarding each applicant.[15]

For many of the applicants in the Harvard database, Harvard has separately produced information from the College Board that provides the characteristics of the neighborhoods and high schools of the applicants.[16] I merged these data with the data from the Harvard admissions databases to provide additional information about each applicant.

I also make use of a document produced by Harvard (HARV00032509) that provides information on the number of applicants, admits, and matriculants for the 2000 through 2017 admissions cycles. I used several documents produced by Harvard (for example, HARV00001891 and HARV00018639) to determine how Harvard was assigning and tracking race/ethnicity. In particular, these documents show what groups Harvard is keeping track of during the 2017 through 2019 admission cycles. By sorting the data Harvard provided, I can match the numbers on these sheets and thus employ the same classifications of race and ethnicity that Harvard used during the applicable period.[17]

To supplement my understanding of Harvard's admissions process and the statistical analysis, I also reviewed a number of application files and summary sheets that Harvard produced in this case. The application files were for the admissions cycles of 2018 and 2019; Harvard selected 80 applicants from each of those years; SFFA selected 160 applicants from each year. This resulted in a total of 480 application files. The summary sheets were chosen by applying certain "key words" to test for discussions of racial identity or for evidence of unequal treatment

[15] A list of what data Harvard produced and omitted (either by agreement of the parties or order of the Court) can be found at HARV00006413, HARV00006471, HARV00006541, HARV00006607, HARV00006695, and HARV00006759.

[16] As discussed in Section 2.2.3, applicants are assigned to dockets based on where they attend high school. For those who attend high schools outside of the United States, no information is provided by the College Board.

[17] Several deponents also discussed the ways in which Harvard has tracked applicants' race over time. *See, e.g.,* Fitzsimmons Depo. at 93:13-99:25 (explaining the differences between new methodology, old methodology, and IPEDS); Yong Depo. at 133:10-139:24 (same).

on the basis of race or ethnicity. A total of 640 summary sheets were ultimately produced (in addition to those included in the application files).

Finally, I reviewed a number of reports prepared by Harvard's Office of Institutional Research (OIR) that analyze the treatment of race/ethnicity in Harvard's admissions process (HARV00031687, HARV00065741, HARV00069739, and HARV00069794). The results reflected in these reports informed (and in many cases confirmed) my analysis,[18] although I have not been provided with the data used to generate those reports and thus did not repeat or incorporate any OIR analysis into my data model.[19]

2.2.2 The Timing and Evaluation of Applications by Harvard

The documents described above provide a wealth of information about Harvard's admissions process. Because the process necessarily informs my analysis of the data, I provide a summary of my understanding of that process here.

For the 2014 and 2015 admission cycles, Harvard did not have an "early action" admissions process. Applications were due January 1st. Completed applications were assigned to "dockets" within the admissions office based on geography and a desire to roughly divide the applications evenly among admissions officers. The states/regions that were assigned to each docket changed slightly over time.

Applicants submit a variety of materials to Harvard (either directly or through third-party services such as the Common Application). All applicants are expected to submit their standardized test scores, their high school transcripts, information about extracurricular and athletic participation, and any other achievements the applicant wants Harvard to consider. The applicant also submits a writing supplement and at least two letters of recommendation from teachers and/or

[18] The statistical analyses conducted by Harvard's OIR do not appear to control for as many variables as my analysis here. They nonetheless are useful for confirming and corroborating my analysis.

[19] In addition to these data, I reviewed extensive materials produced by Harvard (including training documents and other documents used by the admissions office (listed in Appendix D)), as well as the deposition testimony of several Harvard officials, including William Fitzsimmons, Marlyn McGrath, Sally Donahue, Elizabeth Yong, Erin Driver-Linn, and Mark Hansen.

guidance counselors. This information is compiled into the applicant's file. Before 2019, the file was maintained both in a hard copy format and an electronic format, although the latter may not contain all of the information in the file.[20] Harvard switched to an online reading system beginning with the 2019 cycle, in which all file materials are maintained electronically.

Each file is associated with a summary sheet, completed by the "first reader" in the admissions office. The summary sheet lists various test scores, demographic information such as race, ethnicity, gender, and information about the applicant's parents.[21] There is also information about their extracurricular activities and how much time is spent on each activity.

The first reader assigns scores to the applicant in a number of areas.[22] [redacted]

Each applicant is given an academic rating, an extracurricular rating, an athletic rating, a personal rating, and an overall rating.[23] The first reader would also give a rating for two or more letters of recommendations from high school teachers and a rating from his or her college or guidance counselor. The ratings for these school support measures are how the reader interprets the strength of the letters; they are not scores given by the recommenders themselves. The scores are written on the summary sheets and captured in the electronic databases, with some limitations.[24]

[20] Before 2019, Harvard would automatically pull and/or manually enter much of the information from the file into their electronic databases, but would not capture materials such as the essays or letters of recommendations.

[21] I have only seen summary sheets for 2018 and 2019, but I assume (based in part on the electronic data produced by Harvard) that this holds true for the earlier admissions cycles.

[22] The guidelines for admissions officers to use in 2018 when rating files are set forth in HARV00000798.

[23] Ratings of 1 on athletics are reserved for [redacted].

[24] In years before the 2019 admissions cycle, for example, the overall rating set forth in the database only shows pluses and minuses for the final reader. For these same years, there is also only one set of scores for the various components (academic, extracurricular, athletic, personal, etc.), and no pluses/minuses for these scores. I treat the component scores as

Applicants may interview with an alum, and the admissions office may encourage interviews for promising candidates. An interview is not a prerequisite for admission, although in practice, those who do not interview are rarely admitted. The alumni interviewer's personal rating and overall rating for each applicant are recorded on the summary sheet.[25]

Finally, the first reader may highlight particular information on the summary sheet as well as make comments regarding the strength of the application. [redacted]

Those with worse overall ratings may also receive an additional read if the initial reader believes the file is of sufficient interest. The additional reader also may make comments regarding the strength of the application.

The candidates are then considered for admission in a series of meetings. The first round of meetings is within each docket, sometimes referred to as subcommittee meetings. The admissions officers go through each application from the docket (going high school by high school) and tentative admission decisions are made. [redacted]

The full committee—all of the admissions officers (including the office leadership)—then meets to consider whether to accept the subcommittee recommendations, or to add or eliminate individual candidates to the class. During this process, the information in the summary sheet and file (including race) remain available to all members of the committee. Votes are taken, during which the racial composition of the class is tracked by the leaders of the admissions office. [redacted]

being given by the final reader of the applicant. There are also some observations that have rating profiles that are non-standard. Table A.1 shows how these ratings are coded, with a discussion in the appendix.

[25] The guidelines for alumni interviewers are set forth in HARV00015816.

[redacted] Admitted students are notified of their status—rejected, accepted, waitlisted—in late March. As students decide whether they will attend, additional decisions are made as necessary to admit students from the waitlist.

For the 2016 to 2019 admissions cycles, applicants could apply early action or as part of the regular decision process. If the applicant applied through the regular admission process, the scoring and handling of the application proceeded as described above. If the applicant applied as part of early action, the application deadline was on or around November 1, and applicants would learn in mid-December whether they were rejected, admitted, or deferred to the regular admission pool. Since the 2016 cycle, Harvard has operated under a "restrictive early action" process, meaning that if an applicant applies early to Harvard then the applicant commits to not applying early to any other domestic private universities. The scoring of the applications follows the same process as regular decisions; the only difference is the timing of the relevant deadlines and the possibility that a candidate may be rated as a "defer" to be reconsidered as part of the regular action process.

2.3 Methods

2.3.1 Measuring the Role of Race in the Selection of Applicants for Admission

Examining how decisions are made with regard to who is admitted to a college, who is hired for a job, or whether to attend a college are complicated processes depending on many factors. Some of the factors that affect these decisions will be readily observed, while other factors may be difficult to quantify or not in the data. Yet despite these processes being complicated, it is still possible to utilize the data to understand how decisions are made through statistical and econometric methods. Indeed, much of empirical economics does exactly this.

So although Harvard purports to use a "holistic" admissions process, one can still quantify the role various factors play in the admissions decisions. Those who are admitted have different characteristics than those who are rejected, which has implications for how these characteristics affect the admissions decision.

To evaluate whether Harvard is imposing a penalty against Asian-American applicants in admissions and granting preferences in admissions for other groups, I use generally accepted methods for analyzing outcome variables that can take on only one of two values. Here the outcome measure is whether or not a particular applicant is admitted. A standard way of estimating a model with a binary outcome is to use a logit model. The mathematical basis for the model is described in Appendix A.[26]

By making an admission decision, Harvard reveals an implicit ranking of the applicants: those who are admitted were ranked higher than those who were not admitted. This ranking depends on characteristics that are seen in the data and other factors that are not. By estimating a model of how Harvard makes their admission decisions, I can calculate an applicant's probability of admission given their observed characteristics. This probability reflects how often the applicant would be admitted if this applicant was seen multiple times, each with a different value of their unobserved characteristics.

One of the observed characteristics included in the model is the race of the applicant. The relationship between this variable and the admission decision depends on what controls are included in the model. By controls, I mean factors that may affect the admissions decision but also may vary by race. For example, suppose group A has the same admit rate as group B, but group A has higher test scores than group B. Assuming that higher test scores make admission more likely, excluding test scores would make it appear as though being a member of group A or B did not matter for admission. By controlling for test scores, one can show that group A was being held to a higher standard than group B, all else equal.

[26] Note that Harvard's own Office of Institutional Research used logistic regression for their own, internal analysis of the admissions process. *See* Hansen Depo. at 85:23-86:13 (explaining that a "logistic regression model" is used "to get probabilities as an output"); *see, e.g.*, HARV00019629 (OIR using a "logistic regression model to predict the probability of admission, controlling for demographic characteristics and a variety of metrics used to assess qualification for admission"); HARV00023562 (OIR predicting "admit rates by income" based on "logistic regression models that control for academic index, academic rating, athlete, legacy, extracurricular rating, personal rating, ethnicity, and gender").

One of the key advantages of the Harvard database is that the set of observed characteristics is more robust than what is typically available. Many peer-reviewed studies in excellent journals have been published analyzing discrimination with data of much lower quality. But there is nonetheless the issue, which is faced by all discrimination studies using observational data, of whether accounting for unobserved characteristics would eliminate the finding of a penalty against Asian-Americans.

For example, consider differences in earnings across college majors. A large gap exists, with those in engineering and business typically earning more than those who majored in humanities and education. However, when controls for test scores and hours worked are included, the gap shrinks. An remaining question, then, is whether additional controls would lead to a further shrinking of the gap or would eliminate the gap altogether. The assumption operating in the background is that if one group is stronger on the observed measures, it is reasonable to believe that the same group is also stronger on the unobserved measures. If, however, including additional characteristics leads to a widening of the gap between the two groups, then it is reasonable to expect that if more controls were added, the gap would, if anything, increase.[27]

2.3.2 Measuring the Role of Race in the Scoring of Applicants

Importantly, the observed applicant characteristics themselves may be the result of racial penalties and preferences. For example, suppose Asian-American applicants are penalized in one of Harvard's ratings because of their race. Controlling for a measure that already incorporates a penalty would result in under-estimating any penalties Asian-American students face.

To assess whether there are racial penalties and preferences in the rating themselves, I take two approaches. First, I examine how Harvard's ratings relate to

[27] An example of this in my analysis can be illustrated by reference to Advanced Placement (AP) exams. Scores on those exams are not available in the earlier years of the data produced by Harvard, and therefore are not included in estimation. Not accounting for AP exams may result in underestimating the penalty Asian-American applicants face, if Asian Americans are more likely to take AP exams and receive higher scores on the exams they take.

other characteristics in the data. Do those with higher grades and test scores have higher Harvard ratings? Is this true for all racial/ethnic groups? If so, do the patterns of how races and ethnicities are ranked on these measures diverge from the relationships we see between academics and these measures?

Second, the techniques I use are similar to those used in detecting racial penalties and preferences in the selection of applicants for admission, except that now the rating itself is the dependent variable. Here, I have more information as Harvard's ratings are not simply zero or one but take on a number of discrete values (*e.g.*, 1, 2+, 2, etc.). These discrete values again show Harvard's implicit ratings of the applicants on various measures. A standard technique for modeling ordinal ratings is an ordered logit. An ordered logit is based on the premise that with access to all of the observed and unobserved characteristics I would be able to match Harvard's rating exactly. This rating would result in cutoffs where those above a certain cutoff would receive a 1, then those above the next cutoff would receive a 2+, etc.

Further, I can see how adding controls affects the coefficients on race/ethnicity. To the extent that significant differences across races/ethnicities remain after controlling for observed characteristics, I can see whether the remaining differences are consistent with the patterns expected from the observed characteristics. For example, if Asian-American applicants have characteristics that would suggest they should receive higher ratings than other groups and yet they receive lower ratings, this would be evidence of a penalty.

Racial penalties and preferences may also matter more at some levels of a particular rating than others. For example, distinguishing between a 3- and a 3 in the overall rating may be unimportant for the purposes of admission as the likelihood of admission is small in either case. But the stakes are much higher when considering whether to rank an applicant as a 2+ or a 2-. If there are racial penalties and preferences in the overall rating, I would expect those penalties and preferences to be more prevalent at higher levels.

To incorporate the possibility of racial preferences mattering more at higher levels of the overall rating than lower levels, I estimate a generalized ordered logit model. This model allows for the cutoffs in the ordered logit to vary by race/ethnicity such

that the penalty or preference a group receives may vary at different levels of the rating.

2.3.3. Selecting the Data for Analysis

To apply the model and analyze the data Harvard produced, I began by identifying the populations that should be analyzed.

To start, I limited the focus to domestic, non-transfer applications. Harvard's internal tracking of applicant race treats International applicants as their own category, so I likewise excluded them in my analysis. And because Harvard receives few transfer applications and accepts fewer transfer applicants each year, I focused on the vast majority of applicants who apply for the first-year class. I also eliminated those whose applications were incomplete and those who withdrew their applications during that process. Over the course of the six admissions cycles, this left a population of 166,727 applications.

I then considered whether to further separate the dataset in conducting my analysis. Although my task is to determine the effect of one factor (race), it is not the only factor that may affect admissions. An initial review of the data revealed several other applicant categories that were strongly associated with admission:

- **Athletes and legacies.** Harvard has previously acknowledged that it gives preferences to recruited athletes and to the children of alumni. Indeed, it has previously defended claims of bias against Asian Americans by referring to these preferences.[28] Table A.2 shows that the admit rate was 86% and 33.6% for athletes and legacies respectively, with admit rates for non-legacies and non-athletes at 6%.

- **Faculty and staff dependents.** Harvard's database contains a flag for students who are related to a faculty or staff member. Table A.2. shows these applicants also have a much higher admit rate (46.7%) than the applicant pool as whole.

- **Dean and Director's Interest List candidates.** Harvard's databases also flag candidates who are designated as appearing on the "Dean's Interest" or "Director's Interest" lists. [redacted]

[28] *See* HARV00023651; HARV00023143-44; Fitzsimmons Depo. at 371:19-374:3; Hansen Depo. at 114:7-115:19.

[redacted] Table A.2 shows that this admit rate is also much higher (42.2%) than the applicant pool as a whole.

- **Early action.** For four of the six years of data provided by Harvard, it accepted applications through an early action process. As shown in Table A.3, regular-action admit rates have been falling in each year, in part due to the increased popularity of early action after the 2015 admissions cycle. Early-action admit rates are between 5.8 and 7 times regular decision admit rates in the same year. This is partially explained by the fact that early applicants are more likely to exhibit characteristics associated with higher admit rates—such as legacy or athlete status. Table A.4 shows that these groups represent a much larger share of applicants in the early admission cycles and correspondingly a large share of early action admits. But even removing these groups shows admission rates for early decision applicants that are well above the admissions decisions for regular admission applicants, between 4.3 and 5.1 times higher in each year.

Given the substantial distinctions in admissions rates for the groups described above, I elected to focus my analysis on two datasets. First, is what I refer to as the "baseline" dataset. The baseline dataset includes regular decision applicants who are not athletes, legacies, early decision, dependents of Harvard employees (faculty or staff), or designated on the Dean or Director Interest lists. Each of these characteristics is associated with preferential treatment by Harvard, and thus an increased chance of admission. Excluding them from the baseline dataset allows us to better compare similarly-situated candidates, and thus better perceive the role that racial preferences are playing in the admissions process. But because there is a substantial portion of applicants who do fall into the other preference groups, I also analyze an "expanded" dataset that includes all domestic first-year applicants with complete applications and data.

I make cuts to this dataset due to missing information for some of the fields. The number of observations removed from the baseline and expanded datasets from each restriction are given in Table A.5. The only cuts that remove admits are of those missing SAT scores or missing Harvard's academic index,[29] resulting in 64

[29] The academic index is a combination of the SAT score (or ACT score converted to an SAT score), SAT2 subject tests, and high school grades or class rank. For the SAT scores, the highest score on the math section across all the times the applicant took the SAT or ACT is

admits removed out of 11,132. For those missing either of these measures, the acceptance rate is less than half of one percent.

In order to examine how race/ethnicity is used in admissions, I classify applicants into mutually exclusive categories: white, African American, Hispanic, Native American, Hawaiian, Asian American, and—in the case where the applicant chooses not to answer—missing. The rules for how applicants are assigned to these categories follows from their classification in the Harvard data.[30] Although Harvard has occasionally deployed alternative methods for tracking and reporting race in recent years, the methodology adopted here is based upon the counts and tracking Harvard does during the admissions process, on its "one-pagers" and other internal reports.

2.4 Factors Correlated with Admission

Table A.7 shows descriptive statistics for the two datasets by whether or not the applicant was admitted, focusing on demographic characteristics and academic performance. When the number in the admit column is higher than the number in the reject column, that variable is positively correlated with admission. Average test scores, grades, and Harvard's academic index are all substantially higher for those who are admitted, over 0.4 standard deviations for each in the baseline dataset. Those who are admitted have on average taken more AP exams and scored higher on them. Those who are disadvantaged represent a greater share of admits than rejects. This is particularly true in the baseline dataset where the share of admits who are disadvantaged is twice as high as the share of rejects who are disadvantaged.

Table A.8 shows the share of rejects and admits who receive different scores on each of Harvard's rankings. Those who score better than a 3+ on any of the measures are

---

averaged with the highest verbal section, again across all the times the applicant took the SAT or ACT, all divided by 10. Similarly, the SAT2 scores used are the highest two of their subject tests (conditional on the subject tests being different) averaged and divided by 10. Class rank or, less preferable, high school grade point average are converted to a 20-80 scale to mirror that of SAT scores. The three scores are then added together, with a possible range of 60 to 240.

[30] See Table A.6 for how Harvard assigns applicants to a single race/ethnicity.

more likely to be admitted. For the baseline dataset, the share of admits who have a 3+ or better is at least 34 percentage points higher than the corresponding share of rejects for all measures except for athletic.[31] Virtually no one is admitted with scores of worse than a 3- on the academic rating, personal rating, or the school support measures and, to the extent that they are admitted, it is primarily through the various preferences included in the expanded dataset (*e.g.*, legacies, athletes, Dean's or Director's Interest List, child of Harvard faculty/staff).

3. Analysis

3.1 Time Trends in the Treatment of Race

3.1.1 Admit Rates by Race/Ethnicity and the Quality of the Applicant Pool Over Time

In this section, I make use of HARV00032509 *to show patterns in admits rates and test scores for applicants and admits by race/ethnicity over time.*[32] *In every admission cycle, Asian-American admit rates are below the average admit rate for the class and for all other racial groups. African-American admit rates, on the other hand, always approximate or exceed the average admit rate for the class. This occurs despite the average test scores of Asian-American applicants is significantly higher than the average for each of the other three groups (whites, African Americans, and Hispanics), so much so that the average test scores for Asian-American* ***applicants*** *are higher then the average test scores of African-American and Hispanic* ***admits*** *in every year (separately and collectively). Similarly, Asian-American rejects have higher academic indexes than African-American admits.*

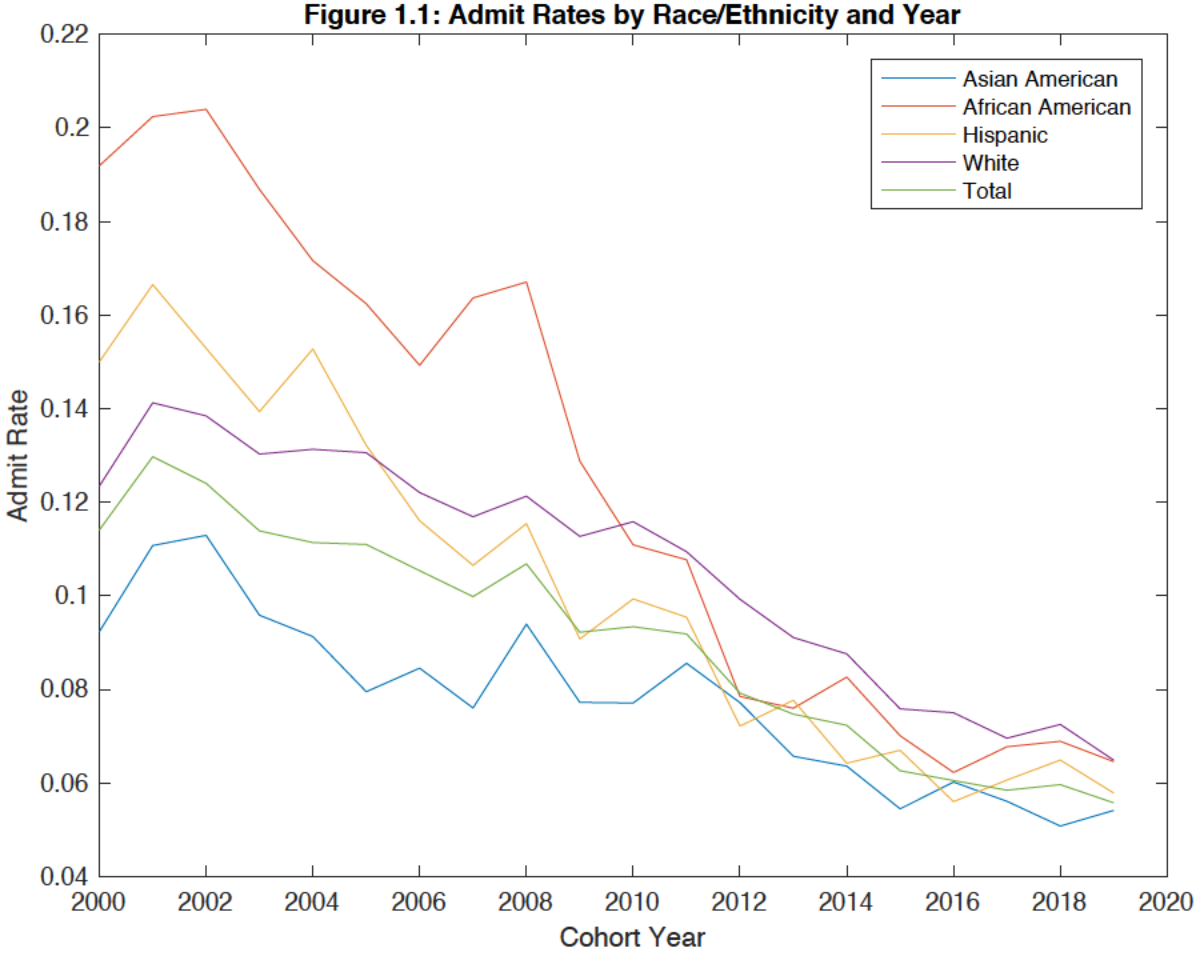
Figure 1.1 presents the raw admit rates for each racial/ethnic group as well as the total admit rate for all applicants for the 20 years from the Class of 2000 through

[31] The relationship between the athletic rating and admissions is weak once athletes are removed. Athletes receive a 1 on the athletic rating and, as shown in Section 2.2.3, have very high admit rates. However, once athletes are taken out, the relationship between the athletic rating and admissions is weak.

[32] Recall that HARV00032509 contained information by year and race/ethnicity on the number of applicants, admits, and matriculants. No race/ethnicity was recorded for international students (defined as those who are not U.S. citizens or permanent residents) but the number of international applicants, admits, and matriculants is available in HARV00032509.

the Class of 2019. The Asian-American admit rate is below the total admit rate in every year. And they are the only one of the four major racial groups to consistently be below the average for the class.[33] That the Asian-American admit rate is consistently below the total admit rate over two decades points towards a potential ceiling on the Asian-American admit rate.

Figure 1.1: Admit Rates by Race/Ethnicity and Year

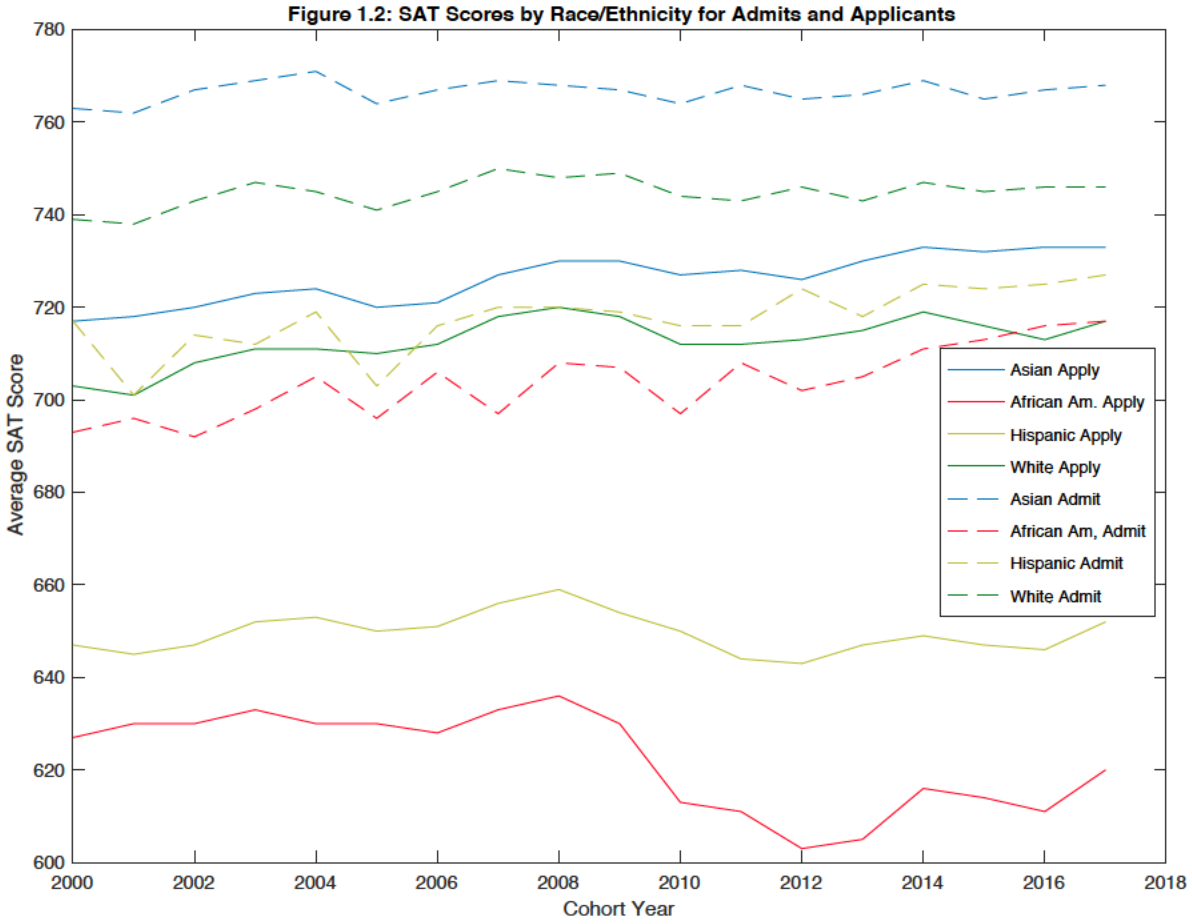


Both African-American and Hispanic admit rates start out well above white admit rates, but as time passes move below. This reduction appears to be attributable to increased applications of African Americans and Hispanics in recent years. As Figures B.1.1 through B.1.4 show, the share of the African Americans and

[33] International students—which are excluded from this analysis per Harvard's own practices in tracking race—are the only other group with consistently below-average admit rates.

Hispanics in the applicant pool has increased substantially since the 2008 admissions cycle.

Comparing raw admit rates, however, does not account for the relative quality within these various applicant pools. Using one measure of quality important to Harvard—SAT scores[34]—two things become apparent, as shown in Figure 1.2.



First, the increase in applications post-2008 by African Americans and Hispanics is accompanied by a lowering of the average SAT score of applicants from these groups. This suggests that part of the drop in admission rates was due to increases in minority applications from students with lower levels of academic preparedness.

[34] From the Harvard database, I can back out what I believe the SAT measure that is being used in HARV00032509: SAT Math plus the maximum of the SAT Verbal and SAT Writing, all divided by two.

This is consistent with Harvard recruiting students from these ethnicities with lower test scores.[35]

Second, Asian-American applicants have higher test scores than each of the other racial groups. In every year, Asian applicants and admits have higher test scores than white applicants and admits. And over the course of this period, Asian-American applicants had test scores between 88 and 125 points higher than African Americans per section[36] and between 70 and 87 points higher than Hispanic applicants per section. Indeed, in every year Asian-American *applicants* had higher test scores than either African American or Hispanic *admits*.

3.1.2 There is Strong Statistical Evidence that Harvard Employed a Floor for African-American Admits for at Least the Post-2016 Admission Cycles

In the three most recent admissions cycles for which Harvard produced data (the cycles for the Classes of 2017 through 2019), the admit rates for African-American applicants are almost exactly the same as the admit rates for all other domestic applicants. Indeed, the rates are so close as to render it extremely unlikely that this could have been the product of chance rather than intentional manipulation.

That the African-American admit rate is virtually always above the total admit rate over the same two decades points towards a potential floor on the African-American admit rate. But the data presented in Figures 1.1 and 1.2 do not suffice to draw any firm conclusions on these points.

However, a notable pattern becomes apparent in the data in the three most recent admissions cycles. For the Class of 2017 and going forward, Harvard adopted a new methodology for coding race and ethnicity that was consistent with federal standards for reporting of race and ethnicity. Under the federal methodology used for the Integrated Postsecondary Education Data System (IPEDS), a student who did not identify as Hispanic, but did identify as being of more than one race/ethnicity, would be classified as "two or more races," and excluded from the

[35] *See* Fitzsimmons Depo. at 68:2-77:26 (describing different searches by race and test score); *see, e.*g., HARV00023564 (test score searches by race for class of 2018).

[36] Recall that the SAT score measure used is the sum of two scores divided by two.

categories for those who reported a single ethnicity (*i.e.*, white, African American, etc.). Thus, using this methodology, a student who reported his or her race as both African American and white would no longer be coded as "African American" (as Harvard previously had done).

It appears that this prompted concern at Harvard that the new reporting would understate the number of African-American admits to Harvard.[37] The portion of the admitted class that was single-race African American was below 7% for each of the last three cohorts and the lowest fraction of the admitted class that coded as African American under the old methodology in the last 19 admissions cycles was above 8%.

Table 1.1 reports admit rates for African-American applicants and all other domestic applicants.

Table 1.1: Single-Race African American v. Non-African American Admit Rates

Admission Cycle		Rate
2017	African-American	0.06399
	Non-African American	0.06424
	Difference	-0.00025
2018	African-American	0.06585
	Non-African American	0.06521
	Difference	0.00064
2019	African-American	0.06059
	Non-African American	0.06084
	Difference	-0.00025

It is notable how close the African-American and non-African-American admit rates are in each of these three years. In the Classes of 2017 and 2019, the difference in the two admit rates is 0.00025—*less than three thousandths of a percentage point*. And the *maximum* difference (in 2018) is 0.00064—*less than seven hundredths of a*

[37] *See* Fitzsimmons Depo. at 93:13-99:25 (explaining the differences between new methodology, old methodology, and IPEDS); Yong Depo. at 133:10-139:24 (same); *see also* HARV00065451 ("[T]he IPEDS reporting system leads to significantly lower percentages for all ethnicities except Hispanic Americans."); *see, e.g.*, HARV00074743 (for class of 2016, showing 11.7% of the class was multiracial under the new methodology and 4.1% of the class was multiracial under IPEDS).

percent. These differences are incredibly small, especially considering the size of the admitted class.[38]

It is extremely unlikely that the admit rates for African-American applicants could come this close to exactly mirroring the admit rates for non-African-American applicants over three consecutive admissions cycles by mere happenstance (as opposed to direct manipulation). To illustrate the point, I set up a simple simulation designed to get the admissions rates as close as possible absent direct manipulation. Namely, the simulation is set up so that the average probability of admission is exactly the same for each group, regardless of where Harvard sets the cutoff for admission: racial preferences for single-race African Americans exactly counteract differences in the quality of the applicants across single-race African Americans and other domestic applicants. In so doing, I *maximize* the probability that the two admit rates will be close together.

Next, I simulate Harvard's admissions decisions for the 2017, 2018, and 2019 cohorts taking as given the number of single-race African-American applicants, the number of other domestic applicants, and the total number of admits. Details of the simulation procedure are in Appendix B. The probability that the difference in admit rates would be smaller than 0.00064 in each of the three years without direct manipulation is *less than two-tenths of one percent (0.2%)* despite setting up the simulations such that differences across the two groups would be minimized. Put differently, I can say with 99.8% confidence that Harvard has manipulated its admissions process to ensure that the African-American admissions rate tracks the

[38] Notably, the admit rate for single-race African-American applicants did not exhibit this behavior before the admissions cycle for the Class of 2017 when Harvard's Admissions Office began using the IPEDS methodology. Because Harvard's Admissions Office did not code for race/ethnicity using the IPEDS methodology before the admissions cycle for the Class of 2017, this type of data is unavailable for the Classes of 2014, 2015, and 2016. But using the measures that are available, I am able to mimic the single-race African-American admit rates in 2017, 2018, and 2019 and use this data to create similar single-race African-American (and all other domestic applicant) admit rates for the Classes of 2014, 2015, and 2016. These results are reported in the second set of columns of Table B.1. The *minimum* difference in admit rates for the years 2014, 2015, and 2016 are significantly higher. The average difference between the pre-2017 cycles is 12.7 times higher than the average difference in the post-2017 cycles.

overall admissions rate—it operates as a floor for African-American admit rates over at least those three admission cycles.

To investigate this issue further, I analyzed the data Harvard produced reflecting its day-by-day changes in admissions decisions (Harvard's admissions data include information about each time a candidate's admissions status was changed). Although these admissions decisions are not final until they are announced, it is possible to see how Harvard is constructing the class at each point in time. My coding of admissions decisions matches Harvard's, as I was able to match the "one-pagers" that Harvard admissions officials use to monitor the composition of the class.[39] Day-by-day tracking of admissions for the Classes of 2014 to 2019 are given in Tables B.1.2 through B.1.7.

Clear distinctions emerge when comparing the data in the last three years versus the first three years. In the three-year period before Harvard began employing the IPEDS coding methodology (*i.e.*, for the Classes of 2014 through 2016), the admit rate for single-race African Americans is below that of other domestic applicants on every day in each of the three admissions cycles. However, for the three-year period since Harvard began employing the IPEDS methodology to code race/ethnicity (*i.e.*, for the Classes of 2017 through 2019), the admit rates for single-race African Americans begin below that of other domestic applicants, then rise until they approximate or exceed the admit rates for all other domestic applicants in mid-March through the end of the admissions cycle. In the 2017 and 2019 cycles, there are points in June where the admissions rate for single-race African Americans are as close to the domestic non-African American admit rate as they can possibly be given the size of the admitted class and the number of applicants in each group. This analysis further supports the conclusion that Harvard has imposed a floor for African-American admit rates for at least the admissions cycles for the Classes of 2017 through 2019.

[39] Examples of one-pagers can be found at HARV00001884, HARV00004223, HARV00004221.

3.2 Waitlist, Admission, and Rejection Rates by Race/Ethnicity

In this section I examine the patterns of admission for the baseline and expanded datasets.[40] *The analysis indicates that Asian-American applicants have the lowest admit rates of the four major race/ethnic groups.*

Returning to the individual data produced by Harvard, I first consider the various paths to rejection or admission by race/ethnicity for the four most common groups (white, African American, Hispanic, and Asian American). The first panel of Table 2.1 gives the results for the baseline dataset. The first column of Table 2.1 gives the share of each racial/ethnic group that was rejected outright during the regular admissions process.

Table 2.1 Admission Decisions by Race/Ethnicity
Baseline & Expanded Datasets

	Admission Outcome			
Race/Ethnicity	Rejected	Waitlist Rejected	Admit	Observations
Panel 1: Baseline Dataset				
White	85.0	10.8	4.2	52,548
African American	88.6	5.0	6.5*	14,344
Hispanic	87.4	7.4	5.3*	16,601
Asian American	84.8	11.3	4.0	36,813
Total	85.7	9.8	4.5	130,208
Panel 2: Expanded Dataset				
White	80.0	12.0	8.0*	62,776
African American	86.5	4.9	8.6*	16,223
Hispanic	85.5	7.5	7.0*	18,517
Asian American	82.4	11.6	5.9	41,369
Total	82.1	10.5	7.3	150,701

* indicates statistically significant at the 5% level

Constructed using results from basicFreqs.do
Taken from Tables 1 and 2

The second and third columns show the share of each racial/ethnic group that were wait-listed but eventually rejected and admitted, respectively. Being waitlisted, but eventually rejected, is indicative of high qualifications and being close to the margin of being admitted. Asian-American applicants were more likely than any of the

[40] These datasets are described above in Section 2.3.3.

other racial groups to be waitlisted and then rejected. Yet, their probability of being admitted was lower than that of any of the other groups, by a range of 0.2 to 2.5 percentage points. These differences are quite large given that the Asian-American admit rate is approximately 4%.

The second panel of Table 2.1 shows results for the expanded dataset that includes athletes, legacies, and early admission applicants. White applicants in this dataset have a slightly higher probability of being waitlist rejects, 0.4 percentage points higher than Asian Americans. But whites also have an admit rate of 8% which is 2.1 percentage points higher than the Asian admit rate of 5.9%. The Asian-American admit rate is again the lowest of the four groups, with the gap ranging from 1.1 to 2.7 percentage points.

The Asian-American admit rate is lower than the admit rates for all other racial groups, not only in the aggregate over the six-year period (as shown in Table 1.1) but for each of the six years for the expanded dataset and for five of the six years in the baseline dataset. Tables B.2.1 and B.2.2 repeat Table 1.1 but are broken down year by year (for both the baseline and expanded datasets). The Asian-American admit rate was 0.2 percentage points above the white admit rate in the baseline dataset for the Class of 2019. As I will show later in the report, these raw admit rates understate the penalties Asian-Americans face because they do not take into account how strong the Asian-American applicant pool is relative to the other racial/ethnic groups.

These differences would be suggestive of racial penalties and preferences, even if one assumed that all the applicants in Harvard's pool of candidates were equally qualified. I therefore turn to consider the relative strength of the Asian-American applicants among the various criteria Harvard employs in its admissions process.

3.3 Correlates of Admission: Objective Measures

In this section, I show that Asian-American applicants are stronger on almost all academic measures than those of other races/ethnicities, so much so that Asian-American ***rejects*** *are stronger on some academic measures than African-American* ***admits****. Asian Americans do have the smallest share of applicants who are legacies*

or athletes, but these factors do not explain the disparities in Asian-American admissions.

3.3.1 Academic Measures

Tables B.3.1 (baseline dataset) and B.3.2 (expanded dataset) show characteristics of the applicants by race/ethnicity for both rejects, admits, and applicants. For the sake of exposition, I show a subset of the results for the baseline dataset in Table 3.1.

Table 3.1: Application summary statistics by race, baseline dataset

	White			African American			Hispanic			Asian American		
	Reject	Admit	Total	Reject	Admit	Total	Reject	Admit	Total	Reject	Admit	Total
Admitted	0.00	100.00	4.19	0.00	100.00	6.46	0.00	100.00	5.26	0.00	100.00	3.95
Disadvantaged	6.02	15.54	6.42	29.82	30.78	29.88	23.93	38.83	24.71	10.64	25.15	11.21
SAT1 math (z-score)	0.11	0.55	0.13	-1.18	0.11	-1.10	-0.71	0.26	-0.65	0.40	0.75	0.42
	(0.82)	(0.52)	(0.81)	(1.07)	(0.68)	(1.10)	(1.04)	(0.65)	(1.05)	(0.74)	(0.39)	(0.74)
SAT1 verbal (z-score)	0.30	0.72	0.32	-0.78	0.41	-0.71	-0.47	0.41	-0.42	0.29	0.69	0.30
	(0.76)	(0.43)	(0.76)	(1.07)	(0.56)	(1.08)	(1.05)	(0.60)	(1.05)	(0.81)	(0.45)	(0.80)
SAT2 avg (z-score)	-0.01	0.57	0.02	-1.25	0.13	-1.13	-0.62	0.40	-0.55	0.31	0.78	0.33
	(0.86)	(0.50)	(0.85)	(1.13)	(0.62)	(1.17)	(1.04)	(0.54)	(1.04)	(0.83)	(0.41)	(0.82)
High school GPA (z-score)	0.16	0.50	0.17	-0.52	0.33	-0.47	-0.08	0.44	-0.06	0.20	0.51	0.21
	(0.86)	(0.52)	(0.85)	(1.18)	(0.73)	(1.18)	(0.97)	(0.65)	(0.97)	(0.84)	(0.49)	(0.83)
Academic index (z-score)	0.15	0.75	0.17	-1.24	0.32	-1.14	-0.64	0.48	-0.58	0.37	0.88	0.39
	(0.80)	(0.39)	(0.79)	(1.12)	(0.51)	(1.16)	(1.01)	(0.46)	(1.02)	(0.79)	(0.34)	(0.78)
Number of AP tests taken	4.10	5.90	4.15	2.12	5.08	2.27	3.56	6.25	3.68	5.57	7.41	5.61
	(3.91)	(3.90)	(3.92)	(3.14)	(3.90)	(3.25)	(3.82)	(3.81)	(3.86)	(4.06)	(3.41)	(4.06)
Average score of AP tests	4.39	4.73	4.40	3.78	4.50	3.85	3.96	4.53	4.00	4.46	4.77	4.47
	(0.59)	(0.35)	(0.58)	(0.77)	(0.42)	(0.78)	(0.75)	(0.46)	(0.75)	(0.57)	(0.31)	(0.56)
N	50,347	2,201	52,548	13,418	926	14,344	15,728	873	16,601	35,358	1,455	36,813

* Constructed using results from sumStatsTablesPoolRej.do
*Subset of the results in Table B.3.1

As this table makes clear, Asian-American applicants are significantly stronger academically than the other groups.[41] They have the highest test scores and grades, take more AP exams, and score higher on those AP exams than any other group. The one exception is SAT verbal, where whites are slightly higher (0.02 standard deviations). To illustrate just how strong the Asian-American pool is, in the baseline dataset Asian-American applicants have academic indexes that are over 0.2 standard deviations higher than whites, almost one standard deviation higher than Hispanics, and over 1.5 standard deviations higher than African Americans. Indeed, Asian-American *rejects* have academic indexes that are higher than African-American *admits*.

[41] Table B.3.2 shows that this is also true in the expanded dataset.

3.3.1 Non-Academic Measures

Table 3.2 shows how other forms of advantage are related to admission for different races/ethnicities.[42]

Table 3.2: Admission/Rejection Shares by Non-Racial Preferences and Race/Ethnicity

	White			African American			Hispanic			Asian American		
	Reject	Admit	Total	Reject	Admit	Total	Reject	Admit	Total	Reject	Admit	Total
Admitted	0.00	100.00	8.00	0.00	100.00	8.63	0.00	100.00	6.98	0.00	100.00	5.94
Early action applicant	8.98	35.36	11.09	8.11	27.14	9.75	7.61	26.53	8.93	8.22	34.69	9.79
Athlete	0.19	16.27	1.48	0.14	8.86	0.89	0.04	4.18	0.33	0.03	4.11	0.28
Legacy	3.43	21.51	4.88	1.13	4.79	1.45	0.92	6.96	1.34	0.77	6.63	1.12
Faculty child	0.03	0.66	0.08	0.00	0.00	0.00	0.01	0.15	0.02	0.00	0.53	0.03
Staff child	0.12	0.94	0.19	0.05	0.14	0.06	0.05	0.46	0.08	0.11	1.06	0.16
Dean / Director's List	1.61	13.96	2.59	0.38	2.07	0.52	0.46	4.56	0.75	0.38	5.41	0.67
N	57,756	5,020	62,776	14,823	1,400	16,223	17,224	1,293	18,517	38,910	2,459	41,369

* Constructed using results from sumStatsTablesPoolRej.do
*Subset of the results from Table B.3.2

Asian-American applicants have the lowest share of athletes and legacies.[43] Over 21% of white admits in the expanded dataset are legacies and over 16% are athletes. For Asian Americans, 6.6% of admits are legacies and 4.1% are athletes.

Being coded by Harvard admissions officials as "disadvantaged" is also associated with higher admission rates. As previously noted, Harvard's admissions officers do not receive information about family income levels, but are asked to identify disadvantaged students during their review of the file based on information they receive about the high school, neighborhood, or other facts volunteered by the applicant. Asian-American applicants are less likely to be disadvantaged than African-American or Hispanic applicants, but are more likely to be disadvantaged than white applicants.[44]

[42] This table is a subset of the results in Table B.3.2.

[43] While the share of African-American applicants who are legacies is higher than that of Asian Americans, the share of African-American admits who are legacies is lower. As explained in Section 3.7, African Americans receive substantial racial preferences, but do not receive as much of a boost for legacy status or disadvantaged status.

[44] Tables B.3.1 and B.3.2 show that Asian-American admits are actually more likely to be first generation college students than African-American admits.

3.4 Correlates of Admissions: Harvard Ratings

In this section, I show racial/ethnic variation in Harvard's scoring of applicants along the various ratings assigned to each applicant. Asian-American applicants have higher academic and extracurricular ratings than white applicants, as well as higher overall ratings from alumni interviewers, but slightly lower ratings on school support measures and on the alumni personal rating. On all ratings except for the personal and athletic ratings, Asian-American applicants are stronger than African-Americans and Hispanics. Harvard's personal rating, however, is skewed heavily against Asian-American applicants. Given the same overall rating, Asian-American applicants have significantly lower probabilities of admission than the other groups, which suggests a penalty against Asian Americans in the selection of applicants (even assuming no penalties in the scoring of the various ratings).

The characteristics listed in Table 3.1 are primarily academic measures, so it is theoretically possible that Asian Americans are weaker on other dimensions. Table 4.1 shows the distribution of the components ratings that Harvard's admissions officers and alumni assign to the candidates during the evaluation process for the baseline dataset.[45] These ratings are given on a five-point scale, with lower numbers associated with better ratings. For the purposes of showing the patterns in the data, I aggregate the possible ratings into three categories for each rating measure: those with a rating worse than a 3-, those who were given a 3-, 3, or 3+, and those who were given a score better than a 3+ (any kind of 2 or 1).[46] For each racial/ethnic group, I show the fraction of applicants who were given a particular score, doing this for rejects, admits, and the total applicant pool.

[45] Table B.4.1 provides the same information for the expanded dataset.

[46] Due to limitations in the data produced by Harvard, pluses and minuses for these ratings are available for 2019 only.

Table 4.1: Admission/Rejection Shares by Application Rating and Race/Ethnicity

	White			African American			Hispanic			Asian American		
	Reject	Admit	Total	Reject	Admit	Total	Reject	Admit	Total	Reject	Admit	Total
Academic rating												
<3-	10.52	0.00	10.08	55.41	0.11	51.84	38.33	0.00	36.31	8.74	0.00	8.39
=3-, 3, or 3+	46.66	12.09	45.21	39.57	41.68	39.71	48.46	37.92	47.91	34.09	7.08	33.02
>3+	42.82	87.91	44.71	5.02	58.21	8.45	13.21	62.08	15.78	57.18	92.92	58.59
Extracurricular rating												
<3-	3.79	0.77	3.66	7.93	0.87	7.48	6.02	1.15	5.76	2.11	0.14	2.03
=3-, 3, or 3+	74.53	25.87	72.49	79.57	48.05	77.53	79.90	41.35	77.87	73.02	23.04	71.04
>3+	21.68	73.36	23.85	12.50	51.08	14.99	14.08	57.50	16.37	24.87	76.82	26.93
Athletic rating												
<3-	33.76	33.04	33.73	43.94	35.83	43.41	43.45	41.61	43.36	47.01	49.26	47.10
=3-, 3, or 3+	54.04	46.23	53.72	49.82	50.28	49.85	49.57	42.91	49.22	48.34	43.64	48.16
>3+	12.20	20.73	12.55	6.25	13.89	6.74	6.98	15.48	7.42	4.64	7.10	4.74
Personal rating												
<3-	0.45	0.00	0.44	0.51	0.00	0.48	0.53	0.00	0.50	0.50	0.00	0.48
=3-, 3, or 3+	81.77	15.90	79.01	85.22	25.49	81.37	84.73	21.76	81.42	85.10	25.84	82.76
>3+	17.78	84.10	20.56	14.26	74.51	18.15	14.74	78.24	18.08	14.40	74.16	16.76
Teacher 1 rating												
<3-	0.59	0.00	0.57	1.16	0.00	1.07	0.89	0.00	0.84	0.53	0.00	0.51
=3-, 3, or 3+	70.64	22.44	68.56	83.62	39.74	80.48	78.75	37.23	76.38	70.81	25.15	68.96
>3+	28.77	77.56	30.87	15.22	60.26	18.44	20.36	62.77	22.78	28.66	74.85	30.53
Teacher 2 rating												
<3-	0.49	0.00	0.47	0.80	0.00	0.73	0.87	0.00	0.81	0.53	0.07	0.51
=3-, 3, or 3+	69.46	22.07	67.10	82.48	40.67	78.77	77.69	31.94	74.60	70.45	24.35	68.38
>3+	30.05	77.93	32.43	16.72	59.33	20.50	21.44	68.06	24.58	29.02	75.58	31.11
School counselor rating												
<3-	0.65	0.00	0.62	2.05	0.00	1.90	1.33	0.00	1.25	0.67	0.00	0.65
=3-, 3, or 3+	75.56	23.37	73.27	86.51	42.70	83.37	83.51	41.44	81.11	76.29	27.80	74.30
>3+	23.80	76.63	26.10	11.44	57.30	14.73	15.16	58.56	17.63	23.04	72.20	25.06
Alumni Personal rating												
<3-	7.55	0.37	7.17	10.77	0.99	9.93	10.26	0.23	9.53	8.59	0.21	8.18
=3-, 3, or 3+	31.64	5.83	30.28	35.75	8.24	33.39	35.80	6.28	33.65	31.97	6.50	30.73
>3+	60.81	93.80	62.55	53.48	90.77	56.68	53.93	93.49	56.82	59.44	93.29	61.09
Alumni Overall rating												
<3-	18.75	0.93	17.80	41.51	2.31	38.06	34.41	1.86	31.97	17.42	0.42	16.58
=3-, 3, or 3+	37.60	10.00	36.13	35.22	21.81	34.04	36.95	17.00	35.46	35.02	7.84	33.68
>3+	43.65	89.07	46.07	23.27	75.88	27.90	28.64	81.14	32.56	47.56	91.74	49.74
N	50,347	2,201	52,548	13,418	926	14,344	15,728	873	16,601	35,358	1,455	36,813

* Constructed using results from sumStatsSubRatTablesPoolRej.do

For each rating measure, more highly rated applicants are more likely to be admitted. This can be seen because the fraction of admits assigned to the lowest category (<3-) in each racial/ethnic group is almost always smaller than the fraction of total applicants assigned to the lowest category, while the fraction of admits assigned to the highest category (>3+) are always higher than the fraction of total applicants assigned to the highest category. For some of the rating categories in the baseline dataset, the probabilities are incredibly small—if not zero—if the applicant is rated in the lowest category. The share of admits is 0.1% or less for those who are in the lowest category for the academic, personal, either teacher rating, or the counselor rating.

Consistent with the objective measures in both the baseline and expanded datasets, Asian-American applicants rank higher than any other group based on their academic rating. For example, in the baseline dataset, 58.6% of Asian-American applicants are in the highest category (>3+), compared with 44.7% of whites, 14.7% of Hispanics, and 7.3% of African Americans. Almost 93% of Asian-American admits

were in the highest academic rating, compared to 88% of whites, 62% of Hispanics, and 58% of African Americans.

Asian-American applicants are substantially stronger in other dimensions as well. Compared to white applicants, Asian-American applicants have better extracurricular ratings and overall alumni ratings, similar teacher 1 ratings, but slightly lower ratings than whites on counselor, teacher 2, and alumni personal ratings. Asian-American applicants are stronger than African-American and Hispanic applicants on all these dimensions except two: the athletic and personal ratings). As shown in Section 2.4., the athletic rating is relatively unimportant.

For Harvard's personal rating, however, the difference is more striking and consequential. Asian-American applicants have the lowest share of applicants receiving 2- or better on the personal rating. These scores diverge significantly from the personal rating scores given by alumni interviewers, where Asian-American applicants fared better than African-American and Hispanic applicants and only slightly worse than white applicants. They also are inconsistent with testimony from Harvard's own admissions personnel, who firmly rejected the idea that Asian-American applicants were somehow lacking in personal qualities compared to other applicants.[47]

It is worth pausing to note that the opportunity for racial penalties and preferences is least present in academic and extracurricular ratings for two reasons. First, both are easily measured. For the academic rating, Harvard's files contain information on the test scores of the students, their grades, number of AP exams taken and the scores on these AP exams, etc. For the extracurricular rating, lists of activities are included that specify the type of activity, the years the student participated in that activity, and the number of hours per week devoted to the activity. Second, they are specific, reflecting how an applicant scored on a particular set of tasks.

This is in contrast to the personal rating, which is difficult to measure directly, and the various ratings that reflect agglomerations of another individual's rating of a candidate along many dimensions (*e.g.*, the counselor and teacher ratings, as well as

[47] *See, e.g.*, Fitzsimmons Depo. at 347:10-348:2; Donahue Depo. at 165:17-167:12.

the overall ratings of the reader and the alumni interviewer). Harvard's Reader Guidelines illustrate why it would be easy to manipulate the personal rating. While the guidelines provide detailed instructions for the various other ratings, for the personal rating, the guidelines list only the following: "1. Outstanding. 2. Very strong. 3. Generally positive. 4. Bland or somewhat negative or immature. 5. Questionable personal qualities. 6. Worrisome personal qualities."[48]

Harvard's OIR researchers in fact recognized racial differences in the assignment of personal ratings in 2013. Using data over ten years, they found that Harvard's admissions officers assigned substantially lower personal ratings to Asian-American applicants versus white applicants, especially when compared to the ratings assigned by teachers, counselors, and alumni interviewers.[49]

These component ratings all contribute to the separate overall rating Harvard assigns to each applicant.[50] Here, I am using the ratings assigned by the last reader of the applicant file. Unlike the component ratings, Harvard's data also provide more detailed overall ratings for all years that include any pluses and minuses. For the purposes of this descriptive analysis, I aggregate the overall ratings of the final reader into four groups: 3- or less, 3, 3+, all 2's, and 1.

Table 4.2 shows the share of each racial/ethic group that received a particular overall rating and, conditional on that rating, the probability of being admitted for the baseline and expanded dataset. Higher overall ratings are associated with higher probabilities of admission. Those who have an overall score of 3- or worse are almost always rejected: the admit rates for each group are below 0.03% in both the baseline and expanded datasets. In contrast, those who receive an overall rating of a 1 are always accepted (in both datasets).

[48] *See* HARV00000803-04.

[49] *See* HARV00065745.

[50] *See* McGrath Depo. at 159:2-5.

Table 4.2: Admission and population shares by race and overall rating, baseline dataset

	White		African American		Hispanic		Asian American	
	Admit	Pop.	Admit	Pop.	Admit	Pop.	Admit	Pop.
Score	Share	Share	Share	Share	Share	Share	Share	Share
Panel 1: Baseline Dataset								
<3	0.02	43.74	0.02	66.57	0.01	58.74	0.01	39.50
3	1.93	39.61	5.97	21.24	4.06	28.65	1.70	43.07
3+	7.67	12.68	19.09	7.63	16.48	9.25	6.66	13.57
2	61.03	3.94	81.45	4.51	75.99	3.34	59.42	3.81
1	100.00	0.04	100.00	0.04	100.00	0.03	100.00	0.05
Panel 2: Expanded Dataset								
<3	0.22	40.40	0.14	64.19	0.06	56.55	0.01	37.37
3	4.42	39.72	7.74	21.75	4.82	29.03	2.31	42.65
3+	13.12	14.01	24.45	8.42	20.82	10.20	9.01	14.70
2	73.18	5.80	85.24	5.55	81.01	4.18	68.20	5.20
1	100.00	0.07	100.00	0.06	100.00	0.04	100.00	0.08

Within each of the other three groups (3, 3+, all 2's), African-American applicants have the highest admit rates followed by Hispanics, then whites, and finally Asian Americans. For those receiving an overall rating of 2+, 2, or 2-, African Americans have an admit rate that is 22 percentage points higher than the corresponding Asian-American admit rate (81.4% versus 59.4%) in the baseline dataset. And Hispanics with a 2 are admitted 76% of the time, 16.5 percentage points higher than the rate for Asian Americans in the baseline dataset. Comparing Asian Americans to whites also reveals gaps: admit rates for white applicants are 1 percentage point higher for those who receive a 3+, and 1.5 percentage points higher for those who receive a 2 (again, in the baseline dataset). These gaps are larger in the expanded dataset—4 and 5 percentage points, respectively.

While admit rates conditional on the overall rating are lower for Asian Americans, the share of each race/ethnicity in each rating category also suggests that preferences play a role in the rankings themselves. Among the four racial/ethnic groups, Asian-American applicants have the lowest fraction of applications in the bottom category (less than a 3 overall rating), for both datasets. To illustrate, the shares of each of the four major racial groups in the baseline dataset are as follows: Asian-American 39.50%; white 43.74%; Hispanic 58.74%; African-American 66.57%. Asian-American applicants also have the lowest share of the two bottom categories combined. This would tend to indicate that Asian-American applicants are stronger

overall than the other racial groups. However, the share of Asian-American applicants who receive a 2 or better on the overall rating is lower than that of both white and African-American applicants.

At the same time, the share of African-American applicants who receive a 2 or better is larger than any of the corresponding shares for any of the other racial groups. This occurs despite African-American applicants being over 60% more likely to be in the lowest ranked group than Asian-American applicants. In fact, the scoring for African-American applicants on Harvard's overall rating exhibits the opposite phenomenon exhibited by Asian-American applicants, as African-American applicants are disproportionately concentrated at the high and low ends of the rating scale.

3.5 Analysis of Harvard's Ratings by Academic Index Deciles

For many of the rating measures–and especially the personal rating and overall rating–Asian-American applicants appear to be ranked worse despite being the strongest on academic measures, whether it be Harvard's academic index (a combination of SAT scores, SAT subject tests, and high school grades) or Harvard's academic rating. Other than a penalty against Asian-American applicants, this could be explained if performance on academics is not especially correlated with the other non-race characteristics that Harvard values. In this section, I investigate the relationship between deciles of Harvard's academic index—an objective measure of the academic qualifications of the applicant—and Harvard's subjective ratings and eventual admission. The academic index deciles are defined based on academic indexes of the expanded dataset for those for whom the academic index is not missing.[51] This is done by sorting the applicants by their academic indexes and then taking the lowest 10%, the next lowest 10%, etc.

[51] I also exclude those who received the lowest score for converted grade point average (35) This is because converted GPAs range from 35 to 80, and there is a spike in the data at 35. It is apparent from the data that a 35 is often a result of grades being incorrectly converted.

3.5.1 How are Different Races/Ethnicities Distributed Across the Academic Index Deciles?

In this section, I show that Asian-American applicants are much stronger on the academic index than the other racial/ethnic groups. While Asian Americans are only 28% of the applicant pool in the baseline dataset, over half those in the top academic index decile are Asian American.

Table 5.1 shows the number and fraction of each of the four major racial/ethnic groups in each decile of the academic index for the baseline dataset. Results for the expanded dataset, both for this table and for the other tables in this section for racial/ethnic comparisons, are given in Tables B.5.1 through B.5.6; the patterns are the same across the two datasets.

Table 5.1: Number and Share of Applicants by Race/Ethnicity and Academic Index Decile, Baseline Dataset

	Number of Applicants in Each Decile					Share of Applicants in each Decile				
Academic Index Decile	White	African American	Hispanic	Asian American	Total	White	African American	Hispanic	Asian American	Total
1	2,612	5,550	3,392	1,440	13,697	4.98	38.85	20.47	3.92	10.55
2	3,974	3,252	3,400	1,877	13,287	7.58	22.76	20.52	5.11	10.23
3	5,774	2,171	2,841	2,622	14,447	11.01	15.2	17.15	7.14	11.12
4	5,411	1,075	1,870	2,629	11,844	10.32	7.52	11.29	7.16	9.12
5	6,351	780	1,539	3,293	13,023	12.11	5.46	9.29	8.97	10.03
6	6,604	548	1,180	3,966	13,390	12.6	3.84	7.12	10.8	10.31
7	6,390	383	844	4,121	12,787	12.19	2.68	5.09	11.23	9.85
8	5,842	270	724	4,802	12,795	11.14	1.89	4.37	13.08	9.85
9	5,110	167	458	5,818	12,673	9.75	1.17	2.76	15.85	9.76
10	4,355	91	321	6,140	11,918	8.31	0.64	1.94	16.73	9.18
Total	52,423	14,287	16,569	36,708	129,861					

The first row of Table 5.1 gives the number and fraction of each racial group in the bottom decile of the academic index. Less than 4% of Asian Americans are in the bottom decile. And, despite the share of Asian-American applicants being over 28%, less than 11% of the bottom decile is Asian American. In contrast, 38% of African Americans are in the bottom decile and over 60% are in the bottom two deciles. African Americans constitute roughly 11% of the baseline dataset, but the share of the bottom decile that is African American is over 40%. In fact, the number of

African Americans in the bottom decile is significantly higher than the number of Asian-American and white applicants combined in that same decile.[52]

Moving down the rows in Table 5.1 shows the fraction of African Americans and Hispanics in each decile generally falling with the fraction of Asian American rising. Almost 17% of Asian Americans in the baseline dataset are in the top decile—more than double the share of whites in the top decile (8.3%) and 26 times the share of African Americans in the top decile (0.6%). In fact, Asian-American applicants represent *more than half* of those in the top decile.[53] In contrast, African-American applicants represent less than 1% and Hispanic applicants represent less than 3% of those in the top decile.

3.5.2 How Do Admission Rates by Race/Ethnicity Vary Across the Academic Index Deciles?

In this section, I show that higher academic index deciles are associated with higher admit rate. I also show that, notwithstanding that academic indexes are highly correlated with admission, there are massive disparities in the admit rates of different racial groups within the same academic index deciles. Within each decile, Asian-American admit rates lag behind the admit rates for other racial groups. At least for applicants in the top half of academic indexes, Asian-American admit rates in any decile are roughly equivalent to white admit rates for one decile lower. Similarly, Asian-American applicants are admitted a rate similar to Hispanics three deciles lower and to African Americans five deciles lower. The share of admits who

[52] [redacted]

[53] Tables B.5.7 and B.5.8 report results by year. Asian Americans represent over half of those in the top decile in every year but one in the baseline dataset: 2017. But even in that year they are vastly over-represented compared to their share of the applicant pool.

were Asian American would be over 50% had admissions decisions been made on the academic index alone.

That Asian-American applicants are substantially over-represented in the upper deciles of the academic index matters only if the academic index is related to admission. Table 5.2 shows that this is the case: for every racial/ethnic group moving to a higher decile is always associated with a higher probability of admission with only one exception.[54] Virtually no one is admitted from the bottom decile in the baseline dataset. And in the second decile the admit rates for each racial/ethnic group are all below 1%.

Table 5.2: Admit Rates by Race/Ethnicity and Academic Index Decile, Baseline Dataset

Academic Index Decile	White	African American	Hispanic	Asian American	Total
1	0.00%	0.04%	0.00%	0.00%	0.01%
2	0.30%	0.80%	0.18%	0.21%	0.39%
3	0.48%	4.51%	1.83%	0.53%	1.45%
4	1.66%	10.60%	4.76%	0.84%	2.83%
5	2.25%	19.62%	7.80%	1.49%	3.91%
6	3.54%	26.28%	11.19%	2.42%	4.79%
7	3.91%	37.60%	15.76%	3.35%	5.62%
8	6.42%	41.48%	20.30%	4.00%	6.85%
9	9.32%	50.90%	22.27%	6.26%	8.77%
10	13.59%	49.45%	28.04%	9.36%	11.70%
Average	4.20%	6.46%	5.26%	3.96%	4.50%

Asian-American applicants in the baseline dataset do not clear 1% admit rates until the fifth academic decile (where the admit rate is 1.5%). The Asian-American admit rate peaks in the tenth (and highest) decile at 9.3%. They are uniformly lower than the admit rates for white applicants. Indeed, Asian Americans in the fifth decile have similar admit rates to whites in the fourth decile. This pattern continues for each academic index decile including the 10th decile: Asian-American admit rates are most similar to white admit rates one decile lower.

Starker differences are seen when comparing Asian-American admit rates to African-American and Hispanic admit rates. African American admit rates rise to

[54] African Americans in the top decile had slightly lower admission rates than those in the next decile down. However, there are very few African-American applicants in the top decile (aggregated across all six years, there are only 91).

4.5% in the third decile, and they reach 19.6% in the fifth decile—13 times higher than the Asian-American admit rate in the same decile. They continue to rise, peaking in the ninth decile where the admission rate is over 50%.[55] Moreover, between the third and ninth deciles, the admit rates for Hispanic applicants are always at least 3.4 times higher than Asian-American admit rates; in the same span of deciles, the African-American admit rate is always at least 8 times higher than the rate Asian-American admit rate.

Hispanic applicants have lower admission rates than African-American applicants but still well above whites and Asian Americans. Hispanics in the third decile had admission rates of 1.8% and continue to rise with each decile, peaking at 28%. Between the third and ninth deciles, the admit rate for Hispanics is always at least 3.4 times higher than the admit rate for Asian Americans.

One way of illustrating the effect these disparities have on the racial composition of the class is to examine what the shares of the different groups would be if a random lottery was conducted conditional on being in different academic index deciles. I conducted this analysis in Table 5.3.

Table 5.3: Share of admits of each race/ethnicity if equally drawn from different academic index deciles

	Whites	African American	Hispanic	Asian American
Actual Share of Admitted Class	37.61	15.81	14.90	24.86
Randomly sampling from:				
Top 9 deciles	42.88	7.52	11.34	30.36
Top 8 deciles	44.56	5.33	9.50	32.46
Top 7 deciles	45.30	3.75	7.84	34.79
Top 6 deciles	45.25	2.92	6.61	36.74
Top 5 deciles	44.52	2.30	5.55	39.09
Top 4 deciles	43.24	1.82	4.68	41.62
Top 3 deciles	40.94	1.41	4.02	44.83
Top 2 deciles	38.49	1.05	3.17	48.63
Top decile	36.54	0.76	2.69	51.52

[55] This illustrates how highly correlated the academic index is with admission.

Randomly drawing from all those in the top nine academic index deciles would increase the share of Asian-American admits from 24.9% to 30.4% in the baseline dataset, a more than 22% increase. Randomly drawing from the top eight academic index deciles increases the share even more, to 32.5%. Restricting admissions to higher and higher academic index deciles results in a greater and greater share of the admitted class that is Asian American. Randomly drawing from those in the top academic index decile would results in over 50% of the admitted class being Asian American, compared to their current share of approximately 22%.[56]

Over the six-year period, this would result in an increase of 1563 Asian-American admits in the baseline dataset (0.5152 times 5658 total admits minus 1455 admitted Asian-American applicants). For the expanded dataset, the increase would be 3113 Asian-American admits (0.5034 times 11068 total admits minus 2459 admitted Asian-American applicants). Indeed, Asian Americans are so over-represented in the top academic index decile that the share of each of the other three major races/ethnicities *including whites* would fall if admissions were exclusively from the top academic index decile.

But even if the number of admits from all other groups besides whites and Asian Americans were held fixed and admits for whites and Asian Americans were randomly drawn from the top decile, the share of the class that was Asian American would still substantially increase, resulting in an Asian-American admitted share of 36.5%, a 47% increase.

These results are consistent with Harvard's OIR findings in 2013. For example, the report at HARV00031720 shows that, averaging over the period 2007 to 2016, the share of the admitted class that was Asian American was 18.7%. But had only the academic index and academic rating been used to evaluate the applicants, Asian

[56] If the number of admits from all other groups besides whites and Asian Americans were held fixed and admits for whites and Asian Americans were randomly drawn from the top decile, the share of the class that was Asian-American would still substantially increase, resulting in an admitted share of 36.5%, a 47% increase.

Americans would have been 43% of the admitted class.[57] Their admit rate would have been 17%. (The actual admit rate for Asian Americans over this period was 7.6%.)[58]

3.5.3 How Do the Rating Components Vary by Race/Ethnicity Across the Academic Index Deciles?

In this section, I examine how the probability of receiving a 2 or better on each of Harvard's component ratings varies by academic index decile and race/ethnicity. For all of Harvard's component ratings, the probability of receiving a 2 or better rises substantially across academic index deciles for every racial/ethnic group, indicating a positive relationship between Harvard's component ratings and the academic index. For the academic and extracurricular rating, the share with a 2 or better is similar across racial/ethnic groups conditional on being in the same academic index decile. But for the more subjective measures–especially the personal rating–Asian Americans in the same academic index deciles are less likely to receive a 2 or better than the other races/ethnicities.

While academic indexes are positively correlated with admission for all racial/ethnic groups, they are also positively related to the component ratings Harvard assigns to applicants. The first and second panels of Table 5.4 show the share of each racial/ethnic group that receives a 2 or better on Harvard's academic and extracurricular ratings by decile of the academic index.

[57] This number is less than 50% because the share of applicants who were Asian American was smaller in the period of analysis covered by OIR. In both my analysis and OIR's analysis, the number of Asian-American admits would more than double.

[58] HARV00031721

Table 5.4: Share Receiving a Two or Better on the Academic and Extracurricular Ratings by Race/Ethnicity and Academic Index Decile, Baseline Dataset

	Academic Rating					Extracurricular Rating				
Academic Index Decile	White	African American	Hispanic	Asian American	Total	White	African American	Hispanic	Asian American	Total
1	0.11%	0.02%	0.03%	0.00%	0.05%	11.49%	9.17%	9.23%	13.06%	10.18%
2	0.45%	0.06%	0.03%	0.59%	0.26%	16.00%	13.38%	12.24%	15.93%	14.42%
3	1.89%	1.01%	0.60%	1.30%	1.40%	20.18%	17.96%	15.66%	18.23%	18.65%
4	8.76%	5.58%	3.90%	7.72%	7.46%	21.79%	22.70%	18.34%	21.57%	21.38%
5	23.10%	19.10%	14.29%	22.90%	21.98%	23.65%	20.51%	20.01%	22.14%	22.86%
6	48.53%	46.90%	40.17%	48.59%	47.86%	24.08%	25.91%	21.95%	24.84%	24.50%
7	68.31%	67.89%	63.74%	70.83%	69.10%	26.24%	25.59%	26.78%	27.88%	26.89%
8	82.54%	78.15%	78.87%	85.80%	83.62%	26.40%	26.67%	23.07%	28.65%	27.03%
9	93.27%	93.41%	91.05%	94.91%	94.07%	29.33%	30.54%	29.91%	33.57%	31.54%
10	97.04%	95.60%	94.70%	97.96%	97.52%	32.22%	38.46%	28.97%	35.28%	33.95%
Average	44.74%	8.43%	15.79%	58.58%	41.18%	23.83%	14.95%	16.34%	26.94%	22.90%

Not surprisingly, moving up academic index deciles substantially increases the probability of receiving a 2 or better on the academic rating for each racial group: those in the bottom two deciles have a 2 or better on Harvard's academic rating less than 1% of the time with the corresponding number for the top decile at over 97%. But what is notable is the similarity of the probability of a 2 or better across races/ethnicities in each academic index decile. It confirms that Asian-American applicants are at least as strong on any academic factors in Harvard's academic rating that are not otherwise captured by the academic index (which reflects high school grades and test scores).

More striking are the results on extracurriculars. While the rise in the probability of receiving a 2 or better is smaller with increases in the academic decile, it is nonetheless generally the case that higher academic deciles are associated with higher extracurricular ratings. This is always the case for whites and Asian Americans. For the dataset as a whole, the probability of receiving a 2 or better increases from 10% to 34% moving from the lowest decile to the highest decile. Further, within a particular academic decile the shares receiving a 2 or better are generally quite similar across racial/ethnic groups. And, to the extent that they are different in the top five deciles, Asian-American applicants almost always have the highest probabilities of receiving a 2 or better.

The results in Table 5.4 show that on average those with higher academic indexes also have higher extracurricular activities. The results further illustrate that the

strong academic performance of Asian-American applicants is not an anomaly but that they are strong in other areas too. Their performance in extracurriculars is just as strong or stronger than their same academic decile peers of other races. If Asian-American applicants were disproportionately strong only on academics I would have expected that, within an academic decile, their extracurricular involvement would be worse. This is not the case.

Table 5.5 reports the share who receive a 2 or better on the first teacher rating, the second teacher rating, and the counselor rating by academic decile and race/ethnicity.

Table 5.5: Share Receiving a Two or Better on School Support Measures by Race/Ethnicity and Academic Index Decile, Baseline Dataset

	Teacher 1					Teacher 2					Counselor				
Academic Index Decile	White	African American	Hispanic	Asian American	Total	White	African American	Hispanic	Asian American	Total	White	African American	Hispanic	Asian American	Total
1	7.73%	7.87%	8.90%	7.92%	8.16%	6.20%	5.60%	6.46%	6.53%	6.09%	4.79%	4.97%	5.84%	5.90%	5.32%
2	13.11%	13.81%	13.62%	14.44%	13.49%	10.12%	11.50%	10.97%	11.72%	10.93%	8.73%	10.64%	10.21%	9.43%	9.75%
3	19.12%	18.93%	19.64%	16.67%	18.72%	15.66%	16.40%	17.35%	14.11%	15.87%	14.51%	15.98%	15.14%	12.32%	14.40%
4	23.21%	23.72%	22.94%	20.96%	22.71%	20.61%	22.33%	20.32%	17.61%	20.09%	18.11%	19.26%	16.90%	14.68%	17.29%
5	26.61%	28.72%	29.04%	22.56%	25.95%	23.70%	29.74%	25.08%	20.04%	23.34%	21.89%	23.33%	20.01%	17.28%	20.56%
6	31.04%	35.22%	31.02%	25.87%	29.62%	26.50%	35.77%	28.05%	23.98%	26.40%	24.71%	31.20%	24.49%	21.81%	24.06%
7	34.46%	40.47%	36.26%	29.97%	33.15%	30.67%	35.51%	32.11%	25.48%	28.98%	28.61%	35.51%	30.33%	24.31%	27.36%
8	39.39%	46.30%	36.60%	32.51%	36.23%	36.10%	40.37%	36.05%	29.13%	33.05%	34.08%	38.15%	32.60%	26.76%	30.72%
9	44.44%	46.71%	42.36%	38.91%	41.45%	40.88%	40.12%	37.34%	35.46%	37.90%	38.73%	41.92%	33.62%	33.10%	35.63%
10	49.62%	57.14%	48.60%	45.20%	46.85%	47.07%	49.45%	51.40%	40.72%	43.50%	43.97%	48.35%	43.30%	36.37%	39.39%
Average	30.06%	16.65%	21.04%	29.90%	27.23%	26.79%	14.46%	18.41%	26.62%	24.22%	24.85%	13.17%	16.13%	24.11%	22.09%

Similar to the academic rating and the extracurricular rating, higher academic deciles are associated with higher probabilities of receiving a two on each of the school support measures, and this holds for each racial/ethnic group. This suggests that these ratings should tend to behave similarly to the academic and extracurricular ratings. However, for academic index deciles starting with the fourth decile and going upward, Asian-American applicants have lower probabilities of receiving a 2 or better than all other racial groups. In particular, Asian-American applicants have similar probabilities of receiving a two to whites and Hispanics one decile below and to African Americans two deciles below (across all three ratings). This is consistent with significant preferences for African Americans and a penalty against Asian Americans.

But where differences across racial groups stand out the most are on the personal ratings. Table 5.6 shows the share receiving a two or higher for Harvard's personal rating and the personal rating of the alumni interviewer by academic index decile and race/ethnicity. As with all of the other measures, better personal ratings are

generally seen for each race as one moves to higher academic index deciles. This is true for both the Harvard personal rating and the alumni personal rating.

Table 5.6: Share Receiving a Two or Better on the Personal Rating and Alumni Interview Personal Rating by Race/Ethnicity and Academic Index Decile, Baseline Dataset

	Personal					Alumni Personal				
Academic Index Decile	White	African American	Hispanic	Asian American	Total	White	African American	Hispanic	Asian American	Total
1	8.04%	9.53%	8.58%	7.99%	8.83%	25.77%	30.52%	26.21%	27.29%	27.84%
2	12.38%	15.31%	12.76%	12.73%	13.24%	32.71%	38.65%	32.44%	31.49%	33.94%
3	16.11%	22.39%	17.46%	13.23%	16.79%	39.38%	46.34%	37.70%	35.58%	39.50%
4	18.04%	28.00%	20.16%	14.42%	18.56%	43.69%	54.42%	42.83%	39.29%	43.73%
5	20.03%	32.05%	24.95%	14.64%	19.93%	47.06%	58.97%	48.73%	43.00%	47.02%
6	21.62%	32.66%	26.53%	16.26%	20.73%	50.61%	61.31%	52.54%	46.19%	50.04%
7	21.83%	39.16%	29.74%	17.52%	21.26%	52.91%	68.93%	56.28%	50.50%	52.80%
8	24.99%	37.41%	30.25%	16.76%	22.01%	57.19%	67.78%	61.33%	52.31%	55.54%
9	26.99%	37.72%	27.95%	19.89%	23.50%	61.02%	68.86%	60.26%	55.98%	58.75%
10	28.52%	42.86%	32.71%	20.57%	23.89%	63.63%	72.53%	69.78%	61.48%	62.67%
Average	20.57%	18.17%	18.09%	16.76%	18.73%	48.74%	41.76%	40.15%	48.55%	46.82%

*Note that those who do not have an alumni interview are coded as not having received a 2 or better on the alumni overall rating

Looking at the first panel of Table 5.6, it is easy to see that higher academic index deciles are associated with better personal ratings given by Harvard's admissions office (for all racial groups). For example, almost 43% of African Americans in the top academic index decile received a 2 or better on Harvard's personal rating compared to less than 10% of African Americans in the bottom decile. Asian-American applicants, however, are ranked substantially lower than the other groups in the same academic decile.[59] In other words, despite the fact that (i) for each racial group, higher academic index deciles are associated with better personal ratings; and (ii) Asian-American applicants have the highest academic indexes, Asian-American applicants have the lowest shares receiving a 2 or better on Harvard's personal rating of the four main racial groups.

The disparities in these shares are quite large. For Asian-American applicants, the top decile is the only one where the share receiving a 2 or better exceeds 20%. Within that decile, Asian-American applicants are given a personal rating of 2 or better 21% of the time; this is half the rate of African Americans in the same decile,

[59] In every academic index decile, the African Americans have the highest share scoring a 2 or better on the personal rating, followed by Hispanics, then whites, then Asian Americans (except for the third decile where Asian Americans rank slightly higher than whites).

twelve percentage points less than Hispanics, and seven points less than whites. White and Hispanic applicants, on the other hand, receive a personal rating of 2 or better more than 20% of the time in *each of the top six deciles*. And for African-American applicants, their share is higher than 20% in the top eight deciles.

The personal ratings given by alumni interviewers stand in contrast to the personal ratings of Harvard readers. The second panel in Table 5.6 shows how the personal ratings given by alumni interviewers vary by race and academic index decile. Like Harvard's own personal rating, better alumni personal ratings are associated with higher academic indexes. Accordingly, the share receiving a 2 or better on the alumni personal rating increases with the academic index decile. But the treatment of Asian Americans in the scoring of the alumni personal rating is much different than Harvard's own scoring of Asian-American applicants on the personal rating. For Asian Americans, the alumni personal rating generally tracks the teacher and counselor ratings. Starting with the fourth decile, Asian-American applicants have shares similar to or slightly trailing white applicants; similar to Hispanics one decile below them; and similar to African-American applicants two to four deciles below them. While there is some racial disparity in the alumni personal rating, it is less than half of the disparity that exists in the Harvard personal rating. In sum, there is a stark divergence between the alumni personal ratings and the personal ratings assigned by Harvard's admissions office that is indicative of a penalty against Asian-American applicants in the scoring of the personal ratings.

3.5.4 How Do the Overall Ratings Vary Across the Academic Index Deciles?

In this section, I show that higher academic index deciles are strongly associated with better overall ratings by both Harvard readers and by alumni interviewers for each race/ethnicity. African Americans in the top academic index decile are almost 4.5 times as likely to receive a 2 or better by the final Harvard reader than Asian Americans. Despite having substantially higher academic indexes, Asian Americans as a whole are less likely than African Americans to receive a 2 or better on their overall rating from Harvard's reader, suggesting racial preferences affect the overall rating. In contrast, the alumni overall rating is more similar across races within an academic index decile. But because Asian Americans are more represented in the top

deciles, this translates into Asian Americans as a whole to be almost twice as likely to receive a 2 or better from the alumni than African Americans.

The shares of each racial group receiving an overall rating of the final reader and an overall rating of the alumni interviewer of a 2 or better by race/ethnicity and academic index decile are given in Table 5.7. For both of these ratings—as with all the previous ratings—higher academic index deciles are associated with greater shares for each race/ethnicity.

Table 5.7: Share Receving a Two or Better on Overall Rating and Alumni Interviewer Overall Rating by Race/Ethnicity and Academic Index Decile, Baseline Dataset

	Final Reader Overall Rating					Alumini Interviewer Overall Rating				
Academic Index Decile	White	African American	Hispanic	Asian American	Total	White	African American	Hispanic	Asian American	Total
1	0.00%	0.00%	0.00%	0.00%	0.00%	7.27%	7.15%	7.22%	6.81%	7.22%
2	0.13%	0.31%	0.03%	0.16%	0.15%	12.96%	14.85%	11.03%	11.88%	12.94%
3	0.24%	1.80%	0.60%	0.15%	0.55%	19.05%	23.08%	18.48%	17.01%	19.40%
4	0.63%	5.77%	1.71%	0.38%	1.28%	25.69%	32.84%	23.58%	22.75%	25.42%
5	1.31%	13.85%	3.83%	1.03%	2.37%	31.13%	41.79%	33.07%	28.18%	31.37%
6	2.56%	21.35%	7.63%	1.71%	3.52%	37.01%	50.00%	37.88%	35.07%	37.18%
7	3.69%	27.94%	11.49%	2.67%	4.62%	41.82%	54.83%	44.08%	41.32%	42.35%
8	6.86%	36.67%	14.09%	3.71%	6.48%	48.53%	58.52%	49.03%	45.65%	47.43%
9	10.06%	40.72%	17.03%	6.51%	8.87%	55.60%	59.28%	57.42%	52.82%	54.65%
10	14.58%	45.05%	25.55%	10.29%	12.62%	62.04%	65.93%	63.86%	60.81%	61.44%
Average	3.99%	4.56%	3.37%	3.86%	3.91%	35.61%	20.03%	22.55%	39.19%	33.36%

*Note that those who do not have an alumni interview are coded as not having received a 2 or better on the alumni overall rating

Consistent with the admit rates being highest for African Americans in the baseline dataset, African Americans have the highest share receiving a 2 or better for the final reader's overall rating. This occurs despite the high correlation of academic index decile and final reader rating for each race/ethnicity and African Americans being disproportionately at the bottom of the academic index distribution. This occurs because within each decile, African Americans are substantially more likely to be given a 2 or better on this rating. From the fourth decile to the eighth decile African Americans are at least ten times more likely to be given a two then an Asian American in the same academic index decile. At the tenth decile of the academic index 45% of African Americans are given a 2 or better compared to just 10% of Asian Americans. Hispanics too see much greater shares receiving twos or higher than Asian Americans in the same academic index decile. From the third decile on Hispanics are between 2.5 and 4.5 times more likely to receive a 2 or

better. From the third decile on the rating is consistent: within each decile African Americans have the highest share receiving a 2 or better, followed by Hispanics, then whites, and finally Asian Americans. Asian Americans receive overall ratings similar to whites that are one decile lower, consistent with the pattern seen in admissions.

While on average African Americans have the greatest share receiving a 2 or better on the overall rating of the final Admissions Office reader, the second panel of Table 5.7 shows that this is not true for the overall rating by the alumni interviewer. On average African Americans receive the lowest rating. This occurs despite African Americans having the highest share receiving a two or higher within each academic index decile after the second due to (i) higher academic indexes being associated with higher alumni overall ratings for all groups and (ii) African Americans being heavily skewed towards the bottom deciles of the academic index. Interestingly, with the exception of African Americans, the share receiving a 2 or better on the alumni overall rating is quite similar across races/ethnicities. For every decile, the lowest share receiving a 2 or better among Hispanics, whites, and Asian Americans is greater than the greatest share among these groups one decile lower. This mirrors what is seen for both academic and extracurricular ratings. Hence while Asian Americans had the lowest overall share with a 2 or better from the final reader, they had the greatest overall share for the alumni overall rating.

In sum, the patterns across race/ethnicity and academic index deciles suggest that race plays a key role in Harvard's personal and overall rating beyond what could be reasonably expected based on differences among unobservables. Correspondingly, admissions too show a strong racial component. Other ratings, such as the school support measures and the alumni personal rating suggest the possibility of race playing a role here as well, again to the detriment of Asian Americans and to the benefit of African Americans. Although it is possible that Asian Americans as a group could be slightly weaker on these dimensions, there is no evidence of this in the extracurricular ratings where Asian Americans were just as likely to be ranked highly as other races/ethnicities in the same academic index decile. And, it is important to note that Asian Americans are much stronger on the academic across

all racial/ethnic groups *including whites*, being more than *twice* as likely as having an academic index in the top decile than their white counterparts.

3.6 The Role of Race in Harvard's Ratings

In this section I show that, after controlling for a number of characteristics, there is a significant penalty against Asian-American applicants as compared to the other racial groups, including whites, and a significant preference given to African-American and Hispanic applicants in both the personal and overall ratings. These penalties and preferences are more pronounced at higher levels of the overall rating. This occurs despite the fact that Asian-American applicants are stronger on the observed characteristics that are associated with better ratings than all the other races/ethnicities.

Tables B.6.1 through B.6.6 in the appendix present a series of ordered logit estimates of the probability of receiving a particular rating on one of Harvard's components. For ease of tracking multiple variables, the ratings have been recoded so that higher values are associated with better ratings. Moving across the columns within a particular Harvard component (academic, for example) shows how the results change as more controls are added. Figure 6.1 shows what controls are used in each of the models. Since the patterns are quite similar across the two datasets, I focus my discussion on the baseline dataset.

Figure 6.1	
Model 1	Baseline: Race/ethnicity, female, disadvantaged, application waiver, applied for financial aid, first generation college student, mother's education indicators, father's education indicators, docket fixed effects, year indicators Expanded: baseline plus early decision, athlete, legacy, double legacy, faculty or staff child, Dean's/Director's list
Model 2	Model 1 plus SAT math*, SAT verbal*, SAT2 average,* missing SAT2 average times race/ethnicity, converted gpa*, academic index*, academic index squared times academic index greater than zero, academic index squared times academic index less than zero, flag for converted gpa=35 * indicates variable was z-scored
Model 3	Model 2 plus intended major indicators, female times intended major, female times race/ethnicity, race/ethnicity times disadvantaged
Model 4	Model 3 plus intended college board indicators for neighborhood and high school type, missing college board indicators times race/ethnicity
Model 5	Model 4 plus indicators for each academic, extracurricular, teacher 1, teacher 2, counselor, alumni personal, and alumni overall ratings, interactions with missing alumni overall rating and race/ethnicity, excluding the ranking that is the dependent variable
Model 6	Adds personal rating (not done when personal rating is the dependent variable)

Table B.6.1 shows estimates of the models for academic and extracurricular ratings. The coefficients on African American and Hispanic both begin large and negative with the coefficient on Asian American starting out large and positive. This means that African Americans were scored lower on these ratings and Asian Americans higher after controlling for differences in geography (through docket fixed effects) and other demographic measures. As controls are added, the coefficient on race/ethnicity generally moves towards zero. This is what would be expected if race played no role in the ratings. Namely, race was initially proxying for the large differences in academic preparation across racial/ethnic groups. As controls for academic preparation are added, race plays less of a role in the formation of the rankings (which, again, is what would be expected for these objective ratings).

Adding controls for Harvard's more subjective ratings, however, reverses this trend for Asian Americans. Namely, once these controls are added, the coefficient on

Asian American becomes positive and significant. This is consistent with penalties in these other rating measures against Asian Americans. The reverse holds true for African Americans in the extracurricular rating, with adding Harvard's ratings resulting in a negative and significant coefficient on African American. These estimates are consistent with preferences operating in part through Harvard's more subjective ratings but not their more objective ratings. Namely, the negative and significant coefficient for African American comes from the model trying to explain African Americans' extracurricular scores in light of their artificially high scores on other dimensions.

Estimates of the models for the school support measures are given in Table B.6.2. Here the coefficients on Asian American begin negative, though the coefficients are not always statistically significant and the magnitudes are small. As controls are added, the coefficients on Asian American remains negative but increases substantially in magnitude. For African Americans, the coefficients start out large and negative and then either move toward zero or become positive and significant. Similar to the patterns with academics and extracurriculars, and consistent with preferences for African Americans and penalties against Asian Americans in the subjective ratings, adding Harvard's ratings results in the coefficients on African American falling and the coefficients on Asian American rising.

Table B.6.3 shows results for the personal rating and the alumni personal rating. All three minority groups have negative coefficients in the base model for Harvard's personal rating, but the coefficient for Asian Americans is especially large. As controls are added, the coefficient on Asian American becomes even more negative while for African Americans and Hispanics the coefficient changes sign and becomes positive and statistically significant. The general patterns hold for the alumni personal rating but the magnitudes are muted and the Asian American coefficient begins less negative than that of African Americans and Hispanics.

Table B.6.4 shows results for the overall rating of the final reader and the alumni overall rating. While the base model for both show positive and significant coefficients for Asian American and negative and significant coefficients for African Americans and Hispanics, the patterns quickly diverge. Absent controls for Harvard

ratings, the coefficient on Asian American is small and not statistically different from zero in the alumni overall rating. In contrast, the coefficient for the overall rating of Harvard's final reader is large, negative, and statistically significant. Adding controls for Harvard's ratings results in a positive and significant coefficient for Asian Americans in the alumni overall rating but in Harvard's overall rating the coefficient on Asian American remains negative and significant. But particularly dramatic shifts are seen for Hispanics and especially African Americans in Harvard's overall rating. Here the coefficients start out large and negative but become very large and positive, flipping the racial/ethnic ratings.

The stark patterns for Harvard's overall and personal ratings and the contrast with the alumni personal and overall ratings suggests that there exists both a penalty against Asian-American applicants and a preference in favor of African-American applicants in the ratings themselves. Further evidence that the personal rating and overall rating are mechanisms through which Harvard implements racial penalties and preferences comes from examining how race interacts with female and disadvantaged status. For both the personal rating and the overall rating, the coefficient on female and African American is negative and significant as is the coefficient on disadvantaged and African American. This pattern does not occur for any of the other rating components. The result for females is consistent with the desire to at least partially balance gender within race.[60] The result for disadvantaged is consistent with African Americans receiving a preference for race only—not for disadvantaged status. In fact, while other races receive a large boost for being disadvantaged in both the overall rating and the personal rating, African Americans see *no* boost for being disadvantaged in the overall rating and a boost that is less than half that of other races on the personal rating.

To see how race affects the personal rating scores once controls are accounted for, Table 6.1 shows how the probability of receiving a 2 would change for each race/ethnicity if they were treated like each of the other races/ethnicities.

[60] Substantially more female than male African Americans apply for admission to Harvard. Indeed, over 60% of African Americans in the baseline dataset are female.

Table 6.1: Probability of Receiving a 2 or Better on Personal Rating for own race/ethnicity and counterfactual race/ethnicity, preferred model

Race/Ethnicity	Own Race	if White	if African American	if Hispanic	if Asian American
Panel 1: Baseline dataset					
White	0.205		0.272	0.230	0.171
African American	0.182	0.141		0.161	0.117
Hispanic	0.181	0.160	0.207		0.132
Asian American	0.168	0.202	0.266	0.227	
Panel 2: Expanded dataset					
White	0.229		0.302	0.254	0.192
African American	0.199	0.154		0.172	0.129
Hispanic	0.193	0.173	0.224		0.144
Asian American	0.181	0.216	0.284	0.241	

*created using ologitpersonal.do

Had Asian Americans been treated as whites, the probability of receiving a 2 or better on the personal rating would increase by over three percentage points, reflecting a 20% increase chance of receiving a 2 or better. And had Asian Americans been treated as African Americans, the probability of receiving a 2 or better would increase by approximately 10 percentage points, reflecting more than a 58% increased chance of receiving a 2 or better.[61]

Because of the richness of the overall rating, I can also test whether the race coefficients are more prevalent at different points in the rating distribution. In particular, it is possible to allow the threshold for receiving a 2 on the overall rating to be affected by race differently than the threshold for receiving a 3+.[62] To allow for this possibility, I estimate a model where the thresholds vary by race and year and

[61] Note that, to the extent that there are penalties against Asian Americans and preferences for African Americans in some of the other ratings variables (e.g. teacher and counselor ratings, alumni personal rating) and these measures are included in the analysis, I am *underestimating* the gains Asian Americans would have received from being treated like other races/ethnicities. This is because the model will attribute part of the low scores Asian Americans to receive to these ratings, making it seem like Asian Americans are weaker than they actually are.

[62] The previous ordered logit results assume that any advantage or penalty a particular applicant receives were the same at each threshold.

where the overall rating is collapsed into four categories: 3- or less, 3, 3+, and 2- or higher.[63]

Results are presented in Table B.6.9. The results show that the boost African-American applicants receive is significantly stronger for higher thresholds: 32% and 65% higher at the 3+ and 2 level, respectively, as compared to crossing the threshold for receiving a 3. The penalty against Asian-American applicants also increases at higher thresholds, more than doubling at both the 3+ and 2 level relative to the threshold of receiving a 3.

To get a sense for how large an effect these boosts and penalties have on admissions decisions, I examine how the probability of receiving different overall ratings would change if an applicant was treated as each of the four major racial groups. Results are reported in Table 6.2.

Table 6.2: Probability of receiving each overall rating for own race/ethnicity and counterfactual race/ethnicity, preferred model, baseline dataset

	Score	Own Race	if White	if African American	if Hispanic	if Asian American
White	<3	0.437		0.271	0.314	0.444
	3	0.392		0.353	0.406	0.399
	3+	0.129		0.210	0.188	0.121
	>3+	0.041		0.165	0.092	0.036
African American	<3	0.664	0.769		0.693	0.770
	3	0.209	0.178		0.217	0.181
	3+	0.082	0.042		0.067	0.040
	>3+	0.045	0.010		0.024	0.009
Hispanic	<3	0.588	0.684	0.551		0.687
	3	0.282	0.239	0.268		0.242
	3+	0.095	0.061	0.115		0.057
	>3+	0.035	0.015	0.066		0.014
Asian American	<3	0.395	0.390	0.235	0.273	
	3	0.427	0.418	0.351	0.414	
	3+	0.138	0.147	0.233	0.212	
	>3+	0.040	0.045	0.181	0.101	

*calculated using gologitComponentsExpIndices.do

[63] This is the same aggregation as used in Table 4.2 but where the 1's are aggregated with the 2's (as very few individuals receive a 1).

Had Asian-American applicants been treated like white applicants, their probability of receiving a 2 or better on Harvard's overall rating would increase by from 4% to 4.5% and represents more than a 12% increase.

The impact would be even greater if Asian-American applicants were treated like African-American or Hispanic applicants. If treated like Hispanic applicants, their probability of receiving a 2 or better would rise from 4% to over 10% (representing a 150% increase chance of receiving a 2 or higher). And had they been treated like African-American applicants, their probability of receiving a 2 or better would increase from 4% to over 18% (representing a 350% increased chance of receiving a 2 or higher).

Receiving a 2 or better on Harvard's overall rating is especially important for an applicant's chances of admission. As Table 4.2 illustrates, the probably of admission to Harvard (for all racial groups) increases by over 50% when an applicant's overall rating moves from 3+ to 2. Put another way, moving from a 3+ to a 2 means that the applicant *changes from being a likely reject to being a likely admit*. For applicants whose race results in their receiving a 3+ instead of a 2 (or vice versa), the increased (or decreased) chance of admission means all the difference in the world.

As explained, the evidence is especially strong that there is a penalty against Asian Americans and, separately, a preference in favor of African Americans and Hispanics in the personal and overall ratings. But the negative coefficients for Asian-American applicants in some of the other ratings theoretically could be indicative of either a penalty against Asian Americans or Asian Americans being weaker on unobserved dimensions.

To get a sense for what the unobserved characteristic would have to look like relative to the observed characteristics, I first calculate how strong Asian-American applicants were on the observed characteristics that relate to each of our outcome measures. To do this, I create an index by taking the data on all the right-hand-side variables with the exception of year and race/ethnicity and multiplying by the vector of coefficients for a particular ordered logit regression.[64] Each of these

[64] Removing "year" takes out any differences in the scale of the rating across years.

indexes gives a single measure of how strong applicants were taking into account their observed characteristics besides race/ethnicity.

Tables B.6.9 and B.6.10 give the average index for each race/ethnicity minus the average index for whites in panels 1 for the baseline and expanded datasets respectively. Hence positive numbers indicate that the group was stronger on observed dimensions besides race/ethnicity while negative numbers indicate the group was weaker on observed dimensions. For both datasets and for every measure, African Americans rank the lowest based on observed dimensions followed by Hispanics. Asian Americans are either stronger or virtually identical to whites on observables for all the ratings. This holds regardless of whether I control for the personal rating in the index.

Panel 2 of Tables B.6.9 and B.6.10 give the coefficients on race from the fourth column of each measure. These coefficients, combined with the indexes in panels 1 and 4, allow me to get a sense for how much of the differences between white applicants and the other racial groups is due to observed factors or unobserved factors. Namely, I divide the coefficients in panels 2 by the sum of the numbers in panels 1 and 2 to get the share of the unexplained difference between each groups' ratings and the rating of white applicants. When the numbers in panels 1 and 2 are of the opposite sign, then this implies that, to rationalize the results from something other than racial/ethnic preferences, groups that are *strong* (weak) on observed characteristics would have to be *weak* (strong) on unobserved characteristics, an unlikely proposition.

Results of this exercise are shown in Panel 3. Stars indicate that, despite being weaker on observable characteristics, the estimate for the intercept for the group is positive, indicative of preferential treatment relative to whites. Double stars indicate that, despite being strong on observable characteristics, the estimate for the intercept for the group is negative, indicative of a penalty against that racial group relative to whites. In all other cases the percent of the unexplained gap is reported.

The results are remarkable, with strong evidence of preferential treatment in ratings for African Americans and Hispanics and correspondingly strong evidence of

a penalty against Asian Americans. The personal rating provides a case in point. Despite having observed characteristics that place them virtually identical to their white counterparts, Asian Americans have significantly lower personal ratings in the baseline dataset. And while the teacher and counselor ratings show virtually no gap between whites and African Americans and Hispanics despite whites being much stronger on observable dimensions, those same ratings show lower ratings for Asian Americans despite Asian Americans being stronger on observed dimensions.

3.7 Statistical Analysis Shows a Penalty Against Asian-American Applicants in the Selection of Applicants for Admission.

In this section, I show that Asian-American applicants face a penalty in the selection of applicants for admission and this penalty remains even when controlling for measures where there is a penalty against Asian-American applicants (the overall rating and the personal rating). This penalty is substantial. Asian-American admit rates would increase by 23% if Asian Americans were treated as whites in the preferred model. The preferences African Americans and Hispanics receive are even larger. In the preferred model, admit rates for Asian Americans in the baseline dataset would increase over six-fold if they were treated like African Americans and would increase over three-fold if they were treated as Hispanic.

Table B.7.1 and Table B.7.2. show estimates of a series of logit models of admission for the baseline and expanded dataset, respectively. The patterns revealed therein are similar for both datasets. I focus my discussion on the baseline dataset because, by excluding the various preferences for athletes, legacies, and children of faculty and staff, it facilitates divining the effect of race on admissions decisions. (I return to a discussion of this at the end of this section.)

Figure 7.1 lists the controls that each model includes. Each successive model includes more controls than the preceding one.

Figure 7.1	
Model 1	Baseline: Race/ethnicity, female, disadvantaged, application waiver, applied for financial aid, first generation college student, mother's education indicators, father's education indicators, docket fixed effects, year indicators Expanded: baseline plus early decision, athlete, legacy, double legacy, faculty or staff child, Dean Director's list
Model 2	Model 1 plus SAT math*, SAT verbal*, SAT2 average,* missing SAT2 average times race/ethnicity, converted gpa*, academic index*, academic index squared times academic index greater than zero, academic index squared times academic index less than zero, flag for converted gpa=35 * indicates variable was z-scored
Model 3	Model 2 plus intended major indicators, female times intended major, female times race/ethnicity, race/ethnicity times disadvantaged Expanded: also includes race times legacy and early decision
Model 4	Model 3 plus intended college board indicators for neighborhood and high school type, missing college board indicators times race/ethnicity
Model 5	Model 4 plus indicators for each academic, extracurricular, teacher 1, teacher 2, counselor, alumni personal, and alumni overall ratings, interactions with missing alumni overall rating and race/ethnicity
Model 6	Adds indicators for each personal rating and overall rating

In my opinion, Model 5 is the most useful of these models for determining the effect/impact of race in admissions decisions. It controls for every factor included in Model 6, except the personal and overall ratings; those are excluded because (as shown above) they penalize Asian-American applicants and favor URM applicants. Nonetheless, I also demonstrate that, even assuming there were no racial preferences in the overall and personal ratings, Harvard penalizes Asian-American applicants and employs very strong preferences for African-American and Hispanic applicants in the selection of applicants for admission.

Results from the basic model with only demographic and year indicator variables are in the first column of Table B.7.1.[65] The coefficients on African-American and

[65] A full discussion of all the coefficients is included in Appendix B.

Hispanic students are positive and statistically significant.[66] Because whites are the omitted group, the basic model reveals an advantage to being African American or Hispanic. The coefficient on Asian American, however, is negative, suggesting that Asian Americans are at a disadvantage relative to whites when controlling only for geography and demographic characteristics.

Models 2 through 5 produce fairly stable estimates of the coefficient on Asian American that are negative and much larger in magnitude than the estimates of Model 1. That the coefficient on Asian American is larger in magnitude than in Model 1 is indicative of how strong Asian-American applicants are relative to whites on the observed factors (test scores, rankings etc.) as a whole relative to their white counterparts. That the estimate is negative and significant says that Asian Americans face a penalty in admissions even after controlling for the most salient factors in the admissions decisions.

The second to last column illustrates the results of Model 5, which controls for all of the ratings besides the overall rating and the personal rating. While some of the other ratings appear to slightly penalize Asian Americans, it is the overall and personal ratings where racial preferences stand out. Hence Model 5 is my preferred model. The last column adds the overall rating and the personal rating. Even including these measures that penalize Asian-Americans, a significant penalty is still present against Asian-American applicants.

Estimates of the coefficients on African-American and Hispanic are large and positive and of much bigger magnitude than the coefficients in Model 1. This is again indicative of these groups being weaker on the observed characteristics associated with higher admissions probabilities. The coefficients for both African-American and Hispanics fall when controls for the personal and overall rating are included, indicative of the positive preference African Americans and Hispanics receive in these two ratings.

The coefficient on disadvantaged is also quite large, though less than half the size of the African-American coefficient and twenty percent smaller than the Hispanic

[66] The same is true for the coefficients on Hawaiian and Native American.

coefficient. The results show that disadvantaged whites and Asian Americans have significantly lower admissions probabilities than non-disadvantaged African Americans.

The benefits African Americans and Hispanics receive for being disadvantaged are much smaller. In fact, for African Americans there is *no* added benefit from being disadvantaged.[67] Hispanics still see a boost for being disadvantaged but it is much smaller than the boost that white applicants receive for being disadvantaged.[68]

Another way of interpreting the results in the previous paragraph is that African-American and Hispanic applicants see the same boost for being disadvantaged, but the boost they receive for their race/ethnicity is smaller than their advantaged counterparts. The effect of racial preferences is then about twice as large for advantaged African Americans than disadvantaged African Americans.

While the discussion thus far has focused on the role of race/ethnicity, Asian Americans also suffer due to preferences for athletes and legacies. Table B.7.2 shows the logit estimates for the expanded model. Legacy preferences fall in between preferences for African Americans and Hispanics; The coefficient on legacy is higher than the coefficient on Hispanic but lower than that on African Americans, implying that standard legacy preferences fall in between preferences for African Americans and Hispanics in terms of their magnitude. In practice, however, Harvard gives much smaller legacy preferences for African Americans, mirroring the pattern for disadvantaged students (the coefficient on legacy times African-American is negative and statistically significant). Similar to what was seen for disadvantaged status, the preferences for African Americans are sufficiently strong that Harvard limits the additional boosts African Americans receive through non-race-based factors.

---

[67] These patterns are similar to what was seen in the overall and personal ratings. African Americans received a boost in both of these ratings, as did those who were disadvantaged. But African Americans received a smaller boost than other disadvantaged students, having already received a large boost for being African American.

[68] Harvard's OIR researchers also found smaller effects of being low income for African Americans. See HARV00069760.

Estimated athletic preferences are enormous and substantially larger than the preferences for African Americans. This is a bit misleading as relationships with athletes are often determined ahead of time, such that athletes often know whether or not they are likely to be admitted before they apply. Nonetheless, the fact that there are so many slots reserved for athletes and that the sports Harvard chooses to recruit in are disproportionately white also works against Asian-American applicants.

To understand how large these race preferences are, Table 7.1 takes an Asian American with characteristics implying a 25% chance of being admitted and examines how his or her admissions probabilities would change if he or she is treated as each of the other races/ethnicities. This is done for each combination of gender and disadvantaged status, both for the preferred model (Model 5) as well as the model that includes the overall and personal ratings (Model 6).

Table 7.1: Probability of admission for an Asian American if treated like other races/ethnicities when base probability is 0.25

		Probability of admission			
		Baseline Dataset		Expanded Dataset	
	Counterfactual group	Preferred Model	+Overall and Personal	Preferred Model	+Overall and Personal
Asian/male/no disadvantage	African American	0.954	0.900	0.935	0.862
	Hispanic	0.774	0.687	0.738	0.644
	White	0.360	0.325	0.340	0.304
Asian/female/no disadvantage	African American	0.939	0.874	0.923	0.841
	Hispanic	0.742	0.641	0.705	0.604
	White	0.303	0.267	0.296	0.269
Asian/male/disadvantaged	African American	0.790	0.675	0.725	0.599
	Hispanic	0.622	0.527	0.591	0.504
	White	0.325	0.313	0.303	0.293
Asian/female/disadvantaged	African American	0.737	0.615	0.685	0.559
	Hispanic	0.580	0.475	0.551	0.462
	White	0.271	0.256	0.262	0.259
Asian/male/no disadvantage	White legacy			0.801	0.733
	White double legacy			0.881	0.838

The first column shows the results for the preferred model. For an Asian-American applicant who is not disadvantaged and has a 25% probability of admission, if the applicant was treated like applicants of another racial group, his or her probability of admission would change dramatically. If treated as a white applicant, the probability of admission would increase to 30% if the applicant were female and 36% percent if the applicant were male. These jumps in probability are large and statistically significant, as they equate to a 20% and 44% increase in the probability of admission, respectively.

If the applicant were treated like an African-American or Hispanic applicant in the baseline dataset, the jumps would be even greater. If treated like a Hispanic applicant, the probability of admission would increase to 74% (if the applicant were female) and 77% (if the applicant male). And if treated like an African-American applicant, the probability of admission would increase to 94% (if female) and 95% (if male). The gains are smaller when the applicant is disadvantaged, but nonetheless remain substantial.

The second column shows the predictions when I add controls that have been shown to penalize Asian-American applicants and favor African-American and Hispanic applicants: the personal rating and the overall rating. Even with these measures, an Asian-American male who was not disadvantaged with a 25% chance of admission would see his admissions probability increase by 7.5 percentage points to 32.5% if the applicant was treated as a white applicant. When treated like an Hispanic applicant the increase would be 43.7 percentage points to 68.7%. And if the applicant was treated as an African-American applicant, the increase would be 65 percentage points, resulting in a 90% chance of admission.

The last entries of Table 7.1 examine the magnitude of legacy preferences. Using the predictions of the preferred model and the same comparison as previously—an Asian male who is not disadvantaged with a 25% chance of admission—would see his probability of admission rise to 79% if he was a white legacy and 87% if he was a white double legacy.

Table 7.2 shows what would happen to the overall Asian-American admission rate if they were treated like each of the other races/ethnicities for both the baseline and expanded dataset and considering the preferred model as well as the model with the overall and personal ratings.

Table 7.2: Average Probability of admission for Asian American applicants if treated like other races/ethnicities

	Probability of admission			
	Baseline Dataset		Expanded Dataset	
	Preferred Model	+Overall and Personal	Preferred Model	+Overall and Personal
Data	0.040	0.040	0.059	0.059
Model	0.040	0.040	0.059	0.059
If Treated as White	0.049	0.044	0.069	0.064
If Treated as African American	0.242	0.143	0.265	0.163
If Treated as Hispanic	0.123	0.083	0.147	0.106

In the baseline dataset the probability of admission for Asian-American applicants would increase by 0.9 percentage points if they were treated like whites in the preferred model. This represents a 23% increase in the admissions rate. Adding the overall rating and the personal rating decreases the effect to 0.4 percentage points. Given the evidence that these ratings assign a penalty to Asian Americans, this suggests a little over half of the gains are result from penalties in the application ratings.

The overall Asian-American admit rate would increase by much more if they were treated like African Americans or Hispanics. The results from the preferred model show Asian-American admit rates *increasing over six-fold* if they were treated as African Americans, from less than four percent to over 24%, and *increasing over three-fold* if they were treated as Hispanics. These gains are reduced when the true overall rating and personal rating are included, with Asian-American admit rates increasing 14.3% and 8.3% if they were treated as African Americans and Hispanics, respectively.

Again I consider whether the penalties Asian Americans face could reasonably be attributed to unobservables. As with the ratings analysis, indexes can be constructed net of year and race that give the strength of the applicant based on the controls, effectively aggregating all the measures Harvard uses and weighting them how Harvard is revealed to weight them in their admissions decisions. These indexes are not well defined for those who have characteristics that perfectly predict rejection and admission, so I focus on deciles of the admissions indexes where those who have characteristics that guaranteed rejection (admission) were assigned to the bottom (top) decile. These deciles then give the strength of the application based on

how the characteristics of the applicant translate into admissions probabilities net of race/ethnicity.

Table 7.3 and B.7.3 shows the share of each racial/ethnic group that is in each of the deciles for the preferred model and the model that includes the overall and personal ratings for the baseline and expanded models, respectively.

Table 7.3: Share of each race/ethnicity in each admissions index decile, baseline dataset

Preferred Model (Model 5)				
Admissions Decile	White	African American	Hispanic	Asian American
5 or lower	0.455	0.791	0.700	0.376
6	0.110	0.050	0.066	0.117
7	0.112	0.041	0.059	0.120
8	0.107	0.041	0.060	0.128
9	0.107	0.038	0.056	0.130
10	0.109	0.038	0.059	0.129

+Overall and Personal Ratings (Model 6)				
Admissions Decile	White	African American	Hispanic	Asian American
5 or lower	0.465	0.748	0.653	0.401
6	0.110	0.054	0.078	0.110
7	0.106	0.050	0.069	0.120
8	0.107	0.041	0.062	0.127
9	0.106	0.044	0.060	0.128
10	0.106	0.063	0.078	0.114

* created using admissionsLogitsIndices.do.

These deciles show that, based on observables, Asian Americans are substantially less likely to be in the bottom five deciles. In fact, estimates of the preferred model show that African Americans are over twice as likely as Asian Americans to be in this group. In contrast, Asian Americans are substantially more likely to be in the top deciles. For the preferred model, the share of Asian Americans rises steadily with every decile; the opposite trend occurs for African Americans. And even when the personal rating and overall rating are added Asian Americans are still over-represented at the top of the distribution. Hence selection on unobservables would have to be working in the opposite direction of selection on observables to explain the negative Asian-American coefficient. If selection on observables is working in the same direction as selection on unobservables (the standard assumption), then my results *underestimate* the penalties Asian-American applicants receive and the boosts African-American and Hispanic applicants receive.

3.8 Removing the Penalties and Preferences Associated with Race Would Significantly Increase the Number of Asian-American Admits

In this section, I show how Asian-American admissions would change with the removal of different kinds of preferences while holding the number of applicants who are admitted fixed. Removing racial/ethnic preferences would result in substantial increases in the number of Asian Americans admitted with the preferred model predicting 794 Asian-American admits over the six-year period–a 32% increase. If in addition legacy and athlete preferences were removed, the total rise in Asian-American admits is predicted to be 1216, an almost 50% increase. Even including measures that incorporate penalties against Asian Americans (the overall rating and personal rating) still results in a 767 increase in Asian-American admits when all preferences are removed.

The evidence provided thus far shows strong admissions preferences for under-represented minorities, athletes, and legacies and evidence of penalties again Asian-American applicants. In this section I evaluate how the removal of preferences for particular groups would affect admissions rates, fixing the overall admissions rate in a particular year for a particular dataset (baseline or expanded) to match with the data. For example, turning off the penalty against Asian-American applicants would increase the number of Asian Americans admitted. If no other adjustments were made, then Harvard's admitted class would be larger than Harvard intended. Hence the constant term in the logit admissions models is lowered for all groups until the model-predicted overall probability of admission is the same as the probability of admission in the data. To perform this exercise, I re-estimate the preferred model (Models 5) and the model that includes the overall and personal ratings (Model 6) but now allowing for race times year effects. Including these interactions ensures that in each year the admissions rate for each racial/ethnic group matches the actual admit rate for that group.[69] Results for these models are given in Tables B.8.1 and B.8.2.

[69] Given the small number of observations in each year outside of the main racial/ethnic groups, for the year interactions I pool Native Americans, Hawaiians, and missing. Note that I still leave a separate effect for each of the groups that does not vary by year.

The predicted year-by-year changes from removing different sets of preferences for both the preferred model and the model that adds the overall and personal ratings are presented in Tables 8.1 and 8.2 for the baseline and expanded datasets.

Table 8.1: Admissions levels and shares by race/ethnicity under different admissions policies, baseline dataset

		Preferred Model (Model 5)							Add Personal and Overall Ratings (Model 6)						
		2014	2015	2016	2017	2018	2019	Total	2014	2015	2016	2017	2018	2019	Total
Panel 1: Changes in Admissions Levels															
Asian American	Model	396	365	212	165	148	169	1455	396	365	212	165	148	169	1455
	No Asian penalty	453	428	236	195	188	189	1690	422	394	210	182	171	181	1560
	No African American or Hispanic preferences	476	463	259	221	207	228	1854	448	432	246	207	191	213	1738
	No racial preferences	550	536	284	252	256	251	2129	485	467	245	226	220	228	1871
African American	Model	209	222	116	132	126	121	926	209	222	116	132	126	121	926
	No Asian penalty	200	212	112	127	118	117	887	205	217	116	129	122	119	908
	No African American or Hispanic preferences	61	65	32	34	28	33	253	105	111	55	60	49	49	429
	No racial preferences	58	60	30	32	25	31	237	104	108	56	58	46	48	421
Hispanic	Model	174	208	112	126	134	119	873	174	208	112	126	134	119	873
	No Asian penalty	166	197	108	120	125	115	830	170	203	112	123	129	117	853
	No African American or Hispanic preferences	108	113	62	60	65	60	468	137	146	75	74	89	78	599
	No racial preferences	104	105	58	55	59	57	439	136	142	75	72	85	77	587
White	Model	614	551	324	261	239	212	2201	614	551	324	261	239	212	2201
	No Asian penalty	578	514	311	246	219	203	2070	598	534	325	253	227	206	2144
	No African American or Hispanic preferences	736	690	392	347	329	283	2776	694	646	374	326	305	266	2611
	No racial preferences	704	642	371	318	299	268	2602	688	628	377	315	290	260	2558
Panel 2: Changes in Admission Shares															
Asian American	Model	0.269	0.260	0.248	0.221	0.211	0.250	0.248	0.269	0.260	0.248	0.221	0.211	0.250	0.248
	No Asian penalty	0.308	0.304	0.276	0.260	0.268	0.280	0.288	0.287	0.281	0.246	0.243	0.244	0.267	0.266
	No African American or Hispanic preferences	0.324	0.330	0.304	0.296	0.294	0.337	0.317	0.305	0.307	0.288	0.276	0.273	0.315	0.297
	No racial preferences	0.374	0.381	0.332	0.336	0.365	0.371	0.363	0.330	0.332	0.286	0.302	0.314	0.337	0.319
African American	Model	0.142	0.158	0.136	0.176	0.179	0.179	0.158	0.142	0.158	0.136	0.176	0.179	0.179	0.158
	No Asian penalty	0.136	0.151	0.132	0.170	0.168	0.173	0.151	0.139	0.154	0.136	0.173	0.173	0.175	0.155
	No African American or Hispanic preferences	0.041	0.046	0.038	0.046	0.040	0.048	0.043	0.071	0.079	0.065	0.080	0.069	0.073	0.073
	No racial preferences	0.039	0.043	0.036	0.042	0.036	0.046	0.040	0.071	0.077	0.065	0.077	0.066	0.072	0.072
Hispanic	Model	0.118	0.148	0.131	0.168	0.191	0.176	0.149	0.118	0.148	0.131	0.168	0.191	0.176	0.149
	No Asian penalty	0.113	0.140	0.126	0.161	0.179	0.169	0.142	0.116	0.144	0.132	0.164	0.184	0.172	0.146
	No African American or Hispanic preferences	0.074	0.080	0.072	0.081	0.093	0.088	0.080	0.093	0.104	0.088	0.099	0.126	0.116	0.102
	No racial preferences	0.071	0.075	0.068	0.074	0.084	0.084	0.075	0.092	0.101	0.088	0.096	0.121	0.113	0.100
White	Model	0.417	0.392	0.379	0.349	0.340	0.313	0.376	0.417	0.392	0.379	0.349	0.340	0.313	0.376
	No Asian penalty	0.393	0.365	0.364	0.329	0.312	0.299	0.353	0.407	0.380	0.381	0.338	0.324	0.305	0.366
	No African American or Hispanic preferences	0.500	0.491	0.459	0.463	0.469	0.418	0.474	0.472	0.459	0.438	0.436	0.434	0.393	0.446
	No racial preferences	0.479	0.457	0.435	0.425	0.425	0.395	0.444	0.467	0.447	0.442	0.421	0.414	0.385	0.437

* "No racial preferences" refers to no racial/ethnic preferences

Table 8.2: Admissions levels and shares by race/ethnicity under different admissions policies, expanded dataset

		Preferred Model (Model 5)							Add Personal and Overall Ratings (Model 6)						
		2014	2015	2016	2017	2018	2019	Total	2014	2015	2016	2017	2018	2019	Total
Panel 1: Changes in Admissions Levels															
	Model	435	416	417	395	379	417	2459	435	416	417	395	379	417	2459
Asian American	No Asian penalty	496	481	450	429	434	448	2739	464	450	417	413	409	424	2577
	No African and Hispanic preference	510	509	481	473	469	508	2949	481	476	458	449	441	484	2790
	No racial preferences	588	586	514	511	534	540	3274	520	517	461	473	477	494	2942
	No legacy preferences	456	434	433	412	395	429	2559	450	430	429	405	391	428	2532
	No athlete preferences	469	449	439	420	405	449	2631	467	444	437	416	403	446	2613
	No race/legacy/athlete	669	666	572	577	605	611	3700	583	577	503	519	529	548	3259
	Model	242	249	205	231	234	239	1400	242	249	205	231	234	239	1400
African American	No Asian penalty	233	239	201	226	225	234	1358	238	244	205	228	229	238	1382
	No African and Hispanic preference	83	81	80	90	78	86	498	137	137	120	134	122	119	768
	No racial preferences	80	77	78	87	74	83	479	136	134	120	133	119	119	761
	No legacy preferences	254	259	216	242	246	252	1469	251	258	214	239	243	250	1453
	No athlete preferences	246	254	207	229	236	238	1410	248	256	206	227	235	237	1408
	No race/legacy/athlete	76	76	73	71	67	73	436	136	137	120	121	116	113	742
	Model	196	239	189	208	234	227	1293	196	239	189	208	234	227	1293
Hispanic	No Asian penalty	188	229	184	203	224	221	1249	192	233	189	205	229	226	1274
	No African and Hispanic preference	128	135	120	112	126	132	754	160	171	144	133	163	159	931
	No racial preferences	124	129	116	108	120	128	725	159	168	145	132	160	158	922
	No legacy preferences	205	250	199	218	246	238	1356	203	248	196	215	242	235	1339
	No athlete preferences	205	246	201	220	254	239	1365	205	246	201	221	254	238	1364
	No race/legacy/athlete	132	134	123	114	134	132	769	168	177	157	141	177	165	984
	Model	1002	911	833	778	786	710	5020	1002	911	833	778	786	710	5020
White	No Asian penalty	961	870	814	759	755	694	4854	983	890	833	768	769	706	4950
	No African and Hispanic preference	1140	1072	938	903	933	836	5821	1088	1018	904	870	888	806	5573
	No racial preferences	1108	1025	910	880	896	812	5630	1080	999	907	863	872	803	5525
	No legacy preferences	960	872	797	739	746	677	4792	971	880	805	752	758	682	4847
	No athlete preferences	957	870	794	740	736	663	4760	957	874	797	744	740	668	4780
	No race/legacy/athlete	1029	949	844	816	818	742	5198	1011	936	851	815	805	745	5163
Panel 2: Changes in Admission Shares															
	Model	0.219	0.217	0.228	0.219	0.214	0.237	0.222	0.219	0.217	0.228	0.219	0.214	0.237	0.222
Asian American	No Asian penalty	0.250	0.251	0.246	0.238	0.244	0.255	0.247	0.234	0.234	0.228	0.229	0.230	0.242	0.233
	No African and Hispanic preference	0.257	0.265	0.263	0.262	0.264	0.289	0.266	0.243	0.248	0.251	0.249	0.248	0.276	0.252
	No racial preferences	0.297	0.305	0.281	0.283	0.301	0.308	0.296	0.262	0.269	0.252	0.262	0.269	0.281	0.266
	No legacy preferences	0.230	0.226	0.236	0.228	0.223	0.244	0.231	0.227	0.224	0.234	0.225	0.220	0.243	0.229
	No athlete preferences	0.236	0.234	0.240	0.233	0.228	0.256	0.238	0.235	0.232	0.239	0.231	0.227	0.254	0.236
	No race/legacy/athlete	0.337	0.347	0.313	0.320	0.341	0.348	0.334	0.294	0.300	0.275	0.288	0.298	0.312	0.294
	Model	0.122	0.130	0.112	0.128	0.132	0.136	0.126	0.122	0.130	0.112	0.128	0.132	0.136	0.126
African American	No Asian penalty	0.118	0.125	0.110	0.125	0.127	0.133	0.123	0.120	0.127	0.112	0.127	0.129	0.135	0.125
	No African and Hispanic preference	0.042	0.042	0.044	0.050	0.044	0.049	0.045	0.069	0.071	0.066	0.074	0.069	0.068	0.069
	No racial preferences	0.040	0.040	0.042	0.048	0.042	0.047	0.043	0.068	0.070	0.066	0.074	0.067	0.068	0.069
	No legacy preferences	0.128	0.135	0.118	0.134	0.138	0.144	0.133	0.127	0.134	0.117	0.132	0.137	0.142	0.131
	No athlete preferences	0.124	0.132	0.113	0.127	0.133	0.136	0.127	0.125	0.133	0.112	0.126	0.132	0.135	0.127
	No race/legacy/athlete	0.038	0.040	0.040	0.039	0.038	0.042	0.039	0.068	0.071	0.066	0.067	0.065	0.064	0.067
	Model	0.099	0.124	0.103	0.115	0.132	0.129	0.117	0.099	0.124	0.103	0.115	0.132	0.129	0.117
Hispanic	No Asian penalty	0.095	0.119	0.101	0.112	0.126	0.126	0.113	0.097	0.122	0.103	0.114	0.129	0.129	0.115
	No African and Hispanic preference	0.065	0.071	0.066	0.062	0.071	0.075	0.068	0.081	0.089	0.079	0.074	0.092	0.090	0.084
	No racial preferences	0.063	0.067	0.063	0.060	0.068	0.073	0.066	0.080	0.087	0.079	0.073	0.090	0.090	0.083
	No legacy preferences	0.103	0.130	0.109	0.121	0.138	0.136	0.123	0.102	0.129	0.107	0.119	0.136	0.134	0.121
	No athlete preferences	0.103	0.128	0.110	0.122	0.143	0.136	0.123	0.103	0.128	0.110	0.123	0.143	0.135	0.123
	No race/legacy/athlete	0.066	0.070	0.067	0.063	0.075	0.075	0.069	0.085	0.092	0.086	0.078	0.100	0.094	0.089
	Model	0.505	0.474	0.455	0.431	0.443	0.404	0.454	0.505	0.474	0.455	0.431	0.443	0.404	0.454
White	No Asian penalty	0.485	0.453	0.445	0.421	0.426	0.395	0.439	0.496	0.464	0.455	0.426	0.433	0.402	0.447
	No African and Hispanic preference	0.575	0.558	0.513	0.501	0.525	0.476	0.526	0.548	0.530	0.494	0.482	0.500	0.459	0.504
	No racial preferences	0.558	0.534	0.498	0.488	0.505	0.462	0.509	0.544	0.520	0.496	0.479	0.491	0.458	0.499
	No legacy preferences	0.484	0.454	0.436	0.410	0.420	0.386	0.433	0.489	0.458	0.440	0.417	0.427	0.388	0.438
	No athlete preferences	0.482	0.453	0.434	0.410	0.415	0.377	0.430	0.482	0.455	0.436	0.413	0.417	0.381	0.432
	No race/legacy/athlete	0.518	0.494	0.462	0.452	0.461	0.423	0.470	0.509	0.488	0.465	0.452	0.454	0.424	0.466

The first panel of Table 8.1 shows the number of predicted Asian-American admits from the model, and the number of Asian-American admits for each of three policies: no Asian-American penalty, no preferences for African Americans and

Hispanics, and no racial/ethnic preferences (*i.e.*, applicants from all racial/ethnic groups are treated as if they were white).[70]

I first consider the counterfactual admit totals using the preferred model. For the baseline dataset, removing the Asian-American penalty in admissions (by turning off the negative coefficient in the logit model and then solving for a new constant term so that the total number of admits across all races/ethnicities matches the data) results in increased Asian-American admits in all years. The model predicts 235 more Asian-American admits over this six-year period, more than a 16% increase. Removing preferences for African Americans and Hispanics (but keeping the penalty against Asian Americans) results in even larger gains with 399 more Asian-American admits over the period, an increase of more than 27%. And removing all racial preferences and penalties—treating everyone as though they were white—raises the number of Asian Americans by 674, a *46% increase*.

Including the personal and overall ratings allows us to see how the penalties against Asian Americans work: part of it is due to penalties in the ratings and part is due to penalties in the selection of applicants for admission given these ratings. Keeping the penalty against Asian Americans in the personal and overall ratings but removing the Asian-American penalty in the selection of applicants for admission raises the number of Asian-American admits in five of the six years, with 2016 being the exception. The overall gain falls to 105 admits (a 7.2% increase), showing that the penalties Asian Americans face in ratings accounts for 55% of the overall Asian-American penalty. Removing preferences for African Americans and Hispanics results in 283 more Asian-American admits (a 19% increase). Removing all minority preferences and penalties results in 416 more Asian-American admits (a 29% increase). So even aside from the penalty in the overall and personal ratings, racial penalties and preferences have a significant negative effect on Asian Americans.

The second panel of Table 8.1 looks at the share of the admitted class by race/ethnicity under the different policies. In the preferred model, removing the

[70] These are calculated by summing the model-estimated probability of admission for each Asian-American student.

penalty against Asian Americans increases their share of the admitted class by at least 2.8 percentage points in all years, with the largest change in 2018 of 5.8 percentage points. The effects of removing the Asian-American penalty on the share of the admitted class that is African American or Hispanic is small, averaging less than one percentage point over the six-year period. Not surprisingly, white applicants bear the brunt of removing the Asian-American penalty. The drop in their share of admits is larger at 2.2 percentage points over the six-year period.

But removing preferences for African-American and Hispanic applicants or treating all applicants in a manner similar to whites has dramatic effects on the share of admits who are African American or Hispanic, especially for the former. The share of admits who are African American falls by over 11 percentage points, a 72% decrease in share. For Hispanics, the share of admits drops 6.9 percentage points, a 46% decrease. Adding the overall and personal ratings still results in dramatic decreases for these groups, over 53% and 31% for African Americans and Hispanics respectively.

The effects on African Americans and Hispanics, however, depend on disadvantaged status. The estimates show that Harvard has a preference for disadvantaged applicants but that preference is smaller for Hispanics, who already receive a large bump, and non-existent for African Americans. With the removal of racial preferences, disadvantaged African Americans and Hispanics receive the same bump as other disadvantaged applicants. This bump is smaller than the bump with racial preferences but nonetheless substantial.

Table 8.3 shows how removing racial preferences (including the Asian-American penalty) affects the number and share of disadvantaged admits of different races/ethnicities for Models 5 and 6.

Table 8.3: The Effects of Removing Racial/Ethnic Preferences and Penalties by Race/Ethnicity and Disadvantaged Status, baseline dataset

	Preferred Model (Model 5)			Add Overall and Personal Rating (Model 6)		
	Advantaged Admits	Disadvantaged Admits	Share Disadvantaged	Advantaged Admits	Disadvantaged Admits	Share Disadvantaged
Asian American						
Model	1089	366	0.252	1089	366	0.252
Remove Racial Preferences	1660	469	0.220	1427	445	0.238
African American						
Model	641	285	0.308	641	285	0.308
Remove Racial Preferences	104	132	0.560	226	195	0.462
Hispanic						
Model	534	339	0.388	534	339	0.388
Remove Racial Preferences	217	222	0.506	313	274	0.467
White						
Model	1859	342	0.155	1859	342	0.155
Remove Racial Preferences	2214	388	0.149	2172	386	0.151

* "Racial Preferences" means racial/ethnic preferences

Disadvantaged African Americans see a 53% fall in the number of admitted students in the preferred model. For non-disadvantaged African Americans the fall is much larger at 84%. This occurs because the added boost non-disadvantaged African Americans receive because of their race is significantly smaller than the added boost disadvantaged African Americans receive because of their race. As a result, the share of African-American admits who are disadvantaged shifts from 31% to 56%. Similar patterns, though not quite as stark, occur for Hispanic students: the drop in admits is 59% for non-disadvantaged students and below 34% for disadvantaged students.

Turning to the expanded dataset in Table 8.2, the number of Asian-American admits increases significantly relative to the baseline dataset as now more applicants are included. The percentage increases in admits, however, are not as large but nonetheless significant. In the preferred model removing the Asian penalty results in 280 more Asian-American admits, an 11% increase. The smaller percentage increase is in part due to groups like athletes who are admitted at such high rates that changing racial/ethnic preferences has little effect on them, distorting the averages. Removing preferences for African Americans and Hispanics increases the number of Asian-American admits by 490 (a 20% increase); treating all students as though they were white increases the number of Asian-American admits by 815 (a 33% increase).

The expanded dataset also allows for calculations of how legacy and athlete preferences affect different races and ethnicities. Even though the magnitude of athletic and legacy preferences is substantially higher than the magnitude of the Asian-American penalty, removing preferences for athletes and legacies does not have as large of an effect because these preferences are spread (although unequally) across the different groups. Removing legacy preferences would increase the number of admitted Asian Americans in the preferred model by 100 (a 4.1% increase). Removing athletic preferences produces larger effects, increasing the number of Asian-American admits by 172 (a 7% increase).[71]

African-American and Hispanic applicants would see small gains with the removal of legacy preferences, with an additional 69 and 63 admits respectively over the six-year period in the preferred model, 4.9% increase for both groups. Removing athletic preferences would have very little effect on African-American applicants (an increase of 10) but would increase the number of Hispanic admits by 72, a 5.6% increase.

Finally, I simulate the removal of preferences based on race, legacy status, and athletics. By far the biggest winners are Asian-American applicants. The predicted increase in Asian-American admits is 1241 in the preferred model, *a 50% increase*. White applicants see small gains, losing out from the removal of athletic and legacy preferences but gaining from the removal of racial preferences. The total increase in the number of white admits is 178, a 3.5% increase. By far the biggest losers from the removal of this set of preferences are African Americans who see their admits fall by 964, a 69% decrease. Hispanics lose as well, with 524 less admits, a 40% decrease. Including the personal and overall ratings mitigates these effects, illustrating how racial preferences in ratings is used to achieve racial preferences in admissions. The increase in Asian-American admits is still quite large at 800, a 32% increase.

[71] To simulate the effects of athletic preferences, the athlete effect was turned off and those who were athletes were given a 2 for the athletic rating and a 2 on the extracurricular rating.

4 There Is Additional Supporting Evidence that Racial Penalties and Preferences Work Against Asian-American Applicants and that the Predicted Harm Is an Underestimate

There are at least three reasons why my estimates of the damage done to Asian-American applicants through both direct penalties as well as preferences for other groups are underestimates.

First, a significant percentage of applicants do not report their race/ethnicity. Conventional wisdom is that it is white and Asian-American applicants who do not report because the fear that the consideration of race as a factor in university admissions will hinder their chances of admission. Figure C.1 uses the data from HARV00032509 to plot the share of domestic applicants who are Asian American, white, and who do not report their race. Particularly starting from the class of 2010 admissions cycle, rises (falls) in the share missing are accompanied by falls (rises) in the share of both Asian-American and white applicants. A similar pattern is not seen for African-American or Hispanic applicants. Hence to the extent that Asian Americans are also in the missing race group and the missing race group is also harmed by preferences, then I am underestimating the harm Asian Americans are suffering.[72]

Second, selection on observables tends to move in the same direction as selection on unobservables, again implying I am underestimating the damage done to Asian Americans from preferences of various forms. I have shown that Asian Americans are incredibly strong on the observed dimensions associated with higher admissions rates. Indeed, if admissions were based on academics alone the share of admits who were Asian American would be more than 50%. To the extent that I am missing other non-race-based characteristics that are associated with the strength of the application Asian-American applicants will likely be stronger on those dimensions as well. For example, Advanced Placement scores were not used in the analysis because they were not observed for all admissions cycles. Yet I have shown in the

[72] Removing all preferences (racial, legacy, and athletic) results in a 21% increase in the number of missing race admits. This falls in between the effects for Asian Americans and whites, consistent with idea that those applicants who do not report race being largely Asian-American and white applicants.

cycles where they are observed that Asian Americans take more tests and score better than the other racial/ethnic groups. I do not use music ratings because few applicants fall under this category. Yet here, too, Asian Americans score quite well.

Finally, there is the issue of bias in the measures I do use. While there is clear evidence of bias in the personal ranking and the final reader's overall ranking, the results also suggest bias in the other Harvard rankings measures that are more subjective.

The files SFFA requested were designed to investigate this issue further, focusing primarily on Asian-American and African-American applications, the former receiving the largest penalty in the ranking system and the latter receiving the largest benefit. The comments made about both groups are enlightening. Harvard's readers give the impression of talking themselves out of reviewing Asian Americans strongly and into reviewing African Americans strongly. In Appendix C, I document the comments emblematic of the higher standard to which Asian Americans are held.

Furthermore, a subset of the 2018 files that SFFA requested included applicants from the same school but who were of different races/ethnicities. Both counselors and teachers have the option of ranking the applicant on various dimensions. There are a number of examples where the Asian-American applicant was given the same or lower counselor score than an African-American applicant despite the counselor rating the Asian-American applicant stronger and, based on my reading of the letters themselves, writing as strong if not stronger letter for the Asian-American applicant. I discuss examples of this in detail in Appendix C.

# # #

Dated: October 16, 2017

s/ Peter S. Arcidiacono
Peter S. Arcidiacono

APPENDIX A

1 Appendix A

1.1 Odd Ratings

For admissions cycles prior to 2019, the overall rating of both the first and third reader are given as string of three numbers. The first number is the score of the third reader and the last number is the score of the second reader. If the file was not passed on to a third reader, then the first number is usually a 6. The middle number is usually a 6, 7, 8, or 9. A seven indicates that the ranking of the final reader (the first reader if the file was not passed on, otherwise the third reader) should have a "+" at the end; a nine would indicate a "−" at the end, with an eight or a six interpreted as no plus or minus.

There are, however, instances where string of numbers does not follow this convention. In Table A.1 I list the number of times each of these instances occurs in the expanded sample and how I assigned a score for the final reader in each case. The total number of cases was 1560, or less 1.3 percent of the expanded sample for the 2014-2018 cycles.

1.2 Modeling binary outcomes

I model binary outcomes (e.g. admission/rejection) by making use of a latent index π_i, where i indexes individuals and where

$$\pi_i = X_i\gamma + \varepsilon_i \tag{1}$$

The university accepts individual i if $\pi_i > 0$. In the above equation, X_i represents attributes about candidate i that I observe in the data. One of the tasks of the econometrician is to estimate γ which provides a relationship between the observed characteristics and admissions. There are many factors however that influence the admissions decision that are not observed by the econometrician. ε_i represents these unobserved attributes. If I make an assumption about how the error term ε_i is distributed, I can construct for each candidate his or her probability of admission. A standard assumption is that the unobservables follow a logistic distribution and are independent from the observed characteristics. In this case, the probability of admission is given by:

$$\Pr\left(Y_i = 1\right) = \frac{\exp(X_i\gamma)}{\exp(X_i\gamma) + 1} \tag{2}$$

where $Y_i = 1$ if the individual was admitted and 0 otherwise. Specifying the probabilities in this way results in a *logit model*. The parameters, γ, are chosen to best match the patterns of admission seen in the data. Embedded in X_i are indicator variables for the applicant's race/ethnicity. To the extent that certain races/ethnicities see bonuses or penalties in their chances of admission after taking into account differences in the other characteristics in X_i (e.g. test scores, Harvard's rankings, etc.) this will be reflected by positive and negative estimates respectively on the parameters associated with these race/ethnicity indicator variables.

To the extent that there are unobserved characteristics that are i) informative to the admissions decision and ii) are correlated with race/ethnicity then the estimate of the relationship between race/ethnicity and admissions will in part be due to this correlation. The Harvard database is unusually rich in its availability of characteristics that may influence the admissions decisions. Such richness partially mitigates the concern that

race/ethnicity is picking up something else as we are effectively accounting for much of the 'something else'. But nonetheless there is always a concern that there may be some other measure out there that would explain why racial/ethnic differences are present. This concern becomes mitigated as more controls are added and, as more controls are added, the researcher becomes informed about how the estimates would change if further (though unavailable) controls were added. For example, if adding controls leads to the estimated coefficient on a particular group to become more and more positive then we would expect that pattern to continue with further controls.

The estimated parameters make it possible to calculate how an applicant's probability of admission would change had they been treated like a member of an alternative race/ethnicity. For example, suppose based on the observable characteristics of the applicant (the X's) and applicant would have a 25% chance of admission. This translates into an index value of $\ln(.25/.75)$. In order to evaluate how the applicant's chances of admission would change as a member of an alternative race/ethnicity, I add to this index value the parameter associated with the alternative race/ethnicity to the index and subtract the parameter associated with the applicant's actual race/ethnicity. This yields a new index value, say π^*. The probability of admission given this new index value is then given by $\exp(\pi^*)/(1+\exp(\pi^*))$.

1.3 Modeling ordered outcomes

Harvard's component ratings take on one of a discrete number of values. The values are ordered in the sense that a 3+ is better than a 3, a 2- is better than a 3+, etc. Like in the case of admissions, I define a latent index π_i^R, where i indexes individuals and where

$$\pi_i^R = X_i^R \gamma^R + \varepsilon_i^R \tag{3}$$

where R indexes the rating being considered. Suppose the rating under consideration takes on one of four values: 4, 3, 2, or 1. Then the observed rating, Y_i^R takes on a particular value, say 3, when π is in a certain range. Namely:

$$Y_i^R = \begin{cases} 1 & \text{if } \pi_i^R \geq k_1 \\ 2 & \text{if } k_1 > \pi_i^R \geq k_2 \\ 3 & \text{if } k_2 > \pi_i^R \geq k_3 \\ 4 & \text{if } k_3 > \pi_i^R \end{cases} \tag{4}$$

where $k_1 > k_2 > k_3$ are the thresholds associated with each ranking. Both the index parameters, γ, and the thresholds, the k's, are then estimated. As with the admissions model, a distributional assumption is required on the ε's. I again assume a Type 1 extreme value distribution which leads to an ordered logit model. The

probabilities of receiving each of these rankings given X_i is then given by:

$$\begin{aligned}
Pr(Y_i = 4) &= \frac{\exp(k_3 - X_i^R\gamma^R)}{1 + \exp(k_3 - X_i^R\gamma^R)} \\
Pr(Y_i = 3) &= \frac{\exp(k_2 - X_i^R\gamma^R)}{1 + \exp(k_2 - X_i^R\gamma^R)} - \frac{\exp(k_3 - X_i^R\gamma^R)}{1 + \exp(k_3 - X_i^R\gamma^R)} \\
Pr(Y_i = 2) &= \frac{\exp(k_1 - X_i^R\gamma^R)}{1 + \exp(k_1 - X_i^R\gamma^R)} - \frac{\exp(k_2 - X_i^R\gamma^R)}{1 + \exp(k_2 - X_i^R\gamma^R)} \\
Pr(Y_i = 1) &= 1 - \frac{\exp(k_1 - X_i^R\gamma^R)}{1 + \exp(k_1 - X_i^R\gamma^R)}
\end{aligned}$$

As with the logit model of admissions, to the extent that certain races/ethnicities see bonuses or penalties in their chances of admission after taking into account differences in the other characteristics in X_i^R (e.g. test scores, Harvard's other rankings, etc.) this will be reflected by positive and negative estimates respectively on the parameters associated with these race/ethnicity indicator variables.

The ordered logit model assumes that there is a uniform penalty or bonus associated with particular characteristics: the thresholds (the k's) are constant across applicants. But it may be the case that the thresholds themselves depend on the characteristics of the applicant. For example, penalties or bonuses for race/ethnicity may be more salient when the applicant is close to admission (high overall rating) than far away from admission (low overall rating). A generalized ordered logit allows the thresholds (the k's) to depend on the characteristics of the applicant, effectively allowing the size of preferences for race/ethnicity to be different at higher levels of the rating.

Table A.1: Coding decisions made for irregular ratings and their frequencies in the expanded sample

Original Rating	Imputed Final Reader Score	Frequency
122	1	2
212	2	1
213	2	1
222	2	70
223	2	35
232	2-	225
233	2-	179
253	2-	1
322	3+	180
323	3+	427
332	3	35
333	3	73
334	3	3
342	3	1
343	3	8
433	4	1
554	5	1
604	4	2
622	2	1
623	2-	6
632	3+	8
633	3	210
634	3-	3
643	3-	52
644	4	45
645	5	1
653	3-	3
654	4	2
655	4	4
Observations		1580

Table A.2: Applicants and Admit Rate by Preferred Group

	Number of Applicants	Admit Rate
Not Athlete	165,353	0.060
Athlete	1374	0.860
Not Legacy	162,083	0.059
Legacy	4644	0.336
Not Child of Faculty or Staff	166,406	0.066
Child of Faculty or Staff	321	0.467
Not Dean and Director's Interest List	164,226	0.061
Dean and Director's Interest List	2501	0.422

*created using actionpools3.do

Table A.3: Applicants, Admits, and Admit Rate by Year and Regular vs. Early

	Regular Action			Early Action		
Year	Applicants	Admits	Admit rate	Applicants	Admits	Admit Rate
2014	24,376	1,986	0.081	0	0	
2015	28,260	1,923	0.068	0	0	
2016	25,696	1,012	0.039	3,582	825	0.230
2017	23,604	870	0.037	4,111	947	0.230
2018	23,390	817	0.035	3,958	971	0.245
2019	24,757	790	0.032	4,993	991	0.198

Table A.4: Applicants, Admits, and Admit Rate by Year, Regular vs. Early, and Special Circumstances

	Regular Action						Early Action					
	Regular Applicant			Special Circumstances			Regular Applicant			Special Circumstances		
Year	Applicants	Admits	Admit Rate	Applicants	Admits	Admit Rate	Applicants	Admits	Admit Rate	Applicants	Admits	Admit Rate
2014	23,176	1,471	0.063	1,200	515	0.429	0	0		0	0	
2015	27,016	1,408	0.052	1,244	515	0.414	0	0		0	0	
2016	24,968	857	0.034	728	155	0.213	2,982	458	0.154	600	367	0.612
2017	22,963	754	0.033	641	116	0.181	3,448	487	0.141	663	460	0.694
2018	22,799	709	0.031	591	108	0.183	3,272	520	0.159	686	451	0.657
2019	24,134	690	0.029	623	100	0.161	4,238	524	0.124	755	467	0.619

* Sample excludes foreign applicants and transfers. Applications Harvard labels as withdrawals, incompletes, or departed are excluded. Ony first time applications are included.
* Results based on actionPools.do
* Original Table was Table_Data_Process.xlsx
* "Special Circumstances" means legacies, athletes, faculty/staff kids, dean's director

Table A.5: Dataset Cuts

From Both Datasets	Admits Removed	Applicants Removed	Remaining Obs.
Non-transfer, non-foreign sample size	0	0	171,840
Withdraws, Incompletes, Departed	0	4,512	167,328
Repeat Applicant	0	601	166,727
Overall Rating>5- OR Missing	0	2,848	163,879
Academic Rating>5 OR Missing	0	121	163,758
Personal Rating>5 OR Missing	0	164	163,594
Extracurricular Rating Missing	0	1	163,593
Athletic Rating Missing	0	12	163,581
SAT Math or SAT Verbal Missing	5	7,142	156,439
Academic Index Missing	59	5,738	150,701

Additional Baseline Cuts	Admits Removed	Applicants Removed	Remaining Obs.
Early Decision	3,715	15,736	134,965
Legacy	709	3,011	131,954
Athlete	495	603	131,351
Staff or Faculty Child	53	158	131,193
Dean/Director Preference	238	985	130,208

* Results based on sampleCuts.do

Table A.6: Harvard's Assignment of Race/Ethnicity under the Old Methodology

	Race/Ethnicity							
Member in Which Group	White	African American	Hispanic	Asian American	Native American	Hawaiian	Missing	Total
A	0	3	1	55,331	0	0	1	55,336
A,B	0	526	0	0	0	0	0	526
A,B,P	0	6	0	0	0	0	0	6
A,B,P,W	0	5	0	0	0	0	0	5
A,B,W	0	139	0	0	0	0	0	139
A,P	0	0	0	160	0	0	0	160
A,P,W	0	0	0	106	0	0	0	106
A,W	0	0	0	5,446	0	0	3	5,449
B	0	19,378	0	0	0	0	3	19,381
B,P	0	33	0	0	0	0	0	33
B,P,W	0	12	0	0	0	0	0	12
B,W	0	1,685	0	0	0	0	2	1,687
N	0	0	492	0	620	0	0	1,112
N,A	0	0	0	32	1	0	0	33
N,A,B	0	24	0	0	0	0	0	24
N,A,B,P	0	5	0	0	0	0	0	5
N,A,B,P,W	0	2	0	0	0	0	0	2
N,A,B,W	0	33	0	0	0	0	0	33
N,A,P	0	0	0	4	0	0	0	4
N,A,P,W	0	0	0	7	0	0	0	7
N,A,W	0	0	0	133	1	0	0	134
N,B	0	486	0	0	0	0	2	488
N,B,P	0	5	0	0	0	0	0	5
N,B,P,W	0	1	0	0	0	0	0	1
N,B,W	0	369	0	0	0	0	0	369
N,P	0	0	0	0	0	3	0	3
N,P,W	0	0	0	0	0	4	0	4
N,W	1	0	429	0	1,108	0	4	1,542
P	0	0	0	0	0	244	0	244
P,W	0	0	0	1	0	132	0	133
W	75,492	2	13,331	2	5	1	5	88,838
Total	75,493	22,714	14,253	61,222	1,735	384	20	175,821

Table A.7: Descriptive Statistics by Admit Status for Baseline and Expanded Datasets

	Baseline Dataset			Expanded Dataset		
	Reject	Admit	Total	Reject	Admit	Total
Admitted	0.00	100.00	4.50	0.00	100.00	7.34
Female	49.29	48.87	49.27	49.21	48.01	49.12
Disadvantaged	12.33	24.21	12.87	11.86	16.50	12.20
First-generation college	8.99	9.17	9.00	8.64	7.00	8.52
Early action applicant				8.61	33.57	10.44
Athlete				0.12	10.65	0.89
Legacy				2.08	13.92	2.95
Faculty child				0.01	0.54	0.05
Staff child				0.10	0.80	0.16
Dean / Director's List				0.96	9.34	1.57
Mother highest ed: no college	29.99	27.83	29.89	28.98	21.52	28.43
Mother highest ed: BA degree	32.64	28.78	32.47	32.70	29.35	32.45
Mother highest ed: MA degree	24.05	27.23	24.20	24.42	28.67	24.73
Mother highest ed: PhD/JD/MD degree	10.04	13.64	10.20	10.59	17.73	11.11
Mother highest ed: Missing	0.03	0.03	0.03	0.03	0.03	0.03
Father highest ed: no college	27.98	28.20	27.99	27.06	21.18	26.62
Father highest ed: BA degree	23.98	20.08	23.81	23.93	20.62	23.69
Father highest ed: MA degree	24.62	24.16	24.60	24.97	26.79	25.10
Father highest ed: PhD/JD/MD degree	19.43	24.43	19.66	20.01	28.25	20.62
Father highest ed: Missing	0.04	0.03	0.04	0.04	0.03	0.04
Application read by 3rd reader	10.93	95.77	14.74	12.97	93.96	18.92
Missing alumni rating	23.94	1.83	22.94	16.64	14.76	16.50
Fee Waiver	17.40	21.49	17.58	77.47	67.94	76.77
Applied for Financial Aid	78.48	81.10	78.60	22.65	7.36	21.53
SAT1 math (z-score)	-0.05	0.48	-0.03	-0.04	0.44	0.00
	(1.01)	(0.59)	(1.00)	(1.00)	(0.62)	(0.98)
SAT1 verbal (z-score)	0.08	0.61	0.10	0.10	0.56	0.13
	(0.94)	(0.51)	(0.94)	(0.94)	(0.57)	(0.92)
SAT2 avg (z-score)	-0.09	0.52	-0.06	-0.08	0.44	-0.03
	(1.01)	(0.55)	(1.00)	(1.01)	(0.67)	(0.99)
Never took SAT2	12.60	1.43	12.10	12.43	1.72	11.65
Standardized high school GPA (z-score)	0.06	0.46	0.08	0.06	0.34	0.08
	(0.94)	(0.58)	(0.93)	(0.94)	(0.66)	(0.92)
Academic index (z-score)	-0.04	0.67	-0.01	-0.03	0.57	0.02
	(1.01)	(0.46)	(1.00)	(1.01)	(0.57)	(0.99)
Academic index percentile	0.48	0.72	0.49	0.49	0.68	0.50
	(0.29)	(0.21)	(0.29)	(0.29)	(0.24)	(0.29)
Number of AP tests taken	4.28	6.19	4.34	4.25	5.50	4.33
	(4.01)	(3.85)	(4.02)	(4.02)	(3.94)	(4.02)
Average score of AP tests	4.33	4.66	4.34	4.34	4.69	4.37
	(0.65)	(0.40)	(0.64)	(0.64)	(0.40)	(0.63)
N	124,350	5,858	130,208	139,633	11,068	150,701

* Constructed using results from sumStatsTablesPoolRej.do

Table A.8: Harvard Ratings by Admit Status for Baseline and Expanded Datasets

	Baseline Dataset			Expanded Dataset		
	Reject	Admit	Total	Reject	Admit	Total
Academic rating						
<3-	18.53	0.02	17.70	18.02	1.69	16.82
=3-, 3, or 3+	42.13	19.99	41.13	42.13	23.25	40.74
>3+	39.33	79.99	41.16	39.84	75.06	42.43
Extracurricular rating						
<3-	4.01	0.72	3.86	3.94	2.26	3.82
=3-, 3, or 3+	75.22	30.98	73.23	74.83	37.59	72.10
>3+	20.77	68.30	22.91	21.22	60.15	24.08
Athletic rating						
<3-	40.29	39.22	40.24	39.74	32.28	39.19
=3-, 3, or 3+	51.17	45.60	50.92	51.19	41.17	50.45
>3+	8.54	15.18	8.84	9.08	26.55	10.36
Personal rating						
<3-	0.50	0.00	0.48	0.49	0.02	0.46
=3-, 3, or 3+	83.60	21.49	80.81	83.06	27.11	78.95
>3+	15.90	78.51	18.72	16.45	72.87	20.59
Teacher 1 rating						
<3-	0.67	0.00	0.64	0.65	0.02	0.60
=3-, 3, or 3+	73.11	28.75	71.11	72.86	34.58	70.05
>3+	26.23	71.25	28.26	26.49	65.40	29.35
Teacher 2 rating						
<3-	0.57	0.02	0.55	0.56	0.05	0.52
=3-, 3, or 3+	72.07	27.49	70.06	71.74	33.99	68.97
>3+	27.36	72.49	29.39	27.71	65.96	30.52
School counselor rating						
<3-	0.89	0.00	0.85	0.85	0.01	0.79
=3-, 3, or 3+	77.97	30.88	75.85	77.70	35.18	74.58
>3+	21.14	69.12	23.30	21.45	64.81	24.63
Alumni Personal rating						
<3-	8.53	0.40	8.06	8.27	0.77	7.71
=3-, 3, or 3+	32.64	6.60	31.15	32.23	9.02	30.49
>3+	58.83	93.00	60.79	59.50	90.21	61.80
Alumni Overall rating						
<3-	22.39	1.15	21.17	21.85	1.78	20.35
=3-, 3, or 3+	36.42	12.50	35.05	36.27	14.54	34.64
>3+	41.19	86.35	43.78	41.87	83.68	45.00
N	124,350	5,858	130,208	139,633	11,068	150,701

* Constructed using results from sumStatsSubRatTablesPoolRej.do

APPENDIX B

2 Appendix B

2.1 Simulation procedure

In order to determine the likelihood that the single-race African-American admit rate would be as close as it is to the admit rate for all other domestic applicants for the classes 2017 to 2019, I set up a simulation that is designed to make the rates as close as possible absent direct manipulation. I began by assuming that the quality of single-race African-American applications (after adjusting for any racial preferences) comes from the same distribution of other domestic applicants, and that this is true in every year. I then drew from a normal distribution[1] the quality of each applicant where the numbers of single-race African-American applicants and other domestic applicants are taken from the data for that admissions cycle. I assume Harvard then admits the applicants who have the highest draws from the quality distribution where the number of admits is taken from the total number of domestic admits in that admissions cycle.

I performed this simulation 50,000 times for each of the three admissions cycles. I then calculated what percent of the time the absolute value of the gap in admit rates between single-race African Americans and all other domestic applicants was less than 0.000064 (the maximum difference observed in admit rates during this period) in all three periods. The results showed that the admit rates for each of the years being less than 0.000064 occurred in less than 0.2% of the simulations.

2.2 Analysis of day-by-day changes in admissions decisions

The timing analysis starts from Harvard's audit files. These files include day-by-day logs of admissions decisions. I merged the data on race and ethnicity to this audit data. For the IPEDS timing analysis, I identified black applicants as any applicant whose "ethnicity_black" field is "Yes" and all other ethnicity variables are missing.

When mimicking the IPEDs analysis for the earlier years, African-American applicants are those defined as African American using the old methodology. I then reclassified individuals as not African American if:

- `member_in_which_group≠"B"` and

[1] The results are not sensitive as to what distribution I am drawing from, be it a normal distribution with higher or lower variance or a different distribution altogether such as uniform distribution.

`member_in_which_group≠""`

- `Hispanic_or_latino=="Y"`
- `Amer_indian_or_alaska_other≠"" or other_east_asia≠"" or other_indian-subcontinent≠"" or native_hawaiian_other≠""`

The code to generate the number of admits by race on any given day proceeds as follows.

1. For each day during the cycle, we find the most recent working action for every applicant in the pool.[2]
2. Admits are identified as any applicant whose most recent working action is "Admit", "Early Admit", "Waitlist Admit", "Previous Admit", "Ad Star", and "Ad Dot".
3. Applicants are identified by the "`app_type_new`" variable. We include early action, previous and regular.
4. We can then construct admits by group and applicants by group for each day during the cycle.

The data was constructed to match Harvard's one-pagers, which are used by the admissions office during the committee process to track, among other things, the ethnic composition of the class.

[2] The working action is the tentative decision on the file. When the decision is released, it becomes a public action.

Figure B.1.1

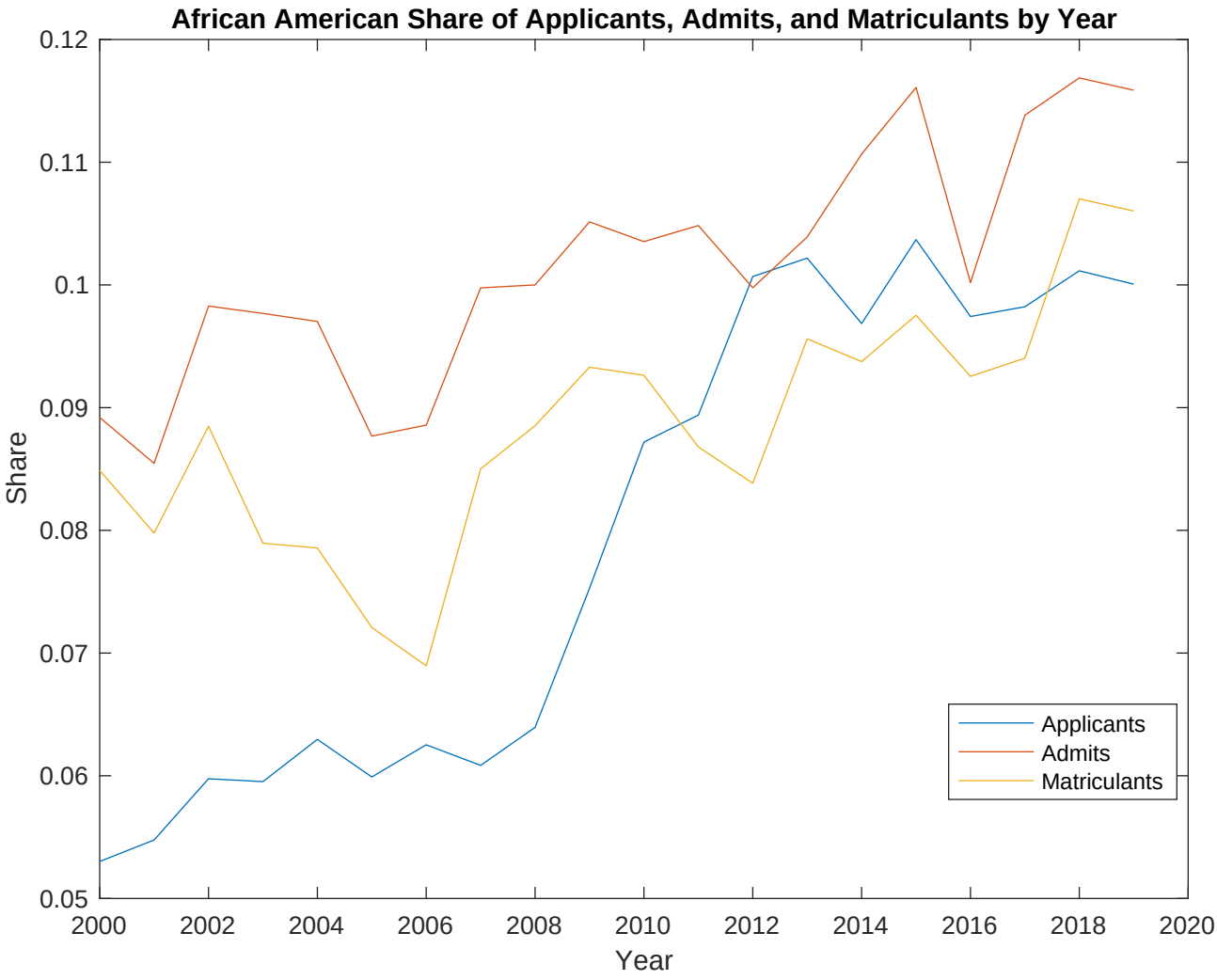

African American Share of Applicants, Admits, and Matriculants by Year
Share
Year
0.12
0.11
0.1
0.09
0.08
0.07
0.06
0.05
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Applicants
Admits
Matriculants

Figure B.1.2

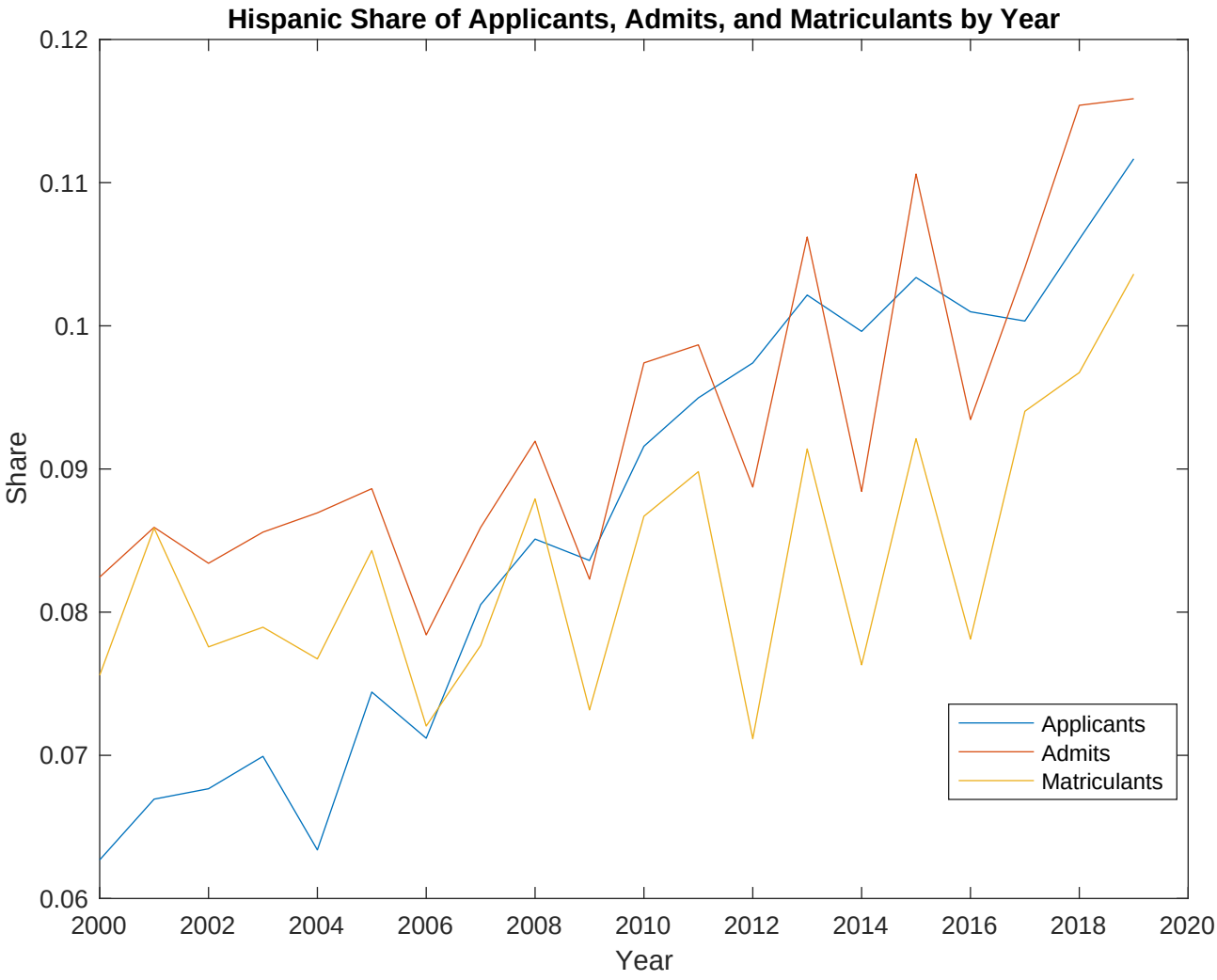

Hispanic Share of Applicants, Admits, and Matriculants by Year
Share
Year
0.12
0.11
0.1
0.09
0.08
0.07
0.06
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Applicants
Admits
Matriculants

Figure B.1.3

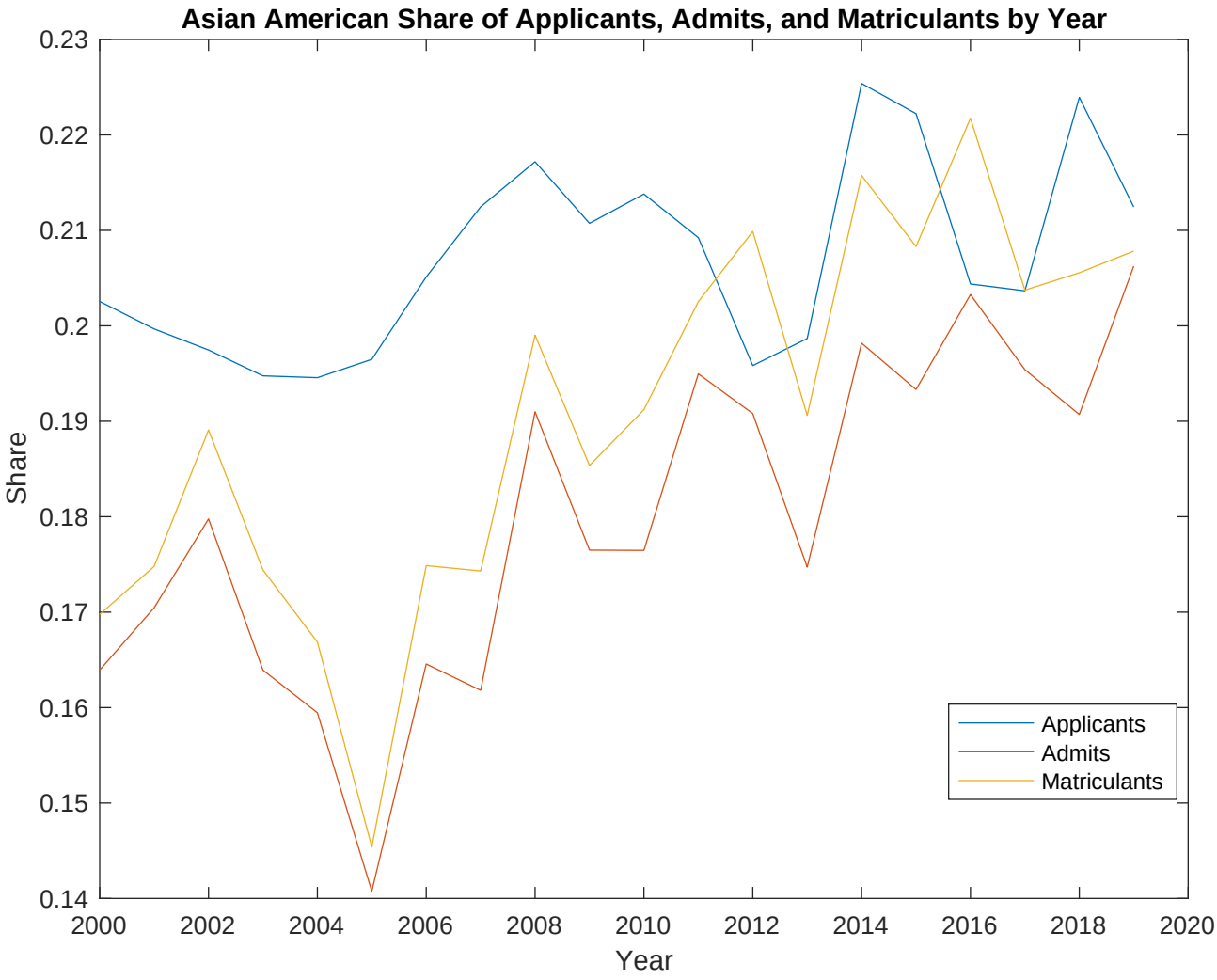

Asian American Share of Applicants, Admits, and Matriculants by Year
Share
Year
0.23
0.22
0.21
0.2
0.19
0.18
0.17
0.16
0.15
0.14
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Applicants
Admits
Matriculants

Figure B.1.4

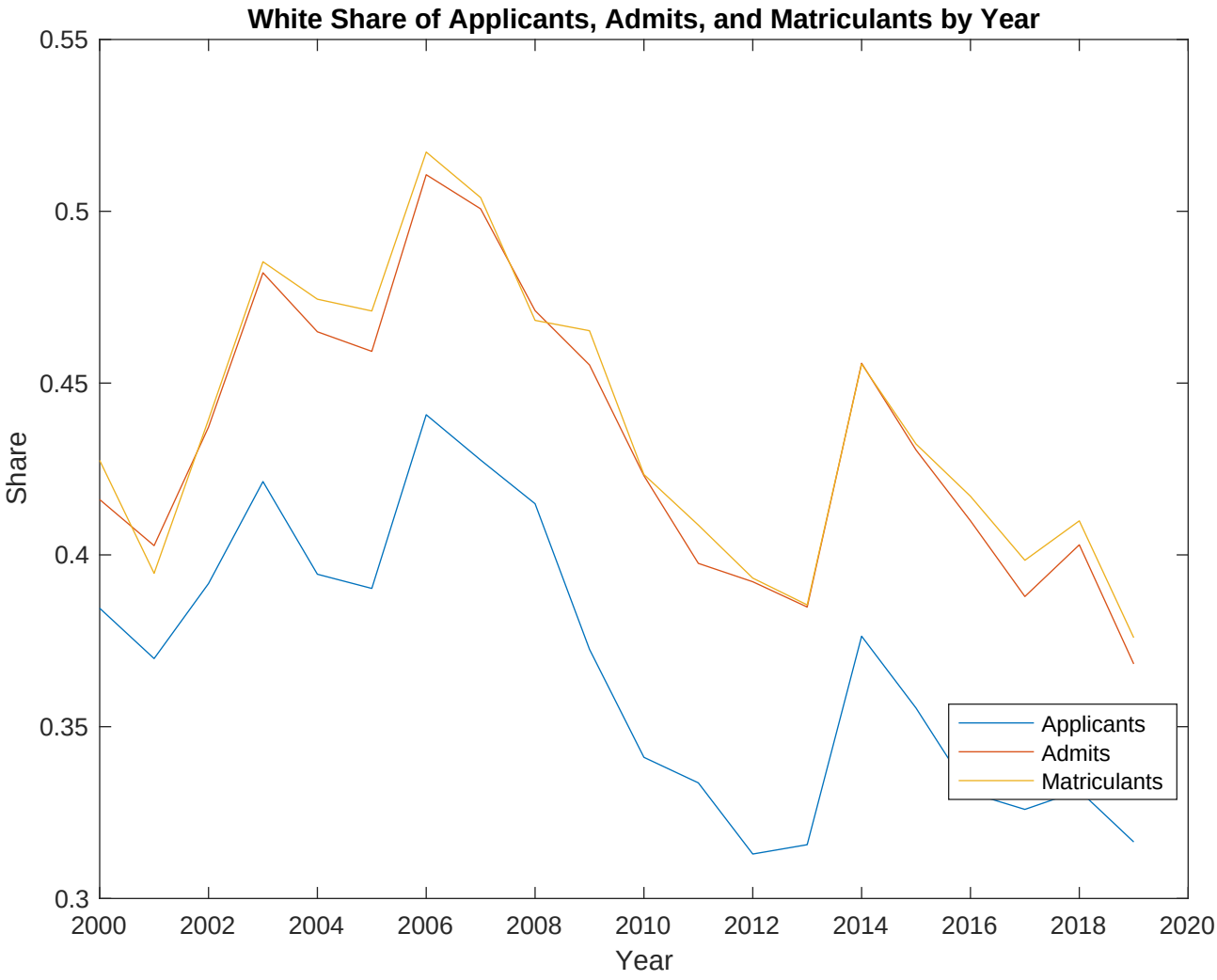

White Share of Applicants, Admits, and Matriculants by Year
Share
Year
0.55
0.5
0.45
0.4
0.35
0.3
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018
2020
Applicants
Admits
Matriculants

Table B.1.1: Single-race African-American admit rates and all other domestic admit rates by admissions cycle

		IPEDS		Mimic IPEDS	
		Admit Rate	Admit Total	Admit Rate	Admit Total
2019	Non-African American	0.06084	1,677	0.06085	1,677
	African-American	0.06059	176	0.06042	176
	Difference	0.00025	1,853	0.00043	1,853
2018	Non-African American	0.06521	1,657	0.06519	1,656
	African American	0.06585	177	0.06602	178
	Difference	-0.00064	1,834	-0.00083	1,834
2017	Non-African American	0.06424	1,665	0.06425	1,665
	African-American	0.06399	172	0.06394	172
	Difference	0.00025	1,837	0.00031	1,837
2016	Non-African American			0.06765	1,713
	African-American			0.05541	147
	Difference			0.01224	1,860
2015	Non-African American			0.06833	1,779
	African-American			0.06519	189
	Difference			0.00313	1,968
2014	Non-African American			0.07934	1,835
	African-American			0.07473	176
	Difference			0.00461	2,011

Table B.1.2: Admit rates for single-race African Americans and other domestic applicants by date, 2017

Date	Single-race African American admits	All other domestic admits	Single-race African American applicants	All other domestic applicants	Single-race African American admit rate	All other domestic admit rate	Single-race African American admit rate-Other domestic admit rate
3/1/13	136	845	1552	8774	0.16095	0.17689	-0.0159395
3/2/13	137	2688	1556	25918	0.05097	0.06004	-0.0090682
3/3/13	137	2688	1556	25918	0.05097	0.06004	-0.0090682
3/4/13	140	2688	1597	25918	0.05208	0.06162	-0.0095341
3/5/13	143	2688	1618	25918	0.05320	0.06243	-0.0092283
3/6/13	146	2688	1653	25918	0.05432	0.06378	-0.0094626
3/7/13	151	2688	1679	25918	0.05618	0.06478	-0.0086056
3/8/13	161	2688	1719	25918	0.05990	0.06632	-0.0064287
3/9/13	162	2688	1727	25918	0.06027	0.06663	-0.0063654
3/10/13	162	2688	1727	25918	0.06027	0.06663	-0.0063654
3/11/13	166	2688	1758	25918	0.06176	0.06783	-0.0060734
3/12/13	173	2688	1779	25918	0.06436	0.06864	-0.0042794
3/13/13	177	2688	1785	25918	0.06585	0.06887	-0.0030228
3/15/13	171	2688	1702	25918	0.06362	0.06567	-0.0020526
3/16/13	171	2688	1702	25918	0.06362	0.06567	-0.0020526
3/17/13	171	2688	1702	25918	0.06362	0.06567	-0.0020526
3/18/13	167	2688	1586	25918	0.06213	0.06119	0.0009350
3/19/13	172	2688	1650	25918	0.06399	0.06366	0.0003258
3/20/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
3/21/13	172	2688	1650	25918	0.06399	0.06366	0.0003258
3/22/13	172	2688	1650	25918	0.06399	0.06366	0.0003258
3/23/13	172	2688	1650	25918	0.06399	0.06366	0.0003258
3/24/13	172	2688	1650	25918	0.06399	0.06366	0.0003258
3/25/13	172	2688	1650	25918	0.06399	0.06366	0.0003258
3/26/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
3/27/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
3/28/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
3/29/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
3/30/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
3/31/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/1/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/2/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/3/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/4/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/5/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/6/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/7/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/8/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/9/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/10/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/11/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/12/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/13/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/14/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/15/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/16/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/17/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/18/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/19/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/20/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/21/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/22/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/23/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/24/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/25/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/26/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/27/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/28/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/29/13	172	2688	1648	25918	0.06399	0.06359	0.0004029
4/30/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
5/1/13	172	2688	1650	25918	0.06399	0.06366	0.0003258
5/2/13	172	2688	1650	25918	0.06399	0.06366	0.0003258
5/3/13	172	2688	1650	25918	0.06399	0.06366	0.0003258
5/6/13	172	2688	1650	25918	0.06399	0.06366	0.0003258
5/7/13	172	2688	1652	25918	0.06399	0.06374	0.0002486
5/8/13	172	2688	1652	25918	0.06399	0.06374	0.0002486
5/9/13	**172**	**2688**	**1654**	**25918**	**0.06399**	**0.06382**	**0.0001714**
5/10/13	**172**	**2688**	**1657**	**25918**	**0.06399**	**0.06393**	**0.0000557**
5/13/13	**172**	**2688**	**1658**	**25918**	**0.06399**	**0.06397**	**0.0000171**
5/14/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
5/15/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
5/16/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
5/17/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
5/20/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
5/21/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
5/22/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
5/23/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
5/24/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
5/27/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
5/28/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
5/29/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
5/30/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
5/31/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
6/2/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
6/3/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
6/4/13	172	2688	1649	25918	0.06399	0.06362	0.0003644
6/5/13	172	2688	1662	25918	0.06399	0.06413	-0.0001372
6/6/13	**172**	**2688**	**1659**	**25918**	**0.06399**	**0.06401**	**-0.0000215**
6/7/13	**172**	**2688**	**1659**	**25918**	**0.06399**	**0.06401**	**-0.0000215**
6/10/13	**172**	**2688**	**1659**	**25918**	**0.06399**	**0.06401**	**-0.0000215**
6/11/13	**172**	**2688**	**1659**	**25918**	**0.06399**	**0.06401**	**-0.0000215**
6/12/13	**172**	**2688**	**1659**	**25918**	**0.06399**	**0.06401**	**-0.0000215**
6/13/13	**172**	**2688**	**1659**	**25918**	**0.06399**	**0.06401**	**-0.0000215**
6/14/13	**172**	**2688**	**1659**	**25918**	**0.06399**	**0.06401**	**-0.0000215**
6/16/13	**172**	**2688**	**1659**	**25918**	**0.06399**	**0.06401**	**-0.0000215**
6/17/13	**172**	**2688**	**1659**	**25918**	**0.06399**	**0.06401**	**-0.0000215**
6/18/13	**172**	**2688**	**1659**	**25918**	**0.06399**	**0.06401**	**-0.0000215**
6/20/13	**172**	**2688**	**1659**	**25918**	**0.06399**	**0.06401**	**-0.0000215**
6/24/13	**172**	**2688**	**1659**	**25918**	**0.06399**	**0.06401**	**-0.0000215**
6/25/13	**172**	**2688**	**1659**	**25918**	**0.06399**	**0.06401**	**-0.0000215**
6/26/13	**172**	**2688**	**1659**	**25918**	**0.06399**	**0.06401**	**-0.0000215**
6/27/13	172	2688	1662	25918	0.06399	0.06413	-0.0001372
6/28/13	172	2688	1662	25918	0.06399	0.06413	-0.0001372
6/29/13	172	2688	1662	25918	0.06399	0.06413	-0.0001372
6/30/13	172	2688	1662	25918	0.06399	0.06413	-0.0001372
7/1/13	172	2688	1663	25918	0.06399	0.06416	-0.0001758
7/3/13	172	2688	1663	25918	0.06399	0.06416	-0.0001758
7/5/13	172	2688	1663	25918	0.06399	0.06416	-0.0001758
7/6/13	172	2688	1663	25918	0.06399	0.06416	-0.0001758
7/8/13	172	2688	1663	25918	0.06399	0.06416	-0.0001758
7/9/13	172	2688	1663	25918	0.06399	0.06416	-0.0001758
7/11/13	172	2688	1663	25918	0.06399	0.06416	-0.0001758
7/22/13	172	2688	1663	25918	0.06399	0.06416	-0.0001758
7/24/13	172	2688	1666	25918	0.06399	0.06428	-0.0002916
7/25/13	172	2688	1666	25918	0.06399	0.06428	-0.0002916
7/26/13	172	2688	1666	25918	0.06399	0.06428	-0.0002916
7/30/13	172	2688	1666	25918	0.06399	0.06428	-0.0002916
8/5/13	172	2688	1666	25918	0.06399	0.06428	-0.0002916
8/6/13	172	2688	1666	25918	0.06399	0.06428	-0.0002916
8/16/13	172	2688	1666	25918	0.06399	0.06428	-0.0002916
8/19/13	172	2688	1666	25918	0.06399	0.06428	-0.0002916
8/26/13	172	2688	1666	25918	0.06399	0.06428	-0.0002916
8/29/13	172	2688	1665	25918	0.06399	0.06424	-0.0002530

*Bolded rows indicate the difference between the two admit rates is minimized given the number of applicants of each race and the total number of admits

Table B.1.3: Admit rates for single-race African Americans and other domestic applicants by date, 2018

Date	Single-race African American admits	All other domestic admits	Single-race African American applicants	All other domestic applicants	Single-race African American admit rate	All other domestic admit rate	Single-race African American admit rate-Other domestic admit rate
3/1/14	159	1600	826	7931	0.19249	0.20174	-0.0092461
3/2/14	159	1600	2688	25411	0.05915	0.06296	-0.0038131
3/3/14	160	1608	2688	25411	0.05952	0.06328	-0.0037559
3/4/14	164	1632	2688	25411	0.06101	0.06422	-0.0032123
3/5/14	168	1658	2688	25411	0.06250	0.06525	-0.0027473
3/6/14	170	1684	2688	25411	0.06324	0.06627	-0.0030265
3/7/14	172	1707	2688	25411	0.06399	0.06718	-0.0031875
3/8/14	172	1711	2688	25411	0.06399	0.06733	-0.0033449
3/9/14	172	1711	2688	25411	0.06399	0.06733	-0.0033449
3/10/14	177	1745	2688	25411	0.06585	0.06867	-0.0028228
3/11/14	187	1792	2688	25411	0.06957	0.07052	-0.0009522
3/12/14	188	1808	2688	25411	0.06994	0.07115	-0.0012098
3/13/14	188	1824	2688	25411	0.06994	0.07178	-0.0018395
3/14/14	190	1826	2688	25411	0.07068	0.07186	-0.0011741
3/15/14	190	1826	2688	25411	0.07068	0.07186	-0.0011741
3/16/14	190	1826	2688	25411	0.07068	0.07186	-0.0011741
3/17/14	179	1659	2688	25411	0.06659	0.06529	0.0013056
3/18/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
3/19/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
3/20/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
3/21/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
3/22/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
3/23/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
3/24/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
3/25/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
3/26/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
3/27/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
3/28/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
3/29/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
3/30/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
3/31/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/1/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/2/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/3/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/4/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/5/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/6/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/7/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/8/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/9/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/10/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/11/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/12/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/13/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/14/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/15/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/16/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/17/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/18/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/19/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/20/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/21/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/22/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/23/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/24/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/25/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/26/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/27/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/28/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/29/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
4/30/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
5/1/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
5/2/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
5/3/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
5/4/14	178	1633	2688	25411	0.06622	0.06426	0.0019567
5/5/14	178	1632	2688	25411	0.06622	0.06422	0.0019961
5/6/14	178	1631	2688	25411	0.06622	0.06418	0.0020354
5/7/14	178	1631	2688	25411	0.06622	0.06418	0.0020354
5/8/14	178	1634	2688	25411	0.06622	0.06430	0.0019174
5/9/14	178	1640	2688	25411	0.06622	0.06454	0.0016813
5/12/14	178	1643	2688	25411	0.06622	0.06466	0.0015632
5/13/14	178	1644	2688	25411	0.06622	0.06470	0.0015238
5/14/14	178	1644	2688	25411	0.06622	0.06470	0.0015238
5/15/14	178	1644	2688	25411	0.06622	0.06470	0.0015238
5/16/14	178	1644	2688	25411	0.06622	0.06470	0.0015238
5/17/14	178	1644	2688	25411	0.06622	0.06470	0.0015238
5/18/14	178	1644	2688	25411	0.06622	0.06470	0.0015238
5/19/14	178	1644	2688	25411	0.06622	0.06470	0.0015238
5/20/14	178	1644	2688	25411	0.06622	0.06470	0.0015238
5/21/14	178	1644	2688	25411	0.06622	0.06470	0.0015238
5/22/14	178	1654	2688	25411	0.06622	0.06509	0.0011303
5/23/14	178	1654	2688	25411	0.06622	0.06509	0.0011303
5/24/14	178	1654	2688	25411	0.06622	0.06509	0.0011303
5/26/14	178	1654	2688	25411	0.06622	0.06509	0.0011303
5/27/14	178	1654	2688	25411	0.06622	0.06509	0.0011303
5/28/14	178	1654	2688	25411	0.06622	0.06509	0.0011303
5/29/14	178	1654	2688	25411	0.06622	0.06509	0.0011303
5/30/14	178	1654	2688	25411	0.06622	0.06509	0.0011303
6/2/14	178	1654	2688	25411	0.06622	0.06509	0.0011303
6/3/14	178	1654	2688	25411	0.06622	0.06509	0.0011303
6/4/14	178	1654	2688	25411	0.06622	0.06509	0.0011303
6/5/14	178	1654	2688	25411	0.06622	0.06509	0.0011303
6/9/14	178	1654	2688	25411	0.06622	0.06509	0.0011303
6/10/14	178	1654	2688	25411	0.06622	0.06509	0.0011303
6/11/14	178	1658	2688	25411	0.06622	0.06525	0.0009729
6/12/14	178	1658	2688	25411	0.06622	0.06525	0.0009729
6/13/14	178	1658	2688	25411	0.06622	0.06525	0.0009729
6/15/14	178	1658	2688	25411	0.06622	0.06525	0.0009729
6/16/14	178	1658	2688	25411	0.06622	0.06525	0.0009729
6/17/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
6/18/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
6/19/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
6/20/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
6/21/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
6/22/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
6/23/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
6/24/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
6/25/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
6/26/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
6/29/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
7/1/14	178	1660	2688	25411	0.06622	0.06533	0.0008942
7/2/14	178	1660	2688	25411	0.06622	0.06533	0.0008942
7/3/14	178	1660	2688	25411	0.06622	0.06533	0.0008942
7/4/14	178	1660	2688	25411	0.06622	0.06533	0.0008942
7/7/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
7/8/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
7/9/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
7/11/14	178	1659	2688	25411	0.06622	0.06529	0.0009336
7/17/14	178	1658	2688	25411	0.06622	0.06525	0.0009729
7/23/14	178	1658	2688	25411	0.06622	0.06525	0.0009729
7/28/14	178	1658	2688	25411	0.06622	0.06525	0.0009729
8/15/14	178	1658	2688	25411	0.06622	0.06525	0.0009729
8/24/14	178	1657	2688	25411	0.06622	0.06521	0.0010123
8/25/14	178	1657	2688	25411	0.06622	0.06521	0.0010123
8/26/14	178	1657	2688	25411	0.06622	0.06521	0.0010123
8/27/14	177	1657	2688	25411	0.06585	0.06521	0.0006402

Table B.1.4: Admit rates for single-race African Americans and other domestic applicants by date, 2019

Date	Single-race African American admits	All other domestic admits	Single-race African American applicants	All other domestic applicants	Single-race African American admit rate	All other domestic admit rate	Single-race African American admit rate-Other domestic admit rate
3/1/15	153	1521	2899	27520	0.05278	0.05527	-0.0024921
3/2/15	153	1520	2899	27520	0.05278	0.05523	-0.0024557
3/4/15	153	1519	2899	27520	0.05278	0.05520	-0.0024194
3/6/15	153	1519	2899	27520	0.05278	0.05520	-0.0024194
3/8/15	153	1519	2899	27520	0.05278	0.05520	-0.0024194
3/9/15	153	1529	2899	27530	0.05278	0.05554	-0.0027626
3/10/15	153	1530	2899	27531	0.05278	0.05557	-0.0027969
3/11/15	153	1530	2899	27531	0.05278	0.05557	-0.0027969
3/12/15	153	1530	2899	27531	0.05278	0.05557	-0.0027969
3/13/15	153	1531	2899	27532	0.05278	0.05561	-0.0028312
3/14/15	192	1785	2904	27556	0.06612	0.06478	0.0013385
3/16/15	192	1784	2904	27556	0.06612	0.06474	0.0013748
3/17/15	192	1784	2904	27556	0.06612	0.06474	0.0013748
3/18/15	177	1651	2905	27565	0.06093	0.05989	0.0010346
3/19/15	171	1581	2905	27565	0.05886	0.05736	0.0015087
3/20/15	176	1600	2905	27565	0.06059	0.05804	0.0025406
3/23/15	176	1600	2905	27565	0.06059	0.05804	0.0025406
3/24/15	176	1600	2905	27565	0.06059	0.05804	0.0025406
3/25/15	176	1600	2905	27566	0.06059	0.05804	0.0025427
3/26/15	176	1600	2905	27566	0.06059	0.05804	0.0025427
3/30/15	176	1600	2905	27566	0.06059	0.05804	0.0025427
3/31/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/1/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/2/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/3/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/5/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/6/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/7/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/8/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/9/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/10/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/12/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/13/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/14/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/15/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/16/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/17/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/20/15	177	1600	2905	27566	0.06093	0.05804	0.0028869
4/21/15	177	1599	2905	27566	0.06093	0.05801	0.0029232
4/22/15	177	1599	2905	27566	0.06093	0.05801	0.0029232
4/24/15	177	1599	2905	27566	0.06093	0.05801	0.0029232
4/27/15	177	1599	2905	27566	0.06093	0.05801	0.0029232
4/28/15	176	1597	2905	27566	0.06059	0.05793	0.0026515
4/29/15	176	1597	2905	27566	0.06059	0.05793	0.0026515
4/30/15	176	1597	2905	27566	0.06059	0.05793	0.0026515
5/1/15	176	1597	2905	27566	0.06059	0.05793	0.0026515
5/2/15	176	1597	2905	27566	0.06059	0.05793	0.0026515
5/4/15	176	1597	2905	27566	0.06059	0.05793	0.0026515
5/5/15	176	1597	2905	27566	0.06059	0.05793	0.0026515
5/7/15	176	1597	2905	27566	0.06059	0.05793	0.0026515
5/11/15	176	1597	2905	27566	0.06059	0.05793	0.0026515
5/12/15	176	1597	2905	27566	0.06059	0.05793	0.0026515
5/14/15	176	1645	2905	27566	0.06059	0.05967	0.0009102
5/15/15	176	1645	2905	27566	0.06059	0.05967	0.0009102
5/18/15	176	1645	2905	27566	0.06059	0.05967	0.0009102
5/19/15	176	1645	2905	27566	0.06059	0.05967	0.0009102
5/20/15	176	1645	2905	27566	0.06059	0.05967	0.0009102
5/21/15	176	1645	2905	27566	0.06059	0.05967	0.0009102
5/22/15	176	1645	2905	27566	0.06059	0.05967	0.0009102
5/26/15	176	1645	2905	27566	0.06059	0.05967	0.0009102
5/27/15	176	1645	2905	27566	0.06059	0.05967	0.0009102
5/28/15	176	1645	2905	27566	0.06059	0.05967	0.0009102
6/1/15	176	1645	2905	27566	0.06059	0.05967	0.0009102
6/2/15	176	1645	2905	27566	0.06059	0.05967	0.0009102
6/3/15	176	1663	2905	27566	0.06059	0.06033	0.0002573
6/4/15	176	1662	2905	27566	0.06059	0.06029	0.0002935
6/5/15	176	1662	2905	27566	0.06059	0.06029	0.0002935
6/8/15	176	1662	2905	27566	0.06059	0.06029	0.0002935
6/9/15	176	1667	2905	27566	0.06059	0.06047	0.0001121
6/10/15	**176**	**1668**	**2905**	**27566**	**0.06059**	**0.06051**	**0.0000759**
6/11/15	**176**	**1668**	**2905**	**27566**	**0.06059**	**0.06051**	**0.0000759**
6/15/15	**176**	**1668**	**2905**	**27566**	**0.06059**	**0.06051**	**0.0000759**
6/16/15	**176**	**1668**	**2905**	**27566**	**0.06059**	**0.06051**	**0.0000759**
6/17/15	**176**	**1668**	**2905**	**27566**	**0.06059**	**0.06051**	**0.0000759**
6/19/15	**176**	**1668**	**2905**	**27566**	**0.06059**	**0.06051**	**0.0000759**
6/22/15	**176**	**1668**	**2905**	**27566**	**0.06059**	**0.06051**	**0.0000759**
6/23/15	**176**	**1668**	**2905**	**27566**	**0.06059**	**0.06051**	**0.0000759**
6/30/15	176	1678	2905	27566	0.06059	0.06087	-0.0002869
7/2/15	176	1678	2905	27566	0.06059	0.06087	-0.0002869
7/6/15	176	1678	2905	27566	0.06059	0.06087	-0.0002869
7/7/15	176	1678	2905	27566	0.06059	0.06087	-0.0002869
7/8/15	176	1678	2905	27566	0.06059	0.06087	-0.0002869
7/10/15	176	1678	2905	27566	0.06059	0.06087	-0.0002869
7/13/15	176	1678	2905	27566	0.06059	0.06087	-0.0002869
8/3/15	176	1678	2905	27566	0.06059	0.06087	-0.0002869
8/17/15	176	1678	2905	27566	0.06059	0.06087	-0.0002869
8/19/15	176	1678	2905	27566	0.06059	0.06087	-0.0002869
8/24/15	176	1678	2905	27566	0.06059	0.06087	-0.0002869

Table B.1.5: Admit rates for single-race African Americans and other domestic applicants by date, 2014 (pre-IPEDS)

Date	Single-race African American admits	All other domestic admits	Single-race African American applicants	All other domestic applicants	Single-race African American admit rate	All other domestic admit rate	Single-race African American admit rate-Other domestic admit rate
3/1/10	129	1523	2251	22467	0.05731	0.06779	-0.0104804
3/2/10	130	1594	2354	23126	0.05523	0.06893	-0.0137016
3/3/10	132	1615	2354	23126	0.05607	0.06983	-0.0137601
3/4/10	132	1634	2354	23126	0.05607	0.07066	-0.0145816
3/5/10	146	1677	2354	23126	0.06202	0.07252	-0.0104937
3/6/10	147	1677	2354	23126	0.06245	0.07252	-0.0100689
3/8/10	157	1757	2354	23126	0.06669	0.07598	-0.0092801
3/9/10	160	1796	2354	23126	0.06797	0.07766	-0.0096921
3/10/10	162	1808	2354	23126	0.06882	0.07818	-0.0093614
3/11/10	175	1851	2354	23126	0.07434	0.08004	-0.0056982
3/12/10	184	1870	2354	23126	0.07816	0.08086	-0.0026965
3/13/10	188	1890	2354	23126	0.07986	0.08173	-0.0018621
3/15/10	187	1906	2354	23126	0.07944	0.08242	-0.0029788
3/16/10	187	1907	2354	23126	0.07944	0.08246	-0.0030220
3/17/10	187	1922	2355	23125	0.07941	0.08311	-0.0037080
3/18/10	172	1799	2355	23125	0.07304	0.07779	-0.0047585
3/19/10	168	1714	2355	23125	0.07134	0.07412	-0.0027813
3/20/10	173	1751	2355	23125	0.07346	0.07572	-0.0022582
3/21/10	173	1751	2355	23125	0.07346	0.07572	-0.0022582
3/22/10	173	1751	2355	23125	0.07346	0.07572	-0.0022582
3/23/10	174	1751	2355	23125	0.07389	0.07572	-0.0018336
3/24/10	174	1751	2355	23125	0.07389	0.07572	-0.0018336
3/25/10	174	1751	2355	23125	0.07389	0.07572	-0.0018336
3/26/10	174	1751	2355	23125	0.07389	0.07572	-0.0018336
3/29/10	174	1751	2355	23125	0.07389	0.07572	-0.0018336
3/30/10	174	1749	2355	23124	0.07389	0.07564	-0.0017503
3/31/10	174	1749	2355	23124	0.07389	0.07564	-0.0017503
4/1/10	174	1749	2355	23125	0.07389	0.07563	-0.0017471
4/6/10	174	1749	2355	23126	0.07389	0.07563	-0.0017438
4/7/10	174	1750	2355	23127	0.07389	0.07567	-0.0017838
4/12/10	174	1750	2355	23128	0.07389	0.07567	-0.0017805
4/14/10	174	1750	2355	23128	0.07389	0.07567	-0.0017805
4/15/10	174	1750	2355	23128	0.07389	0.07567	-0.0017805
4/28/10	174	1750	2355	23128	0.07389	0.07567	-0.0017805
4/29/10	174	1750	2355	23128	0.07389	0.07567	-0.0017805
4/30/10	174	1750	2355	23128	0.07389	0.07567	-0.0017805
5/3/10	174	1750	2355	23128	0.07389	0.07567	-0.0017805
5/4/10	174	1752	2355	23128	0.07389	0.07575	-0.0018670
5/5/10	174	1750	2355	23128	0.07389	0.07567	-0.0017805
5/6/10	174	1750	2355	23128	0.07389	0.07567	-0.0017805
5/7/10	174	1750	2355	23128	0.07389	0.07567	-0.0017805
5/10/10	174	1750	2355	23128	0.07389	0.07567	-0.0017805
5/11/10	174	1769	2355	23128	0.07389	0.07649	-0.0026020
5/12/10	175	1797	2355	23128	0.07431	0.07770	-0.0033880
5/13/10	175	1797	2355	23128	0.07431	0.07770	-0.0033880
5/14/10	175	1797	2355	23127	0.07431	0.07770	-0.0033914
5/17/10	175	1797	2355	23127	0.07431	0.07770	-0.0033914
5/18/10	175	1797	2355	23128	0.07431	0.07770	-0.0033880
5/19/10	175	1797	2355	23128	0.07431	0.07770	-0.0033880
5/26/10	175	1798	2355	23128	0.07431	0.07774	-0.0034313
6/1/10	175	1799	2355	23128	0.07431	0.07778	-0.0034745
6/2/10	175	1799	2355	23128	0.07431	0.07778	-0.0034745
6/3/10	175	1817	2355	23128	0.07431	0.07856	-0.0042528
6/4/10	175	1817	2355	23128	0.07431	0.07856	-0.0042528
6/8/10	175	1817	2355	23128	0.07431	0.07856	-0.0042528
6/18/10	175	1817	2355	23128	0.07431	0.07856	-0.0042528
6/25/10	176	1832	2355	23128	0.07473	0.07921	-0.0044767
6/28/10	176	1831	2355	23128	0.07473	0.07917	-0.0044335
6/29/10	176	1831	2355	23128	0.07473	0.07917	-0.0044335
7/1/10	176	1831	2355	23128	0.07473	0.07917	-0.0044335
7/22/10	176	1833	2355	23128	0.07473	0.07925	-0.0045200
7/30/10	176	1834	2355	23128	0.07473	0.07930	-0.0045632
8/2/10	176	1835	2355	23128	0.07473	0.07934	-0.0046065
8/4/10	176	1834	2355	23128	0.07473	0.07930	-0.0045632
8/9/10	176	1836	2355	23128	0.07473	0.07938	-0.0046497
8/11/10	176	1836	2355	23128	0.07473	0.07938	-0.0046497
8/17/10	176	1835	2355	23128	0.07473	0.07934	-0.0046065

Table B.1.6: Admit rates for single-race African Americans and other domestic applicants by date, 2015 (pre-IPEDs)

Date	Single-race African American admits	All other domestic admits	Single-race African American applicants	All other domestic applicants	Single-race African American admit rate	All other domestic admit rate	Single-race African American admit rate-Other domestic admit rate
3/2/11	178	1611	2899	26033	0.06140	0.06188	-0.0004825
3/3/11	176	1612	2899	26033	0.06071	0.06192	-0.0012108
3/4/11	178	1676	2899	26033	0.06140	0.06438	-0.0029793
3/5/11	177	1682	2899	26033	0.06106	0.06461	-0.0035548
3/6/11	177	1682	2899	26033	0.06106	0.06461	-0.0035548
3/7/11	183	1730	2899	26033	0.06313	0.06645	-0.0033289
3/8/11	192	1794	2899	26033	0.06623	0.06891	-0.0026828
3/9/11	202	1846	2899	26033	0.06968	0.07091	-0.0012308
3/10/11	201	1880	2899	26033	0.06933	0.07222	-0.0028818
3/11/11	202	1942	2899	26033	0.06968	0.07460	-0.0049184
3/12/11	206	1964	2899	26033	0.07106	0.07544	-0.0043837
3/14/11	208	1988	2899	26033	0.07175	0.07636	-0.0046157
3/15/11	210	2003	2899	26033	0.07244	0.07694	-0.0045020
3/16/11	211	2009	2899	26033	0.07278	0.07717	-0.0043876
3/17/11	197	1874	2899	26033	0.06795	0.07199	-0.0040311
3/18/11	187	1747	2899	26034	0.06451	0.06710	-0.0025996
3/19/11	189	1746	2899	26034	0.06519	0.06707	-0.0018713
3/20/11	189	1746	2899	26034	0.06519	0.06707	-0.0018713
3/21/11	189	1746	2899	26034	0.06519	0.06707	-0.0018713
3/22/11	189	1747	2899	26034	0.06519	0.06710	-0.0019097
3/23/11	189	1747	2899	26035	0.06519	0.06710	-0.0019071
3/24/11	189	1749	2899	26035	0.06519	0.06718	-0.0019839
3/25/11	189	1750	2899	26035	0.06519	0.06722	-0.0020223
3/28/11	189	1750	2899	26037	0.06519	0.06721	-0.0020171
3/29/11	189	1749	2899	26037	0.06519	0.06717	-0.0019787
3/30/11	189	1750	2899	26037	0.06519	0.06721	-0.0020171
4/8/11	189	1750	2899	26037	0.06519	0.06721	-0.0020171
4/28/11	189	1748	2899	26037	0.06519	0.06714	-0.0019403
5/4/11	189	1754	2899	26037	0.06519	0.06737	-0.0021708
5/5/11	189	1756	2899	26037	0.06519	0.06744	-0.0022476
5/6/11	189	1760	2899	26037	0.06519	0.06760	-0.0024012
5/9/11	189	1764	2899	26037	0.06519	0.06775	-0.0025548
5/10/11	189	1764	2899	26037	0.06519	0.06775	-0.0025548
5/11/11	189	1768	2899	26037	0.06519	0.06790	-0.0027085
5/12/11	189	1759	2899	26037	0.06519	0.06756	-0.0023628
5/13/11	189	1759	2899	26037	0.06519	0.06756	-0.0023628
5/16/11	189	1759	2899	26037	0.06519	0.06756	-0.0023628
5/17/11	189	1759	2899	26037	0.06519	0.06756	-0.0023628
5/19/11	189	1759	2899	26037	0.06519	0.06756	-0.0023628
5/31/11	189	1768	2899	26037	0.06519	0.06790	-0.0027085
6/1/11	189	1767	2899	26037	0.06519	0.06786	-0.0026701
6/2/11	189	1767	2899	26037	0.06519	0.06786	-0.0026701
6/3/11	189	1767	2899	26037	0.06519	0.06786	-0.0026701
6/6/11	189	1767	2899	26037	0.06519	0.06786	-0.0026701
6/14/11	189	1777	2899	26037	0.06519	0.06825	-0.0030541
6/16/11	189	1774	2899	26037	0.06519	0.06813	-0.0029389
6/17/11	189	1774	2899	26037	0.06519	0.06813	-0.0029389
6/20/11	189	1774	2899	26037	0.06519	0.06813	-0.0029389
6/21/11	189	1774	2899	26037	0.06519	0.06813	-0.0029389
6/22/11	189	1774	2899	26037	0.06519	0.06813	-0.0029389
6/23/11	189	1774	2899	26037	0.06519	0.06813	-0.0029389
6/24/11	189	1774	2899	26037	0.06519	0.06813	-0.0029389
6/25/11	189	1774	2899	26037	0.06519	0.06813	-0.0029389
6/26/11	189	1774	2899	26037	0.06519	0.06813	-0.0029389
6/27/11	189	1774	2899	26037	0.06519	0.06813	-0.0029389
6/28/11	189	1778	2899	26037	0.06519	0.06829	-0.0030925
6/29/11	189	1779	2899	26037	0.06519	0.06833	-0.0031310
6/30/11	189	1779	2899	26037	0.06519	0.06833	-0.0031310
7/1/11	189	1779	2899	26037	0.06519	0.06833	-0.0031310
7/2/11	189	1779	2899	26037	0.06519	0.06833	-0.0031310
7/5/11	189	1779	2899	26037	0.06519	0.06833	-0.0031310
7/6/11	189	1779	2899	26037	0.06519	0.06833	-0.0031310
7/8/11	189	1779	2899	26037	0.06519	0.06833	-0.0031310
7/18/11	189	1779	2899	26037	0.06519	0.06833	-0.0031310
7/22/11	189	1779	2899	26037	0.06519	0.06833	-0.0031310
8/5/11	189	1779	2899	26037	0.06519	0.06833	-0.0031310
8/15/11	189	1779	2899	26037	0.06519	0.06833	-0.0031310
8/18/11	189	1779	2899	26037	0.06519	0.06833	-0.0031310
8/29/11	189	1779	2899	26037	0.06519	0.06833	-0.0031310

Table B.1.7: Admit rates for single-race African Americans and other domestic applicants by date, 2016 (pre-IPEDS)

Date	Single-race African American admits	All other domestic admits	Single-race African American applicants	All other domestic applicants	Single-race African American admit rate	All other domestic admit rate	Single-race African American admit rate-Other domestic admit rate
3/1/12	142	1600	2574	24870	0.05517	0.06433	-0.0091675
3/2/12	142	1594	2574	24874	0.05517	0.06408	-0.0089159
3/3/12	140	1569	2574	24874	0.05439	0.06308	-0.0086879
3/4/12	140	1569	2574	24875	0.05439	0.06308	-0.0086853
3/5/12	141	1611	2652	25322	0.05317	0.06362	-0.0104531
3/6/12	144	1641	2652	25322	0.05430	0.06481	-0.0105067
3/7/12	144	1657	2652	25321	0.05430	0.06544	-0.0111411
3/8/12	147	1677	2652	25321	0.05543	0.06623	-0.0107997
3/9/12	150	1713	2652	25321	0.05656	0.06765	-0.0110903
3/10/12	152	1753	2652	25321	0.05732	0.06923	-0.0119158
3/11/12	152	1753	2652	25321	0.05732	0.06923	-0.0119158
3/12/12	153	1775	2652	25321	0.05769	0.07010	-0.0124076
3/13/12	157	1802	2652	25321	0.05920	0.07117	-0.0119656
3/14/12	162	1807	2652	25321	0.06109	0.07136	-0.0102777
3/15/12	166	1844	2652	25321	0.06259	0.07282	-0.0102307
3/16/12	168	1860	2652	25321	0.06335	0.07346	-0.0101084
3/17/12	163	1779	2652	25321	0.06146	0.07026	-0.0087948
3/18/12	163	1779	2652	25321	0.06146	0.07026	-0.0087948
3/19/12	148	1661	2652	25321	0.05581	0.06560	-0.0097908
3/20/12	147	1675	2652	25321	0.05543	0.06615	-0.0107208
3/21/12	147	1673	2652	25321	0.05543	0.06607	-0.0106418
3/22/12	147	1673	2652	25321	0.05543	0.06607	-0.0106418
3/23/12	147	1673	2653	25321	0.05541	0.06607	-0.0106627
3/24/12	147	1673	2653	25321	0.05541	0.06607	-0.0106627
3/25/12	147	1673	2653	25321	0.05541	0.06607	-0.0106627
3/26/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
3/27/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
3/28/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
3/29/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
3/30/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
3/31/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/1/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/2/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/3/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/4/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/5/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/6/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/7/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/8/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/9/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/10/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/11/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/12/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/13/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/14/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/15/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/16/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/17/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/18/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/19/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/20/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/21/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/22/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/23/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/24/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/25/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/26/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/27/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/28/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/29/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
4/30/12	147	1673	2653	25322	0.05541	0.06607	-0.0106601
5/1/12	147	1672	2653	25322	0.05541	0.06603	-0.0106206
5/2/12	147	1672	2653	25322	0.05541	0.06603	-0.0106206
5/3/12	147	1671	2653	25322	0.05541	0.06599	-0.0105811
5/4/12	147	1671	2653	25322	0.05541	0.06599	-0.0105811
5/7/12	147	1671	2653	25322	0.05541	0.06599	-0.0105811
5/8/12	147	1671	2653	25322	0.05541	0.06599	-0.0105811
5/9/12	147	1671	2653	25322	0.05541	0.06599	-0.0105811
5/10/12	147	1688	2653	25322	0.05541	0.06666	-0.0112524
5/11/12	147	1701	2653	25322	0.05541	0.06717	-0.0117658
5/14/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/15/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/16/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/17/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/18/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/19/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/20/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/21/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/22/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/23/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/24/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/25/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/26/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/28/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/29/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/30/12	147	1692	2653	25322	0.05541	0.06682	-0.0114104
5/31/12	147	1708	2653	25322	0.05541	0.06745	-0.0120423
6/1/12	147	1702	2653	25322	0.05541	0.06721	-0.0118053
6/2/12	147	1702	2653	25322	0.05541	0.06721	-0.0118053
6/4/12	147	1702	2653	25322	0.05541	0.06721	-0.0118053
6/5/12	147	1702	2653	25322	0.05541	0.06721	-0.0118053
6/6/12	147	1702	2653	25322	0.05541	0.06721	-0.0118053
6/7/12	147	1702	2653	25322	0.05541	0.06721	-0.0118053
6/8/12	147	1702	2653	25322	0.05541	0.06721	-0.0118053
6/9/12	147	1702	2653	25322	0.05541	0.06721	-0.0118053
6/11/12	147	1702	2653	25322	0.05541	0.06721	-0.0118053
6/12/12	147	1707	2653	25322	0.05541	0.06741	-0.0120028
6/13/12	147	1707	2653	25322	0.05541	0.06741	-0.0120028
6/15/12	147	1707	2653	25322	0.05541	0.06741	-0.0120028
6/16/12	147	1707	2653	25322	0.05541	0.06741	-0.0120028
6/17/12	147	1707	2653	25322	0.05541	0.06741	-0.0120028
6/18/12	147	1707	2653	25322	0.05541	0.06741	-0.0120028
6/19/12	147	1707	2653	25322	0.05541	0.06741	-0.0120028
6/20/12	147	1707	2653	25322	0.05541	0.06741	-0.0120028
6/21/12	147	1707	2653	25322	0.05541	0.06741	-0.0120028
6/22/12	147	1707	2653	25322	0.05541	0.06741	-0.0120028
6/24/12	147	1707	2653	25322	0.05541	0.06741	-0.0120028
6/25/12	147	1707	2653	25322	0.05541	0.06741	-0.0120028
6/26/12	147	1711	2653	25322	0.05541	0.06757	-0.0121607
6/28/12	147	1711	2653	25322	0.05541	0.06757	-0.0121607
6/29/12	147	1711	2653	25322	0.05541	0.06757	-0.0121607
6/30/12	147	1711	2653	25322	0.05541	0.06757	-0.0121607
7/2/12	147	1711	2653	25322	0.05541	0.06757	-0.0121607
7/3/12	147	1713	2653	25322	0.05541	0.06765	-0.0122397
7/5/12	147	1713	2653	25322	0.05541	0.06765	-0.0122397
7/9/12	147	1713	2653	25322	0.05541	0.06765	-0.0122397
7/11/12	147	1713	2653	25322	0.05541	0.06765	-0.0122397
7/13/12	147	1713	2653	25322	0.05541	0.06765	-0.0122397
8/2/12	147	1713	2653	25322	0.05541	0.06765	-0.0122397
8/10/12	147	1713	2653	25322	0.05541	0.06765	-0.0122397
8/17/12	147	1713	2653	25322	0.05541	0.06765	-0.0122397
8/20/12	147	1713	2653	25322	0.05541	0.06765	-0.0122397

Table B.2.1: Admission Decisions by Race/Ethnicity and Year for the Baseline Dataset

	Admission Status			
Race	Rejected	Waitlist Rejected	Admit	Observations
2014				
White	81.4	12.1	6.5	9,506
African American	86.1	4.6	9.3*	2,257
Hispanic	85.8	7.5	6.7	2,581
Asian American	81.5	12.2	6.3	6,281
2015				
White	83.5	11.2	5.3	10,441
African American	87.0	5.1	7.9*	2,825
Hispanic	86.4	7.0	6.6*	3,146
Asian American	83.6	11.3	5.1	7,196
2016				
White	85.7	10.4	3.9	8,262
African American	89.3	5.7	5.1*	2,292
Hispanic	88.2	7.5	4.3	2,589
Asian American	85.5	10.8	3.8	5,626
2017				
White	87.6	9.1	3.2	8,059
African American	91.4	2.8	5.8*	2,270
Hispanic	89.2	5.9	4.9*	2,575
Asian American	87.4	9.6	3.0	5,542
2018				
White	86.1	11.0	2.9	8,229
African American	89.1	5.5	5.5*	2,306
Hispanic	86.2	9.0	4.9*	2,737
Asian American	86.0	11.6	2.4	6,177
2019				
White	86.6	10.8	2.6	8,051
African American	88.9	6.0	5.1*	2,394
Hispanic	88.6	7.4	4.0*	2,973
Asian American	85.2	12.0	2.8	5,991

A * indicates statistically different from the Asian-American admit rate at the 5% level
Constructed using results from basicFreqs.do

Table B.2.2: Admission Decisions by Race/Ethnicity and Year for the Expanded Dataset

	Admission Status			
Race	Rejected	Waitlist Rejected	Admit	Observations
2014				
White	77.2	13.1	9.7*	10,368
African American	84.7	4.9	10.4*	2,327
Hispanic	84.8	7.8	7.5	2,629
Asian American	80.8	12.4	6.8	6,402
2015				
White	79.2	12.7	8.1*	11,299
African American	86.2	5.2	8.6*	2,893
Hispanic	85.2	7.4	7.4*	3,216
Asian American	82.7	11.6	5.7	7,316
2016				
White	79.9	12.0	8.1*	10,277
African American	86.8	5.6	7.7*	2,677
Hispanic	85.5	8.1	6.3	2,983
Asian American	81.9	11.8	6.3	6,586
2017				
White	82.0	10.3	7.7*	10,119
African American	88.4	3.0	8.6*	2,696
Hispanic	86.8	6.2	7.0	2,971
Asian American	83.8	10.2	6.0	6,574
2018				
White	80.6	11.8	7.6*	10,334
African American	86.2	5.2	8.6*	2,720
Hispanic	84.0	8.6	7.4*	3,164
Asian American	83.0	11.7	5.2	7,231
2019				
White	81.5	11.7	6.8*	10,379
African American	86.2	5.6	8.2*	2,910
Hispanic	86.5	7.1	6.4	3,554
Asian American	82.2	12.0	5.7	7,260

A * indicates statistically different from the Asian-American admit rate at the 5% level
Constructed using results from basicFreqs.do

Table B.3.1: Application summary statistics by race, baseline dataset

	White			African American			Hispanic			Asian American			Total		
	Reject	Admit	Total	Reject	Admit	Total	Reject	Admit	Total	Reject	Admit	Total	Reject	Admit	Total
Admitted	0.00	100.00	4.19	0.00	100.00	6.46	0.00	100.00	5.26	0.00	100.00	3.95	0.00	100.00	4.50
Female	45.69	43.25	45.59	60.38	55.62	60.07	50.88	45.36	50.59	49.19	53.68	49.37	49.29	48.87	49.27
Disadvantaged	6.02	15.54	6.42	29.82	30.78	29.88	23.93	38.83	24.71	10.64	25.15	11.21	12.33	24.21	12.87
First-generation college	4.33	4.18	4.33	14.59	7.56	14.14	22.60	22.11	22.57	8.26	10.65	8.36	8.99	9.17	9.00
Mother highest ed: no college	22.17	19.08	22.04	45.22	29.16	44.18	53.03	47.31	52.73	26.62	29.69	26.74	29.99	27.83	29.89
Mother highest ed: BA degree	37.75	33.48	37.58	26.99	28.40	27.08	25.19	23.94	25.12	30.80	24.12	30.53	32.64	28.78	32.47
Mother highest ed: MA degree	25.64	28.90	25.78	18.48	26.46	19.00	14.14	18.10	14.35	27.52	29.90	27.62	24.05	27.23	24.20
Mother highest ed: PhD/JD/MD degree	12.22	16.81	12.41	6.77	13.82	7.23	5.72	8.93	5.89	9.71	11.89	9.80	10.04	13.64	10.20
Mother highest ed: Missing	0.02	0.02	0.02	0.03	0.02	0.03	0.02	0.02	0.02	0.05	0.04	0.05	0.03	0.03	0.03
Father highest ed: no college	21.30	20.90	21.28	51.59	33.15	50.40	52.09	49.03	51.93	19.64	24.47	19.83	27.98	28.20	27.99
Father highest ed: BA degree	29.70	25.12	29.51	20.46	21.17	20.50	20.43	17.64	20.29	19.13	13.26	18.90	23.98	20.08	23.81
Father highest ed: MA degree	24.53	26.44	24.61	15.64	21.60	16.03	14.74	17.18	14.87	31.38	25.91	31.16	24.62	24.16	24.60
Father highest ed: PhD/JD/MD degree	21.95	25.58	22.11	9.20	19.98	9.90	10.36	14.09	10.55	23.01	31.27	23.34	19.43	24.43	19.66
Father highest ed: Missing	0.03	0.02	0.02	0.03	0.04	0.03	0.02	0.02	0.02	0.07	0.05	0.07	0.04	0.03	0.04
Application read by 3rd reader	10.13	95.27	13.70	10.99	95.25	16.43	13.00	96.91	17.41	11.06	95.95	14.42	10.93	95.77	14.74
Missing alumni rating	22.94	1.91	22.06	27.86	1.94	26.19	30.87	1.60	29.34	21.24	1.86	20.47	23.94	1.83	22.94
Applied for fee waiver	8.12	13.45	8.34	44.41	29.27	43.43	36.54	37.57	36.59	13.39	20.69	13.68	17.40	21.49	17.58
Applied for financial aid	73.68	73.65	73.68	93.75	91.47	93.60	88.56	89.92	88.63	76.65	81.31	76.83	78.48	81.10	78.60
SAT1 math (z-score)	0.11	0.55	0.13	-1.18	0.11	-1.10	-0.71	0.26	-0.65	0.40	0.75	0.42	-0.05	0.48	-0.03
	(0.82)	(0.52)	(0.81)	(1.07)	(0.68)	(1.10)	(1.04)	(0.65)	(1.05)	(0.74)	(0.39)	(0.74)	(1.01)	(0.59)	(1.00)
SAT1 verbal (z-score)	0.30	0.72	0.32	-0.78	0.41	-0.71	-0.47	0.41	-0.42	0.29	0.69	0.30	0.08	0.61	0.10
	(0.76)	(0.43)	(0.76)	(1.07)	(0.56)	(1.08)	(1.05)	(0.60)	(1.05)	(0.81)	(0.45)	(0.80)	(0.94)	(0.51)	(0.94)
SAT2 avg (z-score)	-0.01	0.57	0.02	-1.25	0.13	-1.13	-0.62	0.40	-0.55	0.31	0.78	0.33	-0.09	0.52	-0.06
	(0.86)	(0.50)	(0.85)	(1.13)	(0.62)	(1.17)	(1.04)	(0.54)	(1.04)	(0.83)	(0.41)	(0.82)	(1.01)	(0.55)	(1.00)
Never took SAT2	12.35	1.54	11.90	27.92	1.94	26.24	17.51	2.06	16.70	5.30	0.34	5.10	12.60	1.43	12.10
Standardized high school GPA (z-score)	0.16	0.50	0.17	-0.52	0.33	-0.47	-0.08	0.44	-0.06	0.20	0.51	0.21	0.06	0.46	0.08
	(0.86)	(0.52)	(0.85)	(1.18)	(0.73)	(1.18)	(0.97)	(0.65)	(0.97)	(0.84)	(0.49)	(0.83)	(0.94)	(0.58)	(0.93)
Academic index (z-score)	0.15	0.75	0.17	-1.24	0.32	-1.14	-0.64	0.48	-0.58	0.37	0.88	0.39	-0.04	0.67	-0.01
	(0.80)	(0.39)	(0.79)	(1.12)	(0.51)	(1.16)	(1.01)	(0.46)	(1.02)	(0.79)	(0.34)	(0.78)	(1.01)	(0.46)	(1.00)
Academic index percentile	0.52	0.75	0.53	0.18	0.55	0.21	0.30	0.62	0.31	0.61	0.82	0.62	0.48	0.72	0.49
	(0.26)	(0.19)	(0.26)	(0.18)	(0.21)	(0.20)	(0.23)	(0.21)	(0.24)	(0.27)	(0.17)	(0.27)	(0.29)	(0.21)	(0.29)
Number of AP tests taken	4.10	5.90	4.15	2.12	5.08	2.27	3.56	6.25	3.68	5.57	7.41	5.61	4.28	6.19	4.34
	(3.91)	(3.90)	(3.92)	(3.14)	(3.90)	(3.25)	(3.82)	(3.81)	(3.86)	(4.06)	(3.41)	(4.06)	(4.01)	(3.85)	(4.02)
Average score of AP tests	4.39	4.73	4.40	3.78	4.50	3.85	3.96	4.53	4.00	4.46	4.77	4.47	4.33	4.66	4.34
	(0.59)	(0.35)	(0.58)	(0.77)	(0.42)	(0.78)	(0.75)	(0.46)	(0.75)	(0.57)	(0.31)	(0.56)	(0.65)	(0.40)	(0.64)
N	50,347	2,201	52,548	13,418	926	14,344	15,728	873	16,601	35,358	1,455	36,813	124,350	5,858	130,208

* Constructed using results from sumStatsTablesPoolRej.do

Table B.3.2: Application summary statistics by race, expanded dataset

	White			Black			Hispanic			Asian			Total		
	Reject	Admit	Total	Reject	Admit	Total	Reject	Admit	Total	Reject	Admit	Total	Reject	Admit	Total
Admitted	0.00	100.00	8.00	0.00	100.00	8.63	0.00	100.00	6.98	0.00	100.00	5.94	0.00	100.00	7.34
Female	45.73	43.96	45.58	59.90	53.93	59.38	50.72	45.40	50.35	49.16	52.18	49.34	49.21	48.01	49.12
Disadvantaged	5.76	8.86	6.01	29.16	26.14	28.90	23.43	33.10	24.10	10.27	19.24	10.81	11.86	16.50	12.20
First-generation college	4.18	3.55	4.13	14.35	7.64	13.77	21.93	17.71	21.64	7.97	8.54	8.01	8.64	7.00	8.52
Early action applicant	8.98	35.36	11.09	8.11	27.14	9.75	7.61	26.53	8.93	8.22	34.69	9.79	8.61	33.57	10.44
Athlete	0.19	16.27	1.48	0.14	8.86	0.89	0.04	4.18	0.33	0.03	4.11	0.28	0.12	10.65	0.89
Legacy	3.43	21.51	4.88	1.13	4.79	1.45	0.92	6.96	1.34	0.77	6.63	1.12	2.08	13.92	2.95
Faculty child	0.03	0.66	0.08	0.00	0.00	0.00	0.01	0.15	0.02	0.00	0.53	0.03	0.01	0.54	0.05
Staff child	0.12	0.94	0.19	0.05	0.14	0.06	0.05	0.46	0.08	0.11	1.06	0.16	0.10	0.80	0.16
Dean / Director's List	1.61	13.96	2.59	0.38	2.07	0.52	0.46	4.56	0.75	0.38	5.41	0.67	0.96	9.34	1.57
Mother highest ed: no college	21.37	14.62	20.83	44.32	28.21	42.93	51.76	39.91	50.94	25.84	23.34	25.69	28.98	21.52	28.43
Mother highest ed: BA degree	37.57	33.53	37.25	27.18	27.50	27.21	25.56	25.60	25.56	30.75	24.03	30.35	32.70	29.35	32.45
Mother highest ed: MA degree	25.96	28.96	26.20	18.69	26.71	19.39	14.61	20.49	15.02	27.81	32.82	28.11	24.42	28.67	24.73
Mother highest ed: PhD/JD/MD degree	12.91	21.25	13.58	7.21	15.14	7.89	6.07	11.83	6.47	10.06	14.44	10.32	10.59	17.73	11.11
Mother highest ed: Missing	0.02	0.02	0.02	0.03	0.02	0.03	0.02	0.02	0.02	0.06	0.05	0.06	0.03	0.03	0.03
Father highest ed: no college	20.58	14.70	20.11	50.75	31.86	49.12	51.00	41.69	50.35	18.94	19.11	18.95	27.06	21.18	26.62
Father highest ed: BA degree	29.36	25.02	29.02	20.61	21.21	20.66	20.60	18.56	20.46	19.01	12.89	18.65	23.93	20.62	23.69
Father highest ed: MA degree	24.86	27.75	25.09	15.95	21.86	16.46	15.10	19.64	15.42	31.76	30.42	31.68	24.97	26.79	25.10
Father highest ed: PhD/JD/MD degree	22.69	30.78	23.33	9.51	20.93	10.50	10.79	17.94	11.29	23.29	31.76	23.79	20.01	28.25	20.62
Father highest ed: Missing	0.03	0.02	0.02	0.03	0.04	0.03	0.03	0.02	0.02	0.07	0.06	0.07	0.04	0.03	0.04
Application read by 3rd reader	12.84	92.99	19.25	12.12	93.79	19.16	14.27	96.37	20.00	12.67	95.16	17.57	12.97	93.96	18.92
Applied for fee waiver	7.74	7.47	7.72	43.55	26.50	42.08	35.43	31.25	35.14	12.86	15.90	13.04	16.64	14.76	16.50
Applied for financial aid	72.32	57.59	71.14	93.33	88.00	92.87	88.10	82.68	87.72	75.99	71.74	75.73	77.47	67.94	76.77
Missing alumni rating	21.53	10.52	20.65	26.72	5.71	24.90	29.69	4.18	27.90	20.13	3.82	19.16	22.65	7.36	21.53
SAT1 math (z-score)	0.11	0.43	0.14	-1.17	0.06	-1.06	-0.69	0.26	-0.62	0.42	0.74	0.43	-0.04	0.44	0.00
	(0.82)	(0.59)	(0.80)	(1.07)	(0.71)	(1.10)	(1.04)	(0.65)	(1.05)	(0.74)	(0.42)	(0.72)	(1.00)	(0.62)	(0.98)
SAT1 verbal (z-score)	0.31	0.57	0.33	-0.77	0.32	-0.68	-0.44	0.43	-0.38	0.30	0.70	0.33	0.10	0.56	0.13
	(0.76)	(0.58)	(0.75)	(1.07)	(0.66)	(1.08)	(1.05)	(0.60)	(1.05)	(0.80)	(0.45)	(0.79)	(0.94)	(0.57)	(0.92)
SAT2 avg (z-score)	0.00	0.40	0.03	-1.24	0.04	-1.09	-0.60	0.38	-0.52	0.32	0.76	0.35	-0.08	0.44	-0.03
	(0.85)	(0.69)	(0.85)	(1.13)	(0.75)	(1.17)	(1.04)	(0.58)	(1.04)	(0.82)	(0.44)	(0.81)	(1.01)	(0.67)	(0.99)
Never took SAT2	12.02	1.77	11.20	28.18	3.14	26.02	17.67	2.24	16.59	5.13	0.33	4.85	12.43	1.72	11.65
Standardized high school GPA (z-score)	0.15	0.29	0.16	-0.52	0.23	-0.45	-0.08	0.41	-0.05	0.2	0.46	0.22	0.06	0.34	0.08
	(0.87)	(0.67)	(0.85)	(1.18)	(0.79)	(1.17)	(0.98)	(0.64)	(0.96)	(0.83)	(0.52)	(0.82)	(0.94)	(0.66)	(0.92)
Academic index (z-score)	0.15	0.55	0.18	-1.23	0.22	-1.10	-0.62	0.47	-0.55	0.38	0.86	0.41	-0.03	0.57	0.02
	(0.79)	(0.58)	(0.79)	(1.12)	(0.63)	(1.16)	(1.01)	(0.49)	(1.02)	(0.78)	(0.39)	(0.77)	(1.01)	(0.57)	(0.99)
Academic index percentile	0.52	0.67	0.53	0.19	0.52	0.22	0.30	0.62	0.32	0.62	0.81	0.63	0.49	0.68	0.50
	(0.26)	(0.24)	(0.26)	(0.18)	(0.23)	(0.21)	(0.23)	(0.21)	(0.24)	(0.27)	(0.18)	(0.27)	(0.29)	(0.24)	(0.29)
Number of AP tests taken	4.05	4.89	4.11	2.10	4.50	2.30	3.51	5.94	3.68	5.58	7.01	5.66	4.25	5.50	4.33
	(3.90)	(3.93)	(3.91)	(3.13)	(3.91)	(3.27)	(3.81)	(3.86)	(3.87)	(4.07)	(3.62)	(4.06)	(4.02)	(3.94)	(4.02)
Average score of AP tests	4.40	4.72	4.42	3.78	4.48	3.88	3.97	4.56	4.03	4.48	4.81	4.50	4.34	4.69	4.37
	(0.58)	(0.39)	(0.58)	(0.78)	(0.45)	(0.78)	(0.75)	(0.47)	(0.75)	(0.56)	(0.29)	(0.55)	(0.64)	(0.40)	(0.63)
N	57,756	5,020	62,776	14,823	1,400	16,223	17,224	1,293	18,517	38,910	2,459	41,369	139,633	11,068	150,701

* Constructed using results from sumStatsTablesPoolRej.do

Table B.4.1: Admission/Rejection Shares by Application Rating and Race/Ethnicity

	White			African American			Hispanic			Asian American		
	Reject	Admit	Total	Reject	Admit	Total	Reject	Admit	Total	Reject	Admit	Total
Academic rating												
<3-	10.32	2.41	9.68	54.81	3.36	50.37	37.62	0.23	35.01	8.45	0.16	7.96
=3-, 3, or 3+	46.78	22.03	44.80	40.17	43.21	40.43	48.75	35.89	47.85	33.37	8.54	31.89
>3+	42.91	75.56	45.52	5.03	53.43	9.20	13.63	63.88	17.14	58.18	91.30	60.15
Extracurricular rating												
<3-	3.72	3.05	3.67	7.95	2.07	7.44	5.95	2.01	5.67	2.03	0.81	1.96
=3-, 3, or 3+	74.23	38.88	71.40	79.31	49.50	76.74	79.67	44.08	77.17	72.46	26.08	69.70
>3+	22.05	58.07	24.93	12.74	48.43	15.83	14.39	53.91	17.16	25.51	73.11	28.34
Athletic rating												
<3-	33.13	24.87	32.48	43.33	32.73	42.41	43.13	37.64	42.75	46.80	44.25	46.65
=3-, 3, or 3+	53.89	38.84	52.69	50.15	44.34	49.65	49.66	42.39	49.16	48.36	43.38	48.07
>3+	12.98	36.29	14.83	6.52	22.93	7.94	7.21	19.97	8.10	4.84	12.38	5.28
Personal rating												
<3-	0.45	0.04	0.42	0.51	0.00	0.47	0.52	0.00	0.49	0.50	0.00	0.47
=3-, 3, or 3+	81.08	25.82	76.66	84.78	26.14	79.72	84.48	24.44	80.28	84.79	29.73	81.51
>3+	18.47	74.14	22.93	14.71	73.86	19.81	15.00	75.56	19.23	14.71	70.27	18.01
Teacher 1 rating												
<3-	0.57	0.04	0.53	1.13	0.00	1.02	0.90	0.00	0.83	0.52	0.00	0.48
=3-, 3, or 3+	70.61	33.77	67.58	83.56	43.03	79.69	78.56	39.24	75.60	70.44	28.86	67.91
>3+	28.82	66.19	31.89	15.31	56.97	19.29	20.54	60.76	23.57	29.05	71.14	31.60
Teacher 2 rating												
<3-	0.48	0.06	0.44	0.82	0.00	0.72	0.84	0.00	0.77	0.51	0.04	0.48
=3-, 3, or 3+	69.25	33.67	65.99	82.43	44.33	78.06	77.50	35.04	73.74	70.00	27.98	67.19
>3+	30.27	66.27	33.57	16.75	55.67	21.22	21.65	64.96	25.49	29.50	71.98	32.33
School counselor rating												
<3-	0.62	0.02	0.57	2.00	0.00	1.81	1.29	0.00	1.19	0.64	0.00	0.60
=3-, 3, or 3+	75.41	33.89	71.97	86.42	44.27	82.39	83.40	41.67	80.26	75.89	29.04	73.01
>3+	23.97	66.09	27.46	11.59	55.73	15.81	15.31	58.33	18.55	23.48	70.96	26.39
Alumni Personal rating												
<3-	7.32	0.82	6.73	10.51	1.28	9.51	10.14	0.40	9.24	8.27	0.68	7.73
=3-, 3, or 3+	31.19	9.97	29.27	35.75	10.27	32.99	35.43	7.02	32.80	31.49	7.13	29.77
>3+	61.49	89.20	63.99	53.74	88.44	57.50	54.43	92.58	57.96	60.24	92.19	62.50
Alumni Overall rating												
<3-	18.33	1.94	16.84	41.09	2.96	36.86	33.84	1.78	30.80	16.91	0.93	15.77
=3-, 3, or 3+	37.36	14.75	35.31	35.49	22.99	34.11	36.88	16.38	34.94	34.75	8.79	32.89
>3+	44.30	83.31	47.85	23.42	74.05	29.04	29.28	81.84	34.26	48.35	90.27	51.34
N	57,756	5,020	62,776	14,823	1,400	16,223	17,224	1,293	18,517	38,910	2,459	41,369

* Constructed using results from sumStatsSubRatTablesPoolRej.do

Table B.5.1: Number and Share of Applicants by Race/Ethnicity and Academic Index Decile, Baseline Dataset

	Number of Applicants in Each Decile					Share of Applicants in Each Decile				
Academic Index Decile	White	African American	Hispanic	Asian American	Total	White	African American	Hispanic	Asian American	Total
1	3,018	6,089	3,638	1,540	15,070	4.82	37.68	19.69	3.73	10.03
2	4,741	3,649	3,726	2,033	15,044	7.57	22.58	20.17	4.93	10.01
3	6,860	2,478	3,129	2,805	16,475	10.95	15.33	16.93	6.80	10.96
4	6,421	1,236	2,064	2,849	13,588	10.25	7.65	11.17	6.90	9.04
5	7,530	925	1,741	3,630	15,080	12.02	5.72	9.42	8.80	10.03
6	7,896	647	1,361	4,361	15,548	12.61	4.00	7.37	10.57	10.34
7	7,629	467	988	4,641	14,958	12.18	2.89	5.35	11.25	9.95
8	7,006	333	858	5,420	14,989	11.18	2.06	4.64	13.14	9.97
9	6,199	198	568	6,647	15,001	9.90	1.23	3.07	16.11	9.98
10	5,340	138	404	7,335	14,570	8.52	0.85	2.19	17.78	9.69
Total	62,640	16,160	18,477	41,261	150,323					

Table B.5.2: Admit Rates by Race/Ethnicity and Academic Index Decile, Baseline Dataset

Academic Index Decile	White	African American	Hispanic	Asian American	Total
1	1.39%	0.46%	0.05%	0.06%	0.52%
2	4.39%	2.22%	0.64%	0.98%	2.37%
3	3.95%	6.58%	2.49%	1.11%	3.59%
4	4.72%	13.83%	6.20%	2.00%	5.20%
5	5.48%	23.78%	10.05%	2.51%	6.56%
6	7.05%	29.83%	14.40%	3.44%	7.65%
7	7.58%	43.04%	18.62%	4.98%	8.62%
8	10.85%	45.35%	24.13%	6.07%	10.33%
9	14.55%	55.05%	27.29%	8.45%	12.67%
10	18.45%	57.25%	35.15%	13.44%	16.52%
Average	8.01%	8.64%	6.99%	5.96%	7.36%

Table B.5.3: Share Receiving a Two or Better on the Academic and Extracurricular Ratings by Race/Ethnicity and Academic Index Decile, Baseline Dataset

	Academic Rating					Extracurricular Rating				
Academic Index Decile	White	African American	Hispanic	Asian American	Total	White	African American	Hispanic	Asian American	Total
1	0.10%	0.02%	0.03%	0.00%	0.05%	11.46%	9.18%	9.40%	13.12%	10.23%
2	0.40%	0.05%	0.05%	0.54%	0.24%	16.11%	13.70%	12.78%	15.89%	14.70%
3	1.85%	0.93%	0.67%	1.32%	1.42%	20.39%	18.77%	15.95%	18.54%	19.07%
4	9.14%	5.83%	3.92%	7.97%	7.77%	22.19%	23.62%	18.90%	22.18%	21.95%
5	23.80%	19.46%	15.11%	23.28%	22.59%	24.21%	23.57%	20.45%	23.11%	23.66%
6	49.56%	46.83%	41.81%	49.64%	48.91%	25.30%	26.74%	23.59%	25.32%	25.43%
7	68.99%	68.74%	64.98%	71.86%	69.89%	27.74%	27.84%	28.04%	28.40%	28.06%
8	83.24%	80.48%	79.72%	86.33%	84.26%	28.15%	28.53%	24.71%	30.06%	28.60%
9	93.64%	93.43%	91.20%	95.16%	94.33%	31.46%	32.32%	29.58%	35.13%	33.31%
10	97.28%	94.93%	95.54%	98.10%	97.69%	33.99%	39.86%	30.45%	38.15%	36.40%
Average	45.56%	9.20%	17.14%	60.15%	42.45%	24.92%	15.79%	17.12%	28.36%	24.07%

Table B.5.4: Share Receiving a Two or Better on School Support Measures by Race/Ethnicity and Academic Index Decile, Baseline Dataset

	Teacher 1					Teacher 2					Counselor				
Academic Index Decile	White	African American	Hispanic	Asian American	Total	White	African American	Hispanic	Asian American	Total	White	African American	Hispanic	Asian American	Total
1	7.89%	7.85%	8.99%	7.60%	8.20%	6.33%	5.62%	6.49%	6.62%	6.14%	4.80%	5.07%	5.88%	5.78%	5.34%
2	13.63%	14.06%	13.85%	14.12%	13.77%	10.67%	11.56%	11.11%	11.71%	11.14%	9.60%	10.88%	10.33%	9.20%	10.06%
3	19.46%	19.73%	19.85%	17.04%	19.19%	15.93%	16.75%	17.67%	13.90%	16.15%	14.91%	17.07%	14.92%	12.41%	14.75%
4	24.19%	24.92%	23.69%	21.48%	23.56%	21.55%	22.90%	21.08%	18.57%	20.97%	19.37%	20.47%	17.59%	15.30%	18.31%
5	27.54%	30.05%	29.58%	22.59%	26.70%	24.34%	30.16%	24.99%	20.03%	23.78%	22.93%	25.84%	21.08%	17.82%	21.64%
6	31.64%	36.17%	31.74%	26.21%	30.31%	27.49%	35.55%	28.66%	23.96%	26.92%	25.94%	32.46%	25.13%	22.20%	25.05%
7	35.65%	40.69%	36.03%	30.49%	34.09%	31.66%	35.33%	33.30%	26.55%	30.06%	30.45%	37.04%	31.38%	25.25%	28.91%
8	40.78%	47.15%	37.88%	33.56%	37.53%	37.40%	40.84%	37.76%	29.96%	34.24%	35.50%	38.74%	34.85%	28.21%	32.28%
9	45.78%	47.98%	44.19%	40.03%	42.90%	42.60%	42.42%	39.44%	36.56%	39.52%	40.41%	44.44%	35.39%	34.26%	37.22%
10	50.84%	56.52%	50.25%	46.73%	48.50%	47.92%	50.72%	50.25%	42.00%	44.61%	45.86%	50.00%	47.28%	38.66%	41.76%
Average	31.09%	17.45%	21.84%	30.97%	28.36%	27.80%	15.01%	19.18%	27.62%	25.24%	26.19%	14.17%	16.99%	25.42%	23.43%

Table B.5.5: Share Receiving a Two or Better on the Personal Rating and Alumni Interview Personal Rating by Race/Ethnicity and Academic Index Decile, Baseline Dataset

	Personal					Alumni Personal				
Academic Index Decile	White	African American	Hispanic	Asian American	Total	White	African American	Hispanic	Asian American	Total
1	8.71%	10.02%	8.69%	8.18%	9.27%	26.87%	31.20%	26.44%	28.38%	28.54%
2	14.45%	16.36%	13.42%	12.89%	14.42%	34.11%	39.65%	33.47%	32.42%	35.04%
3	17.89%	24.21%	17.87%	13.69%	18.12%	40.63%	47.42%	39.02%	36.33%	40.69%
4	20.45%	29.69%	21.27%	15.16%	20.29%	45.68%	55.74%	44.23%	40.19%	45.34%
5	22.55%	35.35%	25.90%	15.51%	21.94%	49.23%	60.00%	50.26%	44.44%	48.89%
6	23.95%	35.09%	28.43%	17.08%	22.71%	52.70%	62.13%	54.96%	47.58%	51.90%
7	24.35%	41.11%	30.97%	18.42%	23.20%	55.28%	70.02%	57.49%	52.25%	54.87%
8	27.62%	40.24%	32.17%	18.41%	24.26%	59.28%	67.57%	62.70%	54.28%	57.56%
9	29.91%	40.91%	30.81%	21.38%	25.86%	63.04%	71.21%	63.56%	57.67%	60.77%
10	30.82%	48.55%	36.39%	22.51%	26.32%	65.77%	74.64%	71.53%	63.87%	65.02%
Average	22.94%	19.81%	19.25%	18.02%	20.60%	50.78%	43.09%	41.79%	50.49%	48.76%

*Note that those who do not have an alumni interview are coded as not having received a 2 or better on the alumni overall rating

Table B.5.6: Share Receving a Two or Better on Overall Rating and Alumni Interviewer Overall Rating by Race/Ethnicity and Academic Index Decile, Baseline Dataset

	Final Reader Overall Rating					Alumni Interviewer Overall Rating				
Academic Index Decile	White	African American	Hispanic	Asian American	Total	White	African American	Hispanic	Asian American	Total
1	0.07%	0.00%	0.00%	0.00%	0.01%	7.75%	7.54%	7.23%	7.47%	7.59%
2	0.32%	0.49%	0.08%	0.15%	0.29%	13.90%	15.10%	11.94%	12.54%	13.69%
3	0.82%	2.54%	0.70%	0.36%	0.98%	20.52%	24.41%	19.62%	17.61%	20.60%
4	1.62%	7.61%	2.23%	0.63%	2.09%	27.58%	33.82%	24.71%	23.27%	26.86%
5	2.74%	15.89%	4.71%	1.43%	3.55%	33.60%	42.38%	34.58%	29.31%	33.27%
6	4.37%	23.03%	9.04%	2.32%	5.00%	39.15%	51.16%	40.12%	35.91%	38.88%
7	6.03%	32.76%	12.65%	3.79%	6.59%	43.95%	56.75%	45.65%	42.77%	44.22%
8	9.82%	38.14%	16.43%	5.30%	8.83%	50.73%	59.46%	51.63%	47.55%	49.53%
9	13.52%	45.96%	20.77%	8.23%	11.72%	57.69%	61.11%	59.68%	54.37%	56.54%
10	18.20%	48.55%	29.70%	13.48%	16.19%	64.06%	66.67%	65.84%	63.26%	63.82%
Average	3.99%	4.56%	3.37%	3.86%	3.91%	37.67%	21.24%	24.24%	41.14%	35.34%

*Note that those who do not have an alumni interview are coded as not having received a 2 or better on the alumni overall rating

Table B.5.7: Number and Share of Applicants by Race/Ethnicity, Year, and Academic Index Decile, Baseline Dataset

	Number of Applicants in Each Decile						Share of Applicants in each Decile				
Academic Index Decile	White	African American	Hispanic	Asian American	Total		White	African American	Hispanic	Asian American	Total
2014											
1	389	892	514	217	2,127		4.10	39.63	19.92	3.46	9.90
2	706	534	544	298	2,206		7.43	23.72	21.09	4.75	10.27
3	1,029	333	461	443	2,391		10.84	14.79	17.87	7.06	11.13
4	1,028	153	281	490	2,065		10.82	6.80	10.89	7.81	9.61
5	1,148	112	248	555	2,153		12.09	4.98	9.61	8.85	10.02
6	1,280	88	193	717	2,366		13.48	3.91	7.48	11.43	11.02
7	1,126	72	121	719	2,106		11.86	3.20	4.69	11.46	9.80
8	1,049	32	105	828	2,075		11.05	1.42	4.07	13.20	9.66
9	953	27	61	991	2,085		10.03	1.20	2.36	15.80	9.71
10	789	8	52	1,015	1,905		8.31	0.36	2.02	16.18	8.87
2015											
1	470	1,161	641	258	2,660		4.50	41.14	20.38	3.59	10.70
2	757	656	687	343	2,581		7.25	23.25	21.84	4.77	10.39
3	1,215	394	539	470	2,812		11.64	13.96	17.14	6.53	11.32
4	1,093	200	327	528	2,286		10.47	7.09	10.40	7.34	9.20
5	1,326	167	270	729	2,656		12.70	5.92	8.59	10.13	10.69
6	1,380	92	224	832	2,668		13.22	3.26	7.12	11.57	10.74
7	1,270	71	175	833	2,464		12.17	2.52	5.56	11.58	9.92
8	1,125	44	133	996	2,401		10.78	1.56	4.23	13.85	9.66
9	1,003	21	84	1,145	2,330		9.61	0.74	2.67	15.92	9.38
10	798	16	65	1,059	1,992		7.65	0.57	2.07	14.72	8.02
2016											
1	452	987	580	203	2,347		5.47	43.12	22.42	3.61	11.24
2	694	493	545	306	2,189		8.40	21.54	21.07	5.44	10.48
3	986	355	422	408	2,376		11.94	15.51	16.31	7.26	11.38
4	926	145	305	461	2,045		11.21	6.33	11.79	8.20	9.79
5	1,052	114	251	525	2,182		12.74	4.98	9.70	9.34	10.45
6	1,031	76	175	592	2,135		12.48	3.32	6.76	10.53	10.22
7	985	57	116	665	2,055		11.93	2.49	4.48	11.83	9.84
8	883	32	106	722	2,002		10.69	1.40	4.10	12.84	9.59
9	677	20	54	877	1,881		8.20	0.87	2.09	15.60	9.01
10	573	10	33	863	1,673		6.94	0.44	1.28	15.35	8.01
2017											
1	410	867	505	231	2,133		5.12	38.46	19.70	4.20	10.38
2	650	508	528	317	2,147		8.12	22.54	20.60	5.77	10.45
3	861	358	435	440	2,305		10.76	15.88	16.97	8.00	11.22
4	777	184	298	357	1,799		9.71	8.16	11.63	6.49	8.76
5	964	108	241	480	1,997		12.05	4.79	9.40	8.73	9.72
6	963	82	191	637	2,137		12.04	3.64	7.45	11.59	10.40
7	995	55	131	568	1,997		12.44	2.44	5.11	10.33	9.72
8	863	41	113	685	1,995		10.79	1.82	4.41	12.46	9.71
9	852	28	77	889	2,138		10.65	1.24	3.00	16.17	10.41
10	666	23	44	894	1,897		8.32	1.02	1.72	16.26	9.23
2018											
1	414	816	494	260	2,067		5.05	35.66	18.11	4.23	9.94
2	603	526	523	316	2,070		7.36	22.99	19.17	5.15	9.95
3	845	344	490	432	2,244		10.31	15.03	17.96	7.04	10.79
4	813	188	323	417	1,838		9.92	8.22	11.84	6.79	8.84
5	944	139	269	523	2,049		11.52	6.08	9.86	8.52	9.85
6	999	106	205	633	2,079		12.19	4.63	7.51	10.31	10.00
7	1,028	54	143	669	2,054		12.54	2.36	5.24	10.90	9.88
8	971	64	131	811	2,161		11.84	2.80	4.80	13.21	10.39
9	882	34	89	1,004	2,205		10.76	1.49	3.26	16.35	10.60
10	699	17	61	1,075	2,029		8.53	0.74	2.24	17.51	9.76
2019											
1	477	827	658	271	2,363		5.94	34.70	22.18	4.53	11.09
2	564	535	573	297	2,094		7.02	22.45	19.32	4.96	9.83
3	838	387	494	429	2,319		10.43	16.24	16.66	7.17	10.88
4	774	205	336	376	1,811		9.64	8.60	11.33	6.29	8.50
5	917	140	260	481	1,986		11.42	5.87	8.77	8.04	9.32
6	951	104	192	555	2,005		11.84	4.36	6.47	9.28	9.41
7	986	74	158	667	2,111		12.28	3.11	5.33	11.15	9.91
8	951	57	136	760	2,161		11.84	2.39	4.59	12.70	10.14
9	743	37	93	912	2,034		9.25	1.55	3.14	15.25	9.55
10	830	17	66	1,234	2,422		10.33	0.71	2.23	20.63	11.37

Table B.5.8: Number and Share of Applicants by Race/Ethnicity, Year, and Academic Index Decile, Expanded Dataset

	Number of Applicants in Each Decile					Share of Applicants in each Decile				
Academic Index Decile	White	African American	Hispanic	Asian American	Total	White	African American	Hispanic	Asian American	Total
2014										
1	423	912	515	222	2,190	4.08	39.29	19.6	3.47	9.67
2	774	551	552	311	2,320	7.47	23.74	21	4.86	10.25
3	1,171	340	470	451	2,572	11.3	14.65	17.88	7.05	11.36
4	1,126	160	286	502	2,194	10.87	6.89	10.88	7.85	9.69
5	1,260	119	252	578	2,308	12.16	5.13	9.59	9.04	10.19
6	1,399	93	201	736	2,524	13.51	4.01	7.65	11.51	11.15
7	1,222	77	121	732	2,224	11.8	3.32	4.6	11.45	9.82
8	1,120	34	111	841	2,172	10.81	1.46	4.22	13.15	9.59
9	1,033	27	65	1,001	2,182	9.97	1.16	2.47	15.66	9.64
10	831	8	55	1,020	1,959	8.02	0.34	2.09	15.95	8.65
2015										
1	503	1,182	642	260	2,722	4.45	40.9	19.97	3.56	10.45
2	849	673	699	353	2,723	7.52	23.29	21.74	4.83	10.45
3	1,319	409	555	485	2,977	11.68	14.15	17.26	6.63	11.42
4	1,183	207	337	538	2,419	10.47	7.16	10.48	7.36	9.28
5	1,426	173	280	738	2,793	12.63	5.99	8.71	10.09	10.72
6	1,506	93	228	849	2,827	13.33	3.22	7.09	11.61	10.85
7	1,365	72	177	841	2,572	12.08	2.49	5.51	11.5	9.87
8	1,213	44	139	1,015	2,520	10.74	1.52	4.32	13.88	9.67
9	1,077	21	90	1,163	2,436	9.54	0.73	2.8	15.9	9.35
10	854	16	68	1,071	2,071	7.56	0.55	2.12	14.65	7.95
2016										
1	543	1,110	641	221	2,664	5.29	41.53	21.5	3.36	10.63
2	844	568	603	334	2,520	8.21	21.25	20.23	5.07	10.06
3	1,186	419	484	455	2,791	11.54	15.68	16.24	6.91	11.14
4	1,149	174	347	506	2,420	11.18	6.51	11.64	7.69	9.66
5	1,288	142	280	593	2,594	12.54	5.31	9.39	9.01	10.35
6	1,279	94	212	682	2,567	12.45	3.52	7.11	10.36	10.25
7	1,219	71	160	776	2,498	11.86	2.66	5.37	11.79	9.97
8	1,105	43	137	851	2,443	10.76	1.61	4.6	12.93	9.75
9	889	33	74	1,056	2,363	8.65	1.23	2.48	16.04	9.43
10	772	19	43	1,108	2,194	7.51	0.71	1.44	16.83	8.76
2017										
1	483	986	551	254	2,408	4.8	36.79	18.64	3.89	9.65
2	788	601	604	346	2,501	7.84	22.43	20.43	5.3	10.02
3	1,063	432	497	475	2,720	10.57	16.12	16.81	7.28	10.9
4	969	223	330	405	2,148	9.64	8.32	11.16	6.2	8.6
5	1,222	134	282	558	2,451	12.15	5	9.54	8.55	9.82
6	1,216	108	228	728	2,595	12.09	4.03	7.71	11.15	10.39
7	1,249	75	160	680	2,461	12.42	2.8	5.41	10.42	9.86
8	1,106	57	137	829	2,489	11	2.13	4.63	12.7	9.97
9	1,097	30	108	1,078	2,682	10.91	1.12	3.65	16.51	10.74
10	863	34	59	1,176	2,510	8.58	1.27	2	18.01	10.05
2018										
1	491	916	543	282	2,326	4.77	33.94	17.24	3.92	9.27
2	743	606	585	349	2,410	7.21	22.45	18.57	4.85	9.61
3	1,051	420	554	465	2,641	10.2	15.56	17.59	6.47	10.53
4	1,006	227	364	470	2,184	9.77	8.41	11.56	6.54	8.7
5	1,174	170	324	592	2,461	11.4	6.3	10.29	8.23	9.81
6	1,269	132	246	706	2,516	12.32	4.89	7.81	9.82	10.03
7	1,295	73	175	802	2,538	12.57	2.7	5.56	11.15	10.12
8	1,241	84	162	945	2,655	12.05	3.11	5.14	13.14	10.58
9	1,110	42	114	1,216	2,722	10.78	1.56	3.62	16.91	10.85
10	920	29	83	1,365	2,638	8.93	1.07	2.63	18.98	10.51
2019										
1	575	983	746	301	2,760	5.55	33.93	21.03	4.15	10.41
2	743	650	683	340	2,570	7.17	22.44	19.26	4.69	9.7
3	1,070	458	569	474	2,774	10.33	15.81	16.04	6.54	10.46
4	988	245	400	428	2,223	9.54	8.46	11.28	5.9	8.39
5	1,160	187	323	571	2,473	11.2	6.45	9.11	7.87	9.33
6	1,227	127	246	660	2,519	11.85	4.38	6.94	9.1	9.5
7	1,279	99	195	810	2,665	12.35	3.42	5.5	11.17	10.05
8	1,221	71	172	939	2,710	11.79	2.45	4.85	12.95	10.22
9	993	45	117	1,133	2,616	9.59	1.55	3.3	15.63	9.87
10	1,100	32	96	1,595	3,198	10.62	1.1	2.71	22	12.06

Table B.5.9: Admit Rates by Race/Ethnicity and Academic Index Decile

	Baseline Dataset					Expanded Dataset			
Academic Index Decile	White	African American	Hispanic	Asian American		White	African American	Hispanic	Asian American
2014									
1	0.00%	0.00%	0.00%	0.00%		2.13%	0.44%	0.00%	0.45%
2	0.42%	1.50%	0.55%	0.34%		4.39%	2.90%	1.27%	1.29%
3	1.36%	6.91%	2.39%	0.23%		5.72%	7.94%	2.98%	0.22%
4	1.85%	18.95%	5.69%	1.63%		4.97%	21.25%	6.64%	2.19%
5	3.75%	33.04%	12.50%	1.80%		7.30%	35.29%	13.49%	2.94%
6	5.16%	43.18%	13.47%	3.21%		8.15%	43.01%	14.93%	3.80%
7	6.84%	52.78%	22.31%	4.73%		9.82%	53.25%	22.31%	4.92%
8	8.87%	53.13%	24.76%	7.49%		11.70%	55.88%	25.23%	8.44%
9	15.11%	48.15%	21.31%	11.10%		18.97%	48.15%	20.00%	11.59%
10	19.52%	75.00%	40.38%	14.48%		21.90%	75.00%	43.64%	14.71%
2015									
1	0.00%	0.00%	0.00%	0.00%		1.39%	0.59%	0.00%	0.00%
2	0.26%	0.91%	0.15%	0.29%		4.83%	1.78%	0.57%	0.85%
3	0.25%	7.36%	0.93%	1.06%		3.26%	8.80%	2.16%	1.86%
4	3.02%	14.50%	7.95%	0.57%		5.66%	15.46%	8.90%	1.49%
5	2.11%	27.54%	10.00%	1.92%		4.14%	27.75%	11.07%	2.17%
6	3.91%	31.52%	13.39%	3.00%		6.91%	32.26%	14.47%	4.00%
7	4.72%	43.66%	21.71%	4.08%		7.47%	44.44%	22.60%	4.52%
8	8.44%	52.27%	24.81%	4.82%		11.05%	52.27%	25.90%	5.62%
9	12.36%	71.43%	33.33%	8.56%		15.78%	71.43%	33.33%	9.20%
10	19.05%	75.00%	30.77%	12.94%		21.55%	75.00%	33.82%	13.45%
2016									
1	0.00%	0.00%	0.00%	0.00%		1.66%	0.18%	0.00%	0.00%
2	0.29%	1.22%	0.00%	0.33%		4.86%	2.29%	0.50%	1.20%
3	0.41%	4.23%	2.13%	0.49%		2.78%	6.44%	2.69%	1.98%
4	0.97%	8.28%	3.61%	0.65%		4.35%	13.22%	6.05%	1.78%
5	2.38%	12.28%	7.57%	1.14%		5.75%	16.20%	10.00%	2.87%
6	3.01%	27.63%	8.00%	2.03%		7.43%	29.79%	11.32%	3.23%
7	3.45%	33.33%	12.07%	3.61%		7.05%	42.25%	17.50%	5.54%
8	7.36%	46.88%	21.70%	2.63%		12.13%	55.81%	27.74%	5.41%
9	9.16%	55.00%	24.07%	6.04%		15.86%	66.67%	29.73%	9.28%
10	16.06%	30.00%	24.24%	10.66%		22.02%	63.16%	25.58%	15.25%
2017									
1	0.00%	0.00%	0.00%	0.00%		1.24%	0.61%	0.00%	0.00%
2	0.31%	0.20%	0.19%	0.32%		3.68%	2.16%	0.50%	0.87%
3	0.23%	3.07%	3.45%	0.91%		3.29%	6.02%	4.23%	1.68%
4	0.64%	9.78%	4.36%	1.12%		4.33%	14.35%	5.15%	2.72%
5	2.49%	21.30%	7.05%	1.46%		5.89%	26.87%	8.87%	2.15%
6	3.43%	24.39%	9.95%	2.04%		7.48%	29.63%	14.47%	3.30%
7	2.91%	32.73%	14.50%	3.70%		7.21%	42.67%	20.63%	5.88%
8	4.75%	34.15%	18.58%	2.63%		11.03%	33.33%	24.09%	6.76%
9	5.99%	50.00%	14.29%	3.49%		13.04%	46.67%	24.07%	7.05%
10	11.11%	56.52%	22.73%	7.38%		17.15%	61.76%	28.81%	14.03%
2018									
1	0.00%	0.25%	0.00%	0.00%		0.41%	0.66%	0.00%	0.00%
2	0.00%	0.38%	0.00%	0.00%		4.44%	1.82%	0.34%	1.15%
3	0.36%	2.62%	1.02%	0.23%		4.38%	5.00%	1.08%	0.22%
4	1.48%	6.38%	3.10%	0.48%		4.57%	10.57%	4.40%	2.13%
5	0.95%	12.23%	5.95%	0.76%		4.68%	17.65%	9.88%	2.20%
6	2.40%	19.81%	11.71%	2.05%		5.20%	28.03%	15.04%	3.12%
7	2.63%	31.48%	11.89%	1.35%		7.95%	39.73%	17.14%	4.24%
8	4.74%	35.94%	19.08%	2.47%		10.96%	46.43%	24.69%	4.76%
9	6.35%	50.00%	21.35%	3.59%		12.88%	57.14%	30.70%	6.83%
10	8.87%	35.29%	29.51%	5.77%		16.96%	44.83%	43.37%	12.16%
2019									
1	0.00%	0.00%	0.00%	0.00%		1.57%	0.31%	0.27%	0.00%
2	0.53%	0.56%	0.17%	0.00%		4.04%	2.46%	0.73%	0.59%
3	0.24%	2.84%	1.42%	0.23%		4.39%	5.68%	2.11%	0.63%
4	1.55%	6.83%	3.87%	0.53%		4.25%	10.61%	6.25%	1.87%
5	1.53%	11.43%	3.85%	1.66%		5.26%	21.93%	7.74%	2.80%
6	2.73%	14.42%	9.90%	1.80%		7.09%	20.47%	15.85%	3.03%
7	2.33%	28.38%	11.39%	2.40%		6.02%	37.37%	13.33%	4.94%
8	3.68%	35.09%	13.97%	3.29%		8.44%	38.03%	18.60%	5.75%
9	5.25%	40.54%	19.35%	3.95%		10.98%	46.67%	24.79%	7.24%
10	6.99%	29.41%	19.70%	5.75%		13.18%	46.88%	32.29%	12.04%

Table B.6.1: Ordered logit estimates of Harvard's Academic and Extracurricular Ratings, baseline dataset

	Academic						Extracurricular					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
African American	***-1.730***	***0.060***	0.017	0.020	-0.031	-0.027	***-0.558***	***-0.059***	***-0.101***	-0.076	***-0.221***	***-0.291***
Hispanic	***-0.986***	***-0.242***	***-0.187***	***-0.160***	***-0.154***	***-0.152***	***-0.337***	***-0.162***	***-0.182***	***-0.168***	***-0.185***	***-0.216***
Asian American	***0.574***	0.000	0.033	0.056	***0.113***	***0.110***	***0.143***	***0.065***	***0.103***	***0.134***	***0.156***	***0.192***
Female	***-0.336***	*0.119*	*0.164*	*0.155*	***0.121***	***0.122***	***0.263***	***0.294***	***0.146***	***0.141***	0.033	0.013
Disadvantaged	***0.128***	0.049	***0.140***	***0.147***	0.054	0.058	***0.459***	***0.442***	***0.500***	***0.493***	***0.329***	***0.269***
First generation	***-0.207***	-0.028	-0.021	-0.019	-0.032	-0.032	-0.018	0.046	*0.060*	0.056	0.038	0.037
Waiver	***-0.720***	***-0.081***	***-0.084***	***-0.092***	***-0.091***	***-0.091***	***-0.236***	***-0.048***	***-0.042***	***-0.061***	***-0.089***	***-0.092***
Applied for Financial Aid	***-0.110***	***-0.080***	***-0.082***	***-0.056***	***-0.042***	***-0.042***	***-0.076***	***-0.087***	***-0.055***	***-0.037***	***-0.042***	***-0.041***
Academic index		***3.704***	***3.704***	***3.712***	***3.583***	***3.582***		*0.555*	***0.446***	***0.452***	0.084	*0.092*
AI Sq. X (AI>0)		***1.202***	***1.200***	***1.200***	***1.168***	***1.166***		*0.084*	***0.148***	***0.149***	0.056	*0.080*
AI Sq. X (AI<0)		***0.409***	***0.410***	***0.413***	***0.402***	***0.402***		0.010	0.009	0.011	-0.015	-0.015
Humanities			***0.074***	0.066	0.046	0.046			***0.103***	***0.099***	0.043	0.047
Biology			0.039	0.047	0.089	0.088			***-0.585***	***-0.581***	***-0.546***	***-0.531***
Physical Sciences			***0.150***	***0.153***	***0.185***	***0.183***			***-0.699***	***-0.706***	***-0.734***	***-0.700***
Engineering			-0.022	-0.010	0.067	0.066			***-0.774***	***-0.775***	***-0.693***	***-0.668***
Mathematics			0.095	***0.104***	***0.131***	***0.129***			***-0.716***	***-0.722***	***-0.746***	***-0.703***
Computer Science			-0.061	-0.061	-0.005	-0.007			***-0.756***	***-0.761***	***-0.758***	***-0.713***
Female X Humanities			-0.073	-0.067	-0.047	-0.048			-0.057	-0.056	-0.025	-0.023
Female X Biology			-0.049	-0.049	-0.065	-0.066			***0.106***	***0.106***	***0.109***	***0.111***
Female X Phys Sci			-0.048	-0.044	-0.045	-0.045			***0.212***	***0.213***	***0.234***	***0.228***
Female X Engineering			0.000	-0.003	-0.069	-0.069			***0.268***	***0.270***	***0.231***	***0.226***
Female X Math			***-0.168***	***-0.171***	***-0.167***	***-0.167***			***0.226***	***0.230***	***0.295***	***0.284***
Female X Comp Sci			-0.017	-0.025	-0.039	-0.039			***0.175***	***0.175***	***0.193***	***0.174***
Female X African American			0.082	0.084	***0.113***	***0.111***			***0.155***	***0.162***	***0.198***	***0.219***
Female X Hispanic			-0.042	-0.043	-0.022	-0.023			0.046	0.040	0.086	*0.096*
Female X Asian American			-0.055	-0.055	-0.055	-0.055			0.010	0.011	0.005	0.002
Disadv X African American			-0.080	-0.090	-0.092	-0.094			-0.037	-0.023	0.054	0.087
Disadv X Hispanic			*-0.198*	*-0.204*	***-0.241***	***-0.241***			0.013	0.030	0.027	0.030
Disadv X Asian American			-0.063	-0.073	-0.113	-0.113			***-0.201***	***-0.173***	***-0.181***	***-0.180***
Observations	130,208	130,208	130,208	130,208	130,160	130,160	129,213	129,213	129,213	129,213	129,165	129,165
Pseudo R Sq.	0.153	0.541	0.541	0.542	0.556	0.556	0.025	0.048	0.059	0.062	0.121	0.130

*Bold and italicized coefficients are statistically different from zero at the 5% level

*Omitted coefficients are year effects, docket effects, race/ethnicity for Native Americans, Hawaiians, and missing,
SAT math, SAT verbal, SAT2 average, high school gpa, interactions of missing SAT2 and race, flag for extremely low grades, indicators for each mother and father education level

*Omitted coefficients for models 3 and beyond include unspecficed major, female and disadvantaged times Native American, Hawaian and missing race, unspecified major. Social Science is the omitted major

*Omitted coefficients for models 4 and beyond include high school and neighborhood cluster indicators and race times missing high school and neighborhood cluster

*Omitted coefficients for models 5 and 6 include indicator variables for each ranking measure and interactions between race and missing alumni interview

Table B.6.2: Ordered logit estimates of Harvard's School Support Measures, baseline dataset

	Teacher 1						Teacher 2						Counselor					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
African American	***-0.648***	0.029	0.080	0.077	-0.023	***-0.139***	***-0.583***	0.066	***0.157***	***0.174***	0.075	-0.040	***-0.638***	***0.140***	***0.183***	***0.212***	***0.136***	-0.025
Hispanic	***-0.310***	-0.026	-0.009	-0.019	0.011	-0.042	***-0.292***	-0.030	-0.003	-0.022	0.003	-0.049	***-0.307***	0.007	-0.019	-0.016	-0.009	-0.078
Asian American	***-0.085***	***-0.283***	***-0.285***	***-0.271***	***-0.212***	***-0.160***	***-0.128***	***-0.316***	***-0.327***	***-0.306***	***-0.236***	***-0.183***	***-0.097***	***-0.299***	***-0.289***	***-0.229***	***-0.132***	***-0.059***
Female	-0.005	0.074	***0.126***	***0.138***	***0.082***	0.050	-0.038	0.041	0.113	0.129	0.072	0.042	0.024	***0.114***	***0.078***	***0.099***	0.030	-0.016
Disadvantaged	***0.431***	***0.428***	***0.359***	***0.344***	***0.151***	0.061	***0.460***	***0.451***	***0.433***	***0.425***	***0.254***	***0.167***	***0.455***	***0.440***	***0.366***	***0.369***	***0.154***	0.025
First generation	0.038	***0.100***	***0.097***	***0.076***	0.058	0.056	0.002	0.070	0.062	0.040	0.011	0.011	0.034	***0.113***	***0.104***	***0.084***	0.065	0.061
Waiver	***-0.195***	0.034	0.035	-0.053	-0.042	-0.050	***-0.189***	0.039	0.041	-0.045	-0.032	-0.045	***-0.185***	***0.090***	***0.092***	0.026	0.066	0.056
Applied for Financial Aid	-0.003	-0.018	-0.013	-0.063	-0.023	-0.023	0.000	-0.014	-0.010	-0.050	-0.010	-0.009	***-0.102***	***-0.130***	***-0.124***	***-0.125***	***-0.086***	***-0.084***
Academic index		***0.510***	***0.486***	***0.530***	***0.116***	***0.122***		***0.534***	***0.512***	***0.553***	***0.147***	***0.154***		***0.552***	***0.527***	***0.553***	-0.019	-0.005
AI Sq. X (AI>0)		***0.324***	***0.330***	***0.343***	***0.172***	***0.200***		***0.312***	***0.320***	***0.333***	***0.176***	***0.201***		***0.283***	***0.294***	***0.289***	***0.146***	***0.184***
AI Sq. X (AI<0)		0.014	0.014	0.014	-0.007	-0.007		0.020	0.020	0.020	-0.001	0.000		-0.015	-0.015	-0.013	*-0.061*	*-0.059*
Humanities			***0.156***	***0.161***	***0.123***	***0.126***			***0.157***	***0.162***	***0.121***	***0.128***			***0.083***	***0.074***	0.014	0.011
Biology			-0.044	***-0.061***	0.030	0.049			***-0.073***	***-0.085***	-0.009	0.014			***-0.132***	***-0.136***	-0.028	-0.002
Physical Sciences			***0.111***	***0.078***	***0.154***	***0.199***			***0.084***	0.055	***0.119***	***0.162***			-0.041	-0.054	0.037	*0.097*
Engineering			***-0.124***	***-0.143***	-0.025	0.011			***-0.110***	***-0.125***	-0.007	0.032			***-0.184***	***-0.193***	-0.046	0.001
Mathematics			***0.118***	***0.092***	***0.141***	***0.192***			***0.120***	***0.095***	***0.139***	***0.191***			0.013	0.002	0.080	*0.147*
Computer Science			***-0.112***	***-0.135***	0.004	0.071			***-0.100***	***-0.118***	0.015	0.086			***-0.262***	***-0.269***	-0.095	-0.002
Female X Humanities			***-0.122***	***-0.124***	-0.081	-0.076			***-0.181***	***-0.183***	***-0.154***	***-0.148***			-0.054	-0.047	0.016	0.033
Female X Biology			-0.057	-0.054	-0.056	-0.051			***-0.083***	***-0.084***	***-0.081***	-0.077			0.041	0.041	0.055	0.064
Female X Phys Sci			***-0.141***	***-0.126***	***-0.143***	***-0.150***			***-0.127***	**-0.118**	***-0.131***	***-0.128***			-0.021	-0.020	-0.018	-0.019
Female X Engineering			0.022	0.024	-0.024	-0.032			0.011	0.011	-0.040	-0.047			***0.158***	***0.159***	***0.128***	***0.123***
Female X Math			***-0.194***	***-0.192***	***-0.155***	***-0.165***			***-0.216***	***-0.218***	***-0.176***	***-0.182***			-0.048	-0.050	0.015	0.004
Female X Comp Sci			0.012	0.020	0.028	0.002			-0.128	-0.119	-0.133	-0.158			0.015	0.018	0.005	-0.031
Female X African American			-0.091	-0.091	-0.063	-0.028			-0.097	-0.093	-0.062	-0.037			-0.020	-0.020	0.022	0.071
Female X Hispanic			-0.080	-0.085	-0.049	-0.032			-0.094	***-0.097***	-0.069	-0.055			-0.016	-0.022	0.035	0.052
Female X Asian American			0.032	0.028	0.038	0.035			0.054	0.050	0.067	0.062			-0.005	-0.018	-0.018	-0.025
Disadv X African American			0.106	0.080	***0.156***	***0.207***			-0.048	-0.088	-0.053	0.000			0.015	-0.032	0.020	0.101
Disadv X Hispanic			***0.165***	0.102	0.109	0.110			0.117	0.055	0.030	0.024			***0.221***	***0.152***	***0.171***	***0.179***
Disadv X Asian American			0.029	0.065	0.064	0.067			0.026	0.065	0.047	0.045			0.096	***0.126***	0.123	*0.133*
Observations	124,928	124,928	124,928	124,928	124,896	124,896	105,662	105,662	105,662	105,662	105,632	105,632	122,526	122,526	122,526	122,526	122,526	122,526
Pseudo R Sq.	0.024	0.072	0.073	0.078	0.137	0.157	0.023	0.068	0.069	0.074	0.133	0.152	0.039	0.096	0.097	0.102	0.177	0.209

*Bold and italicized coefficients are statistically different from zero at the 5% level

*Omitted coefficients are year effects, docket effects, race/ethnicity for Native Americans, Hawaiians, and missing,
SAT math, SAT verbal, SAT2 average, high school gpa, interactions of missing SAT2 and race, flag for extremely low grades, indicators for each mother and father education level

*Omitted coefficients for models 3 and beyond include unspecficed major, female and disadvantaged times Native American, Hawaian and missing race, unspecified major. Social Science is the omitted major

*Omitted coefficients for models 4 and beyond include high school and neighborhood cluster indicators and race times missing high school and neighborhood cluster

*Omitted coefficients for models 5 and 6 include indicator variables for each ranking measure and interactions between race and missing alumni interview

Table B.6.3: Ordered logit estimates of Harvard's Personal Rating and Alumni Personal Rating, baseline dataset

	Personal Rating					Alumni Personal					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
African American	***-0.137***	***0.421***	***0.683***	***0.701***	***0.694***	***-0.135***	***0.280***	***0.425***	***0.429***	***0.228***	***0.198***
Hispanic	***-0.084***	***0.143***	***0.190***	***0.205***	***0.283***	***-0.105***	***0.062***	0.058	0.049	*0.079*	0.069
Asian American	***-0.387***	***-0.494***	***-0.546***	***-0.512***	***-0.367***	***-0.044***	***-0.148***	***-0.164***	***-0.144***	***-0.191***	***-0.179***
Female	***0.205***	***0.250***	***0.217***	***0.222***	***0.188***	***0.200***	***0.254***	***0.202***	***0.196***	***0.217***	***0.208***
Disadvantaged	***0.753***	***0.748***	***0.742***	***0.750***	***0.521***	***0.159***	***0.138***	***0.085***	***0.089***	-0.072	***-0.100***
First generation	0.008	0.072	0.061	0.058	0.020	***0.052***	***0.105***	***0.099***	***0.087***	0.028	0.027
Waiver	***-0.176***	0.012	0.020	0.009	0.032	-0.031	*0.126*	*0.132*	*0.103*	0.039	0.037
Applied for Financial Aid	***-0.132***	***-0.145***	***-0.135***	***-0.090***	-0.002	***-0.060***	***-0.058***	***-0.046***	-0.024	-0.002	-0.002
Academic index		***0.430***	***0.362***	***0.361***	***-0.146***		***0.459***	***0.409***	***0.413***	***-0.380***	***-0.376***
AI Sq. X (AI>0)		-0.032	0.026	0.010	***-0.166***		***0.147***	***0.184***	***0.181***	***-0.174***	***-0.164***
AI Sq. X (AI<0)		0.008	0.009	0.012	-0.009		0.019	0.020	0.021	*-0.018*	*-0.018*
Humanities			0.042	0.033	-0.051			0.007	0.002	-0.026	-0.026
Biology			***-0.269***	***-0.258***	***-0.129***			***-0.233***	***-0.229***	***-0.156***	***-0.152***
Physical Sciences			***-0.393***	***-0.383***	***-0.313***			***-0.346***	***-0.350***	***-0.379***	***-0.365***
Engineering			***-0.422***	***-0.411***	***-0.254***			***-0.343***	***-0.341***	***-0.251***	***-0.242***
Mathematics			***-0.402***	***-0.393***	***-0.338***			***-0.374***	***-0.377***	***-0.405***	***-0.392***
Computer Science			***-0.700***	***-0.687***	***-0.491***			***-0.505***	***-0.506***	***-0.502***	***-0.484***
Female X Humanities			-0.072	-0.068	0.004			-0.043	-0.039	-0.003	-0.003
Female X Biology			-0.001	-0.006	-0.019			0.051	0.054	0.008	0.009
Female X Phys Sci			0.045	0.037	0.035			***0.118***	***0.121***	***0.119***	***0.118***
Female X Engineering			***0.162***	***0.159***	0.076			***0.142***	***0.143***	0.018	0.015
Female X Math			0.041	0.035	0.073			0.067	0.069	*0.175*	*0.173*
Female X Comp Sci			***0.215***	***0.214***	***0.249***			***0.297***	***0.301***	***0.291***	***0.287***
Female X African American			***-0.258***	***-0.247***	***-0.218***			***-0.191***	***-0.190***	-0.081	-0.072
Female X Hispanic			***-0.136***	***-0.142***	-0.088			-0.045	-0.050	-0.021	-0.019
Female X Asian American			*0.077*	0.073	0.080			0.029	0.029	0.062	0.061
Disadv X African American			***-0.233***	***-0.254***	***-0.279***			0.001	-0.014	0.055	0.075
Disadv X Hispanic			*0.128*	0.104	0.059			***0.169***	***0.143***	***0.162***	***0.165***
Disadv X Asian American			0.115	***0.119***	0.051			0.050	0.067	0.098	0.102
Observations	130,208	130,208	130,208	130,208	130,160	100,333	100,333	100,333	100,333	100,298	100,298
Pseudo R Sq.	0.048	0.073	0.078	0.082	0.277	0.009	0.024	0.026	0.027	0.340	0.341

*Bold and italicized coefficients are statistically different from zero at the 5% level

*Omitted coefficients are year effects, docket effects, race/ethnicity for Native Americans, Hawaiians, and missing, SAT math, SAT verbal, SAT2 average, high school gpa, interactions of missing SAT2 and race, flag for extremely low grades, indicators for each mother and father education level

*Omitted coefficients for models 3 and beyond include unspecficed major, female and disadvantaged times Native American, Hawaian and missing race, unspecified major. Social Science is the omitted major

*Omitted coefficients for models 4 and beyond include high school and neighborhood cluster indicators and race times missing high school and neighborhood cluster

*Omitted coefficients for models 5 and 6 include indicator variables for each ranking measure and interactions between race and missing alumni interview

*Alumni personal rating excludes those who did not complete an alumni interview

Table B.6.4: Ordered logit estimates of Harvard's Overall Rating and Alumni Overall Rating, baseline dataset

	Final Reader Overall						Alumni Overall					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
African American	***-0.878***	***0.860***	***1.089***	***1.135***	***1.440***	***1.384***	***-0.693***	***0.240***	***0.374***	***0.374***	***0.111***	***0.111***
Hispanic	***-0.289***	***0.486***	***0.581***	***0.625***	***0.890***	***0.870***	***-0.389***	-0.005	0.010	0.001	-0.040	-0.040
Asian American	***0.115***	***-0.262***	***-0.287***	***-0.222***	***-0.129***	***-0.084***	***0.197***	***-0.059***	***-0.045***	-0.020	***0.148***	***0.149***
Female	***-0.034***	***0.215***	***0.185***	***0.187***	***0.125***	***0.094***	-0.037	***0.146***	***0.131***	***0.118***	***-0.076***	***-0.075***
Disadvantaged	***0.585***	***0.640***	***0.836***	***0.832***	***0.687***	***0.622***	***0.179***	***0.137***	***0.136***	***0.137***	0.062	0.061
First generation	***-0.173***	0.004	0.001	0.003	-0.005	-0.001	-0.014	***0.104***	***0.102***	***0.100***	0.051	0.051
Waiver	***-0.522***	0.035	0.034	0.022	***0.105***	***0.104***	***-0.234***	***0.120***	***0.124***	***0.107***	*0.069*	*0.069*
Applied for Financial Aid	***-0.079***	***-0.088***	***-0.086***	***-0.064***	-0.002	0.001	***-0.067***	***-0.047***	***-0.041***	-0.017	0.011	0.011
Academic index		***1.545***	***1.518***	***1.536***	***0.451***	***0.469***		***0.922***	***0.892***	***0.898***	***0.712***	***0.712***
AI Sq. X (AI>0)		***-0.201***	***-0.166***	***-0.164***	***-0.087***	-0.043		***0.331***	***0.348***	***0.348***	***0.315***	***0.316***
AI Sq. X (AI<0)		***0.074***	***0.080***	***0.087***	***0.075***	***0.077***		0.018	0.020	0.023	-0.016	-0.016
Humanities			***0.069***	***0.057***	0.011	0.014			0.042	0.036	0.018	0.019
Biology			***-0.198***	***-0.193***	***-0.056***	-0.042			***-0.163***	***-0.157***	0.046	0.046
Physical Sciences			***-0.227***	***-0.233***	***-0.090***	-0.050			***-0.141***	***-0.145***	***0.196***	***0.196***
Engineering			***-0.266***	***-0.261***	***-0.062***	-0.034			***-0.249***	***-0.244***	0.065	0.065
Mathematics			***-0.218***	***-0.221***	***-0.119***	***-0.075***			***-0.151***	***-0.151***	***0.203***	***0.204***
Computer Science			***-0.377***	***-0.375***	***-0.112***	-0.055			***-0.234***	***-0.232***	***0.259***	***0.259***
Female X Humanities			-0.031	-0.023	0.023	0.032			-0.066	-0.064	-0.020	-0.020
Female X Biology			0.001	0.000	-0.014	-0.007			0.051	0.054	0.031	0.030
Female X Phys Sci			***0.108***	***0.112***	***0.112***	***0.110***			0.050	0.055	-0.037	-0.038
Female X Engineering			***0.139***	***0.136***	0.047	0.049			***0.158***	***0.159***	0.078	0.077
Female X Math			-0.048	-0.047	-0.021	-0.025			-0.061	-0.058	***-0.145***	***-0.146***
Female X Comp Sci			0.104	0.101	0.071	0.047			0.135	0.136	-0.121	-0.120
Female X African American			***-0.119***	***-0.108***	***-0.115***	***-0.086***			***-0.180***	***-0.175***	-0.088	-0.088
Female X Hispanic			***-0.076***	***-0.083***	-0.013	0.003			-0.057	-0.065	-0.024	-0.024
Female X Asian American			0.029	0.025	0.040	0.039			-0.015	-0.013	-0.057	-0.057
Disadv X African American			***-0.638***	***-0.604***	***-0.644***	***-0.619***			-0.053	-0.043	-0.040	-0.039
Disadv X Hispanic			***-0.324***	***-0.326***	***-0.345***	***-0.360***			0.070	0.067	-0.050	-0.050
Disadv X Asian American			0.090	***0.108***	***0.126***	***0.132***			-0.018	0.006	-0.043	-0.042
Observations	130208	130208	130208	130208	130160	130160	100,333	100,333	100,333	100,333	100,298	100,298
Pseudo R Sq.	0.048	0.182	0.184	0.186	0.314	0.328	0.032	0.092	0.093	0.095	0.372	0.372

*Bold and italicized coefficients are statistically different from zero at the 5% level

*Omitted coefficients are year effects, docket effects, race/ethnicity for Native Americans, Hawaiians, and missing,
SAT math, SAT verbal, SAT2 average, high school gpa, interactions of missing SAT2 and race, flag for extremely low grades, indicators for each mother and father education level

*Omitted coefficients for models 3 and beyond include unspecficed major, female and disadvantaged times Native American, Hawaian and missing race, unspecified major. Social Science is the omitted major

*Omitted coefficients for models 4 and beyond include high school and neighborhood cluster indicators and race times missing high school and neighborhood cluster

*Omitted coefficients for models 5 and 6 include indicator variables for each ranking measure and interactions between race and missing alumni interview

*Alumni overall rating excludes those who did not complete an alumni interview

Table B.6.5: Ordered logit estimates of Harvard's Academic and Extracurricular Ratings, expanded dataset

	Academic						Extracurricular					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
African American	***-1.709***	***0.073***	0.029	0.031	-0.023	-0.018	***-0.525***	-0.027	-0.069	-0.041	***-0.184***	***-0.253***
Hispanic	***-0.961***	***-0.224***	***-0.177***	***-0.151***	***-0.148***	***-0.145***	***-0.322***	***-0.148***	***-0.166***	***-0.154***	***-0.161***	***-0.194***
Asian American	***0.605***	0.010	0.029	0.049	***0.104***	***0.102***	***0.166***	***0.077***	***0.103***	***0.136***	***0.159***	***0.194***
Female	***-0.330***	***0.119***	***0.179***	***0.169***	***0.134***	***0.134***	***0.246***	***0.279***	***0.156***	***0.154***	0.046	0.027
Disadvantaged	***0.148***	***0.054***	***0.150***	***0.158***	0.064	0.069	***0.461***	***0.438***	***0.487***	***0.481***	***0.315***	***0.252***
First generation	***-0.215***	-0.036	-0.029	-0.027	-0.040	-0.040	-0.023	0.043	0.053	0.049	0.033	0.031
Waiver	***-0.723***	***-0.068***	***-0.071***	***-0.080***	***-0.078***	***-0.078***	***-0.235***	-0.040	-0.033	***-0.055***	***-0.088***	***-0.090***
Applied for Financial Aid	***-0.121***	***-0.093***	***-0.095***	***-0.068***	***-0.052***	***-0.052***	***-0.083***	***-0.093***	***-0.062***	***-0.043***	***-0.047***	***-0.046***
Early Decision	***0.446***	***0.191***	0.067	***0.071***	-0.007	-0.005	***0.474***	***0.382***	***0.291***	***0.286***	***0.202***	***0.171***
Athlete	***-0.906***	***0.165***	***0.200***	***0.188***	0.100	0.110	***-1.822***	***-1.624***	***-1.615***	***-1.613***	***-1.070***	***-1.145***
Legacy	***-0.265***	0.013	0.048	0.012	-0.040	-0.036	0.126	0.189	0.185	0.173	0.129	0.088
Double Legacy	***0.365***	0.092	0.100	0.089	0.082	0.084	0.033	-0.038	-0.039	-0.052	-0.025	-0.052
Faculty or Staff Child	***0.332***	***0.333***	***0.339***	***0.313***	0.297	0.299	0.018	-0.003	0.009	0.019	0.018	-0.025
Dean's director	0.007	***0.177***	***0.183***	***0.147***	0.032	0.040	***0.303***	***0.336***	***0.288***	***0.257***	***0.159***	0.089
Academic index		***3.756***	***3.759***	***3.766***	***3.644***	***3.644***		***0.573***	***0.461***	***0.466***	***0.097***	***0.100***
AI Sq. X (AI>0)		***1.208***	***1.205***	***1.204***	***1.155***	***1.152***		***0.117***	***0.175***	***0.175***	***0.060***	***0.085***
AI Sq. X (AI<0)		***0.417***	***0.417***	***0.421***	***0.412***	***0.411***		0.008	0.008	0.010	***-0.017***	***-0.017***
Humanities			***0.093***	***0.081***	0.052	0.052			***0.109***	***0.102***	0.033	0.039
Biology			0.050	0.058	***0.097***	***0.096***			***-0.570***	***-0.567***	***-0.536***	***-0.519***
Physical Sciences			***0.189***	***0.192***	***0.225***	***0.223***			***-0.681***	***-0.686***	***-0.716***	***-0.685***
Engineering			-0.019	-0.008	0.067	0.066			***-0.769***	***-0.769***	***-0.688***	***-0.664***
Mathematics			***0.139***	***0.147***	***0.172***	***0.170***			***-0.712***	***-0.718***	***-0.748***	***-0.703***
Computer Science			-0.050	-0.050	0.006	0.003			***-0.745***	***-0.748***	***-0.748***	***-0.699***
Female X Humanities			-0.077	-0.070	-0.044	-0.044			-0.052	-0.050	-0.014	-0.012
Female X Biology			-0.048	-0.048	-0.062	-0.062			***0.076***	***0.075***	***0.077***	***0.079***
Female X Phys Sci			-0.075	-0.070	-0.077	-0.077			***0.181***	***0.180***	***0.191***	***0.189***
Female X Engineering			0.011	0.008	-0.053	-0.053			***0.250***	***0.250***	***0.212***	***0.210***
Female X Math			***-0.221***	***-0.223***	***-0.219***	***-0.218***			***0.217***	***0.219***	***0.284***	***0.269***
Female X Comp Sci			-0.003	-0.009	-0.029	-0.029			***0.160***	***0.157***	***0.165***	0.146
Female X African American			0.067	0.068	***0.101***	***0.100***			***0.128***	***0.134***	***0.170***	***0.191***
Female X Hispanic			-0.075	-0.077	-0.058	-0.059			0.037	0.028	0.068	0.078
Female X Asian American			***-0.068***	***-0.068***	-0.066	-0.066			-0.001	-0.001	-0.003	-0.006
Disadv X African American			-0.096	-0.106	-0.110	-0.113			-0.015	0.000	0.077	0.112
Disadv X Hispanic			***-0.204***	***-0.211***	***-0.253***	***-0.254***			0.022	0.036	0.035	0.045
Disadv X Asian American			-0.073	-0.086	***-0.120***	***-0.121***			***-0.189***	***-0.161***	***-0.155***	***-0.155***
Early Dec.X African American			***0.171***	***0.167***	***0.168***	***0.169***			0.078	0.075	0.029	0.013
Early Dec.X Hispanic			***0.285***	***0.270***	***0.256***	***0.255***			0.018	0.027	-0.043	-0.039
Early Dec.X Asian American			***0.246***	***0.234***	***0.207***	***0.206***			***0.194***	***0.190***	***0.112***	***0.123***
Legacy X African American			-0.259	-0.255	-0.292	-0.291			0.222	0.187	0.244	0.230
Legacy X Hispanic			-0.120	-0.114	-0.182	-0.183			-0.051	-0.062	-0.138	-0.105
Legacy X Asian American			0.036	0.055	0.050	0.049			***-0.223***	***-0.238***	***-0.252***	***-0.259***
Observations	150701	150701	150701	150701	150643	150643	149573	149573	149573	149573	149515	149515
Pseudo R Sq.	0.153	0.545	0.545	0.546	0.560	0.560	0.032	0.055	0.067	0.070	0.131	0.140

*Bold and italicized coefficients are statistically different from zero at the 5% level

*Omitted coefficients are year effects, docket effects, race/ethnicity for Native Americans, Hawaiians, and missing, SAT math, SAT verbal, SAT2 average, high school gpa, interactions of missing SAT2 and race, flag for extremely low grades, indicators for each mother and father education level

*Omitted coefficients for models 3 and beyond include unspecficed major, female, disadvantaged, early action, and legacy times Native American, Hawaian and missing race, unspecified major Social Science is the omitted major

*Omitted coefficients for models 4 and beyond include high school and neighborhood cluster indicators and race times missing high school and neighborhood cluster

*Omitted coefficients for models 5 and 6 include indicator variables for each ranking measure and interactions between race and missing alumni interview

Table B.6.6: Ordered logit estimates of Harvard's School Support Measures, expanded dataset

	Teacher 1						Teacher 2						Counselor					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
African American	***-0.618***	0.043	0.100	0.099	-0.006	***-0.120***	***-0.569***	0.068	***0.175***	***0.186***	0.074	-0.037	***-0.590***	***0.185***	***0.197***	***0.227***	***0.139***	-0.020
Hispanic	***-0.295***	-0.018	-0.023	-0.038	-0.012	-0.065	***-0.270***	-0.010	0.008	-0.010	0.021	-0.031	***-0.288***	0.024	-0.010	-0.011	0.004	-0.067
Asian American	-0.061	***-0.267***	***-0.274***	***-0.257***	***-0.193***	***-0.140***	***-0.099***	***-0.298***	***-0.319***	***-0.298***	***-0.231***	***-0.18***	***-0.064***	***-0.272***	***-0.289***	***-0.227***	***-0.130***	***-0.058***
Female	-0.007	***0.070***	***0.116***	***0.131***	***0.069***	0.039	-0.039	***0.042***	***0.123***	***0.141***	***0.081***	0.053	***0.024***	***0.113***	***0.091***	***0.116***	0.047	0.003
Disadvantaged	***0.432***	***0.423***	***0.374***	***0.360***	***0.173***	0.077	***0.455***	***0.440***	***0.428***	***0.419***	***0.249***	***0.156***	***0.451***	***0.430***	***0.348***	***0.353***	***0.138***	-0.003
First generation	0.032	***0.094***	***0.090***	***0.070***	0.049	0.046	0.007	***0.075***	***0.069***	0.049	0.024	0.024	0.033	***0.111***	***0.101***	***0.083***	0.062	0.057
Waiver	***-0.190***	0.042	0.043	-0.041	-0.034	-0.040	***-0.197***	0.035	0.037	-0.046	-0.041	-0.053	***-0.180***	***0.102***	***0.104***	***0.040***	***0.078***	***0.068***
Applied for Financial Aid	-0.017	-0.032	-0.026	-0.071	-0.027	-0.026	-0.002	-0.016	-0.011	-0.049	-0.006	-0.004	***-0.115***	***-0.143***	***-0.135***	***-0.129***	***-0.083***	***-0.080***
Early Decision	***0.497***	***0.370***	***0.317***	***0.314***	***0.162***	***0.118***	***0.531***	***0.400***	***0.356***	***0.351***	***0.180***	***0.139***	***0.616***	***0.480***	***0.386***	***0.387***	***0.211***	***0.151***
Athlete	-0.079	***0.373***	***0.389***	***0.453***	***0.300***	***0.147***	***-0.211***	***0.244***	***0.259***	***0.315***	***0.159***	0.019	0.023	***0.496***	***0.515***	***0.537***	***0.315***	***0.126***
Legacy	-0.023	***0.120***	0.082	0.087	0.000	-0.068	-0.038	***0.100***	0.079	0.080	0.018	-0.049	-0.060	***0.107***	0.077	0.066	-0.049	***-0.136***
Double Legacy	0.113	-0.003	0.002	-0.021	-0.024	-0.053	0.076	-0.033	-0.030	-0.047	-0.053	-0.075	0.103	-0.020	-0.019	-0.031	-0.033	-0.080
Faculty or Staff Child	0.128	0.116	0.113	0.103	0.041	-0.010	0.142	0.119	0.114	0.106	0.060	0.013	0.102	0.089	0.091	0.097	0.029	-0.028
Dean's director	***0.141***	***0.239***	***0.228***	***0.215***	0.058	-0.035	***0.228***	***0.342***	***0.330***	***0.313***	***0.182***	0.093	***0.311***	***0.443***	***0.438***	***0.397***	***0.254***	***0.129***
Academic index		***0.508***	***0.484***	***0.522***	***0.111***	***0.114***		***0.506***	***0.483***	***0.518***	***0.119***	***0.122***		***0.549***	***0.523***	***0.543***	-0.018	-0.013
AI Sq. X (AI>0)		***0.338***	***0.341***	***0.355***	***0.167***	***0.197***		***0.353***	***0.357***	***0.371***	***0.206***	***0.232***		***0.304***	***0.312***	***0.310***	***0.151***	***0.191***
AI Sq. X (AI<0)		0.012	0.012	0.012	-0.010	-0.012		0.012	0.013	0.013	-0.006	-0.006		***-0.018***	-0.017	-0.015	***-0.061***	***-0.061***
Humanities			***0.171***	***0.172***	***0.123***	***0.128***			***0.183***	***0.182***	***0.133***	***0.144***			***0.110***	***0.097***	0.027	0.028
Biology			-0.045	***-0.061***	0.024	0.044			***-0.054***	***-0.067***	0.010	0.035			***-0.125***	***-0.127***	-0.022	0.007
Physical Sciences			***0.092***	0.062	***0.132***	***0.175***			***0.087***	0.059	***0.118***	***0.159***			-0.043	-0.052	0.036	0.093
Engineering			***-0.122***	***-0.139***	-0.022	0.011			***-0.103***	***-0.118***	0.000	0.037			***-0.182***	***-0.190***	-0.043	0.001
Mathematics			***0.118***	***0.094***	***0.137***	***0.193***			***0.137***	***0.113***	***0.150***	***0.207***			0.016	0.006	0.080	0.154
Computer Science			***-0.127***	***-0.146***	-0.007	0.064			***-0.094***	***-0.110***	0.026	0.103			***-0.280***	***-0.283***	***-0.108***	-0.005
Female X Humanities			***-0.124***	***-0.123***	-0.071	-0.067			***-0.190***	***-0.189***	***-0.154***	***-0.15***			-0.084	-0.075	-0.009	0.006
Female X Biology			-0.045	-0.043	-0.038	-0.034			***-0.091***	***-0.092***	***-0.091***	***-0.088***			0.029	0.025	0.037	0.044
Female X Phys Sci			***-0.115***	***-0.104***	***-0.122***	***-0.126***			-0.106	-0.098	-0.108	-0.104			0.021	0.019	0.024	0.029
Female X Engineering			0.020	0.018	-0.023	-0.028			0.003	0.000	-0.045	-0.051			***0.132***	***0.129***	***0.097***	***0.095***
Female X Math			***-0.193***	***-0.194***	***-0.153***	***-0.171***			***-0.219***	***-0.224***	***-0.173***	***-0.19***			-0.050	-0.056	0.006	-0.015
Female X Comp Sci			0.013	0.016	0.014	-0.013			-0.099	-0.095	-0.111	-0.143			0.051	0.046	0.033	-0.008
Female X African American			***-0.107***	***-0.107***	***-0.074***	-0.039			***-0.135***	***-0.132***	-0.093	-0.068			-0.038	-0.035	0.019	0.067
Female X Hispanic			-0.043	-0.048	-0.008	0.007			***-0.090***	***-0.098***	-0.069	-0.057			-0.033	-0.043	0.006	0.024
Female X Asian American			0.015	0.011	0.021	0.018			0.035	0.030	0.051	0.047			-0.005	-0.018	-0.008	-0.013
Disadv X African American			0.074	0.054	***0.113***	***0.167***			-0.019	-0.051	-0.014	0.042			0.062	0.017	0.063	***0.151***
Disadv X Hispanic			***0.159***	0.104	0.104	0.114			0.113	0.055	0.024	0.028			***0.248***	***0.187***	***0.205***	***0.225***
Disadv X Asian American			-0.003	0.032	0.031	0.034			-0.003	0.034	0.021	0.022			0.087	***0.119***	***0.125***	***0.136***
Early Dec.X African American			0.051	0.059	0.020	-0.015			-0.053	-0.046	-0.079	-0.107			***0.211***	***0.214***	***0.202***	***0.160***
Early Dec.X Hispanic			0.019	0.058	0.011	0.013			0.079	0.119	0.097	0.093			0.034	0.060	0.052	0.044
Early Dec.X Asian American			***0.110***	***0.103***	0.012	0.030			***0.158***	***0.151***	0.062	0.076			***0.218***	***0.197***	***0.134***	***0.156***
Legacy X African American			0.138	0.154	0.209	0.203			0.071	0.076	0.108	0.117			0.023	0.006	0.043	0.032
Legacy X Hispanic			-0.095	-0.095	-0.132	-0.078			-0.105	-0.098	-0.130	-0.071			0.274	0.281	***0.348***	***0.422***
Legacy X Asian American			0.129	0.120	0.130	0.116			0.083	0.067	0.047	0.051			0.112	0.085	0.049	0.035
Observations	144845	144845	144845	144845	144803	144803	122552	122552	122552	122552	122512	122512	142102	142102	142102	142102	142102	142102
Pseudo R Sq.	0.026	0.075	0.076	0.081	0.140	0.159	0.026	0.072	0.073	0.078	0.135	0.154	0.043	0.102	0.103	0.107	0.182	0.215

*Bold and italicized coefficients are statistically different from zero at the 5% level

*Omitted coefficients are year effects, docket effects, race/ethnicity for Native Americans, Hawaiians, and missing,
SAT math, SAT verbal, SAT2 average, high school gpa, interactions of missing SAT2 and race, flag for extremely low grades, indicators for each mother and father education level

*Omitted coefficients for models 3 and beyond include unspecficed major, female, disadvantaged, early action, and legacy times Native American, Hawaian and missing race, unspecified major
Social Science is the omitted major

*Omitted coefficients for models 4 and beyond include high school and neighborhood cluster indicators and race times missing high school and neighborhood cluster

*Omitted coefficients for models 5 and 6 include indicator variables for each ranking measure and interactions between race and missing alumni interview

Table B.6.7: Ordered logit estimates of Harvard's Personal Rating and Alumni Personal Rating, expanded dataset

	Personal Rating					Alumni Personal					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
African American	***-0.100***	***0.457***	***0.686***	***0.705***	***0.681***	***-0.141***	***0.279***	***0.422***	***0.431***	***0.232***	***0.201***
Hispanic	***-0.083***	***0.138***	***0.181***	***0.199***	***0.284***	***-0.101***	***0.071***	***0.064***	0.054	***0.093***	***0.083***
Asian American	***-0.366***	***-0.479***	***-0.542***	***-0.507***	***-0.366***	-0.028	***-0.139***	***-0.165***	***-0.144***	***-0.188***	***-0.175***
Female	***0.197***	***0.240***	***0.218***	***0.224***	***0.184***	***0.197***	***0.254***	***0.208***	***0.204***	***0.234***	***0.225***
Disadvantaged	***0.758***	***0.750***	***0.752***	***0.760***	***0.549***	***0.173***	***0.148***	***0.110***	***0.113***	-0.057	***-0.088***
First generation	0.016	***0.081***	***0.069***	***0.067***	0.031	0.053	***0.107***	***0.102***	***0.090***	0.032	0.030
Waiver	***-0.181***	0.009	0.017	0.009	0.022	-0.032	***0.132***	***0.137***	***0.107***	***0.049***	***0.047***
Applied for Financial Aid	***-0.139***	***-0.153***	***-0.143***	***-0.096***	-0.004	***-0.061***	***-0.060***	***-0.047***	***-0.028***	0.005	0.006
Early Decision	***0.630***	***0.544***	***0.479***	***0.474***	***0.238***	***0.265***	***0.192***	***0.162***	***0.159***	***0.113***	***0.097***
Athlete	***0.899***	***1.190***	***1.196***	***1.171***	***0.942***	***0.234***	***0.494***	***0.499***	***0.501***	***-0.666***	***-0.691***
Legacy	***0.361***	***0.453***	***0.413***	***0.381***	***0.324***	***0.123***	***0.186***	***0.162***	***0.143***	-0.056	-0.074
Double Legacy	***0.190***	0.115	0.113	0.101	0.172	0.135	0.078	0.076	0.068	-0.035	-0.051
Faculty or Staff Child	***0.291***	***0.286***	***0.296***	***0.278***	0.265	-0.042	-0.069	-0.063	-0.074	-0.013	-0.029
Dean's director	***0.701***	***0.762***	***0.743***	***0.699***	***0.549***	***0.330***	***0.357***	***0.335***	***0.313***	***0.113***	0.083
Academic index		***0.450***	***0.382***	***0.379***	***-0.104***		***0.482***	***0.432***	***0.435***	***-0.358***	***-0.356***
AI Sq. X (AI>0)		-0.022	0.031	0.016	***-0.186***		***0.146***	***0.177***	***0.174***	***-0.201***	***-0.189***
AI Sq. X (AI<0)		0.010	0.012	0.015	0.000		***0.022***	***0.023***	***0.023***	-0.014	-0.015
Humanities			0.054	0.042	-0.057			0.028	0.022	-0.026	-0.026
Biology			***-0.265***	***-0.254***	***-0.140***			***-0.212***	***-0.210***	***-0.135***	***-0.130***
Physical Sciences			***-0.365***	***-0.353***	***-0.276***			***-0.330***	***-0.332***	***-0.356***	***-0.344***
Engineering			***-0.402***	***-0.390***	***-0.238***			***-0.323***	***-0.323***	***-0.221***	***-0.212***
Mathematics			***-0.414***	***-0.404***	***-0.358***			***-0.360***	***-0.362***	***-0.392***	***-0.377***
Computer Science			***-0.726***	***-0.711***	***-0.518***			***-0.469***	***-0.470***	***-0.473***	***-0.453***
Female X Humanities			-0.091	-0.086	-0.003			-0.055	-0.051	-0.003	-0.002
Female X Biology			-0.007	-0.013	-0.018			0.050	0.052	0.003	0.004
Female X Phys Sci			0.024	0.015	-0.009			0.096	***0.097***	0.103	0.104
Female X Engineering			***0.132***	***0.127***	0.055			***0.123***	***0.124***	-0.014	-0.015
Female X Math			0.079	0.075	0.120			0.070	0.072	***0.179***	***0.176***
Female X Comp Sci			***0.238***	***0.233***	***0.247***			***0.268***	***0.270***	***0.270***	***0.265***
Female X African American			***-0.265***	***-0.257***	***-0.225***			***-0.175***	***-0.175***	-0.072	-0.063
Female X Hispanic			***-0.125***	***-0.136***	-0.088			-0.038	-0.044	-0.035	-0.034
Female X Asian American			***0.068***	0.063	0.074			0.022	0.021	0.054	0.054
Disadv X African American			***-0.223***	***-0.242***	***-0.282***			-0.005	-0.021	0.073	0.093
Disadv X Hispanic			0.104	0.080	0.008			***0.137***	***0.111***	***0.135***	***0.140***
Disadv X Asian American			0.105	0.106	0.054			0.028	0.045	0.082	0.087
Early Dec.X African American			***0.160***	***0.163***	0.125			-0.080	-0.077	-0.011	-0.012
Early Dec.X Hispanic			0.016	0.029	-0.018			-0.012	-0.007	-0.061	-0.058
Early Dec.X Asian American			***0.113***	***0.103***	-0.030			***0.118***	***0.116***	0.003	0.012
Legacy X African American			0.158	0.133	0.093			-0.239	-0.246	-0.187	-0.195
Legacy X Hispanic			-0.041	-0.029	-0.152			0.206	0.211	0.028	0.040
Legacy X Asian American			0.184	0.172	0.105			0.075	0.076	0.241	0.240
Observations	150701	150701	150701	150701	150643	118261	118261	118261	118261	118216	118216
Pseudo R Sq.	0.060	0.085	0.090	0.094	0.284	0.011	0.026	0.028	0.029	0.341	0.342

*Bold and italicized coefficients are statistically different from zero at the 5% level

*Omitted coefficients are year effects, docket effects, race/ethnicity for Native Americans, Hawaiians, and missing,
SAT math, SAT verbal, SAT2 average, high school gpa, interactions of missing SAT2 and race, flag for extremely low grades, indicators for each mother and father education level

*Omitted coefficients for models 3 and beyond include unspecficed major, female, disadvantaged, early action, and legacy times Native American, Hawaian and missing race, unspecified major
Social Science is the omitted major

*Omitted coefficients for models 4 and beyond include high school and neighborhood cluster indicators and race times missing high school and neighborhood cluster

*Omitted coefficients for models 5 and 6 include indicator variables for each ranking measure and interactions between race and missing alumni interview

*Alumni personal rating excludes those who did not complete an alumni interview

Table B.6.8: Ordered logit estimates of Harvard's Overall Rating and Alumni Overall Rating, expanded dataset

	Overall Rating						Alumni Overall					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
African American	***-0.840***	***0.895***	***1.101***	***1.146***	***1.443***	***1.384***	***-0.686***	***0.233***	***0.370***	***0.370***	***0.103***	***0.103***
Hispanic	***-0.268***	***0.494***	***0.583***	***0.623***	***0.898***	***0.878***	***-0.376***	0.004	0.005	-0.003	-0.055	-0.056
Asian American	***0.136***	***-0.257***	***-0.292***	***-0.229***	***-0.133***	***-0.089***	***0.217***	***-0.048***	***-0.046***	-0.022	***0.143***	***0.143***
Female	***-0.037***	***0.207***	***0.186***	***0.189***	***0.121***	***0.091***	***-0.040***	***0.141***	***0.126***	***0.115***	***-0.093***	***-0.092***
Disadvantaged	***0.593***	***0.632***	***0.819***	***0.819***	***0.668***	***0.594***	***0.191***	***0.141***	***0.153***	***0.152***	0.061	0.061
First generation	***-0.165***	0.021	0.017	0.019	0.020	0.022	-0.014	0.103	0.101	0.098	0.046	0.046
Waiver	***-0.522***	0.044	0.044	0.033	***0.115***	***0.115***	***-0.238***	***0.121***	***0.125***	***0.103***	***0.059***	***0.059***
Applied for Financial Aid	***-0.103***	***-0.116***	***-0.112***	***-0.084***	-0.016	-0.014	***-0.074***	***-0.056***	***-0.049***	***-0.029***	-0.002	-0.002
Early Decision	***0.696***	***0.566***	***0.484***	***0.482***	***0.288***	***0.252***	***0.300***	***0.161***	***0.112***	***0.111***	-0.050	-0.050
Athlete	***1.431***	***2.636***	***2.663***	***2.667***	***2.768***	***2.680***	***0.569***	***1.172***	***1.189***	***1.197***	***1.244***	***1.244***
Legacy	***0.589***	***0.955***	***0.969***	***0.938***	***1.005***	***0.969***	***0.100***	***0.241***	***0.256***	***0.227***	***0.185***	***0.185***
Double Legacy	***0.471***	***0.278***	***0.284***	***0.262***	***0.342***	***0.335***	***0.241***	0.133	0.134	0.123	0.106	0.107
Faculty or Staff Child	***0.892***	***0.786***	***0.802***	***0.784***	***0.859***	***0.845***	0.006	-0.051	-0.046	-0.068	-0.119	-0.119
Dean's director	***0.588***	***0.778***	***0.761***	***0.714***	***0.533***	***0.434***	***0.277***	***0.342***	***0.328***	***0.297***	0.066	0.066
Academic index		***1.550***	***1.520***	***1.536***	***0.446***	***0.458***		***0.931***	***0.900***	***0.906***	***0.701***	***0.701***
AI Sq. X (AI>0)		***-0.156***	***-0.123***	***-0.124***	***-0.097***	***-0.048***		***0.352***	***0.364***	***0.364***	***0.345***	***0.345***
AI Sq. X (AI<0)		***0.071***	***0.077***	***0.084***	***0.073***	***0.073***		***0.017***	***0.019***	***0.022***	***-0.018***	***-0.018***
Humanities			***0.086***	***0.071***	0.008	0.015			***0.069***	***0.060***	0.034	0.035
Biology			***-0.199***	***-0.195***	***-0.063***	***-0.045***			***-0.153***	***-0.151***	0.035	0.035
Physical Sciences			***-0.215***	***-0.218***	***-0.074***	-0.034			***-0.131***	***-0.136***	***0.188***	***0.188***
Engineering			***-0.273***	***-0.268***	***-0.065***	-0.036			***-0.247***	***-0.244***	0.043	0.043
Mathematics			***-0.201***	***-0.203***	***-0.106***	-0.054			***-0.136***	***-0.137***	***0.201***	***0.201***
Computer Science			***-0.381***	***-0.378***	***-0.105***	-0.042			***-0.204***	***-0.204***	***0.260***	***0.260***
Female X Humanities			-0.045	-0.035	0.027	0.033			-0.079	-0.075	-0.028	-0.028
Female X Biology			-0.005	-0.006	-0.014	-0.008			0.056	0.061	0.041	0.040
Female X Phys Sci			***0.100***	***0.102***	***0.093***	***0.099***			0.019	0.023	-0.049	-0.050
Female X Engineering			***0.146***	***0.143***	0.063	0.067			0.164	0.167	0.108	0.108
Female X Math			-0.063	-0.063	-0.032	-0.046			-0.065	-0.062	-0.147	-0.147
Female X Comp Sci			0.105	0.103	0.065	0.040			0.115	0.116	-0.126	-0.125
Female X African American			***-0.120***	***-0.110***	***-0.105***	-0.071			-0.169	-0.167	-0.084	-0.085
Female X Hispanic			-0.087	-0.097	-0.023	-0.007			-0.040	-0.049	0.001	0.001
Female X Asian American			0.023	0.018	0.041	0.041			-0.021	-0.020	-0.053	-0.053
Disadv X African American			***-0.625***	***-0.594***	***-0.640***	***-0.613***			-0.067	-0.061	-0.071	-0.070
Disadv X Hispanic			***-0.294***	***-0.299***	***-0.328***	***-0.334***			0.052	0.046	-0.045	-0.046
Disadv X Asian American			0.089	0.103	***0.125***	***0.133***			-0.033	-0.008	-0.039	-0.038
Early Dec.X African American			***0.219***	***0.212***	***0.134***	0.108			-0.060	-0.066	-0.052	-0.052
Early Dec.X Hispanic			0.085	0.086	0.006	0.009			0.028	0.028	0.058	0.058
Early Dec.X Asian American			***0.142***	***0.131***	-0.005	0.019			0.164	0.159	0.074	0.073
Legacy X African American			***-0.362***	***-0.395***	***-0.583***	***-0.620***			-0.142	-0.134	0.016	0.016
Legacy X Hispanic			***-0.294***	***-0.287***	***-0.421***	***-0.413***			0.237	0.239	0.164	0.164
Legacy X Asian American			0.147	0.139	***0.210***	***0.200***			-0.140	-0.130	-0.263	-0.263
Observations	150701	150701	150701	150701	150643	150643	118261	118261	118261	118261	118216	118216
Pseudo R Sq.	0.060	0.192	0.194	0.196	0.323	0.338	0.034	0.095	0.096	0.097	0.373	0.373

*Bold and italicized coefficients are statistically different from zero at the 5% level

*Omitted coefficients are year effects, docket effects, race/ethnicity for Native Americans, Hawaiians, and missing,
SAT math, SAT verbal, SAT2 average, high school gpa, interactions of missing SAT2 and race, flag for extremely low grades, indicators for each mother and father education level

*Omitted coefficients for models 3 and beyond include unspecficed major, female, disadvantaged, early action, and legacy times Native American, Hawaian and missing race, unspecified major
Social Science is the omitted major

*Omitted coefficients for models 4 and beyond include high school and neighborhood cluster indicators and race times missing high school and neighborhood cluster

*Omitted coefficients for models 5 and 6 include indicator variables for each ranking measure and interactions between race and missing alumni interview

*Alumni personal rating excludes those who did not complete an alumni interview

Table B.6.9: Generalized Ordered Logit Model of Harvard's Overall Rating

	Baseline Dataset			Expanded Dataset	
	Model 5	Model 6		Model 5	Model 6
African American	***1.355***	***1.311***		***1.352***	***1.311***
additional advantage at 3/3+ cutoff	***0.453***	***0.422***		***0.483***	***0.450***
additional advantage at 3+/2 cutoff	***0.893***	***0.882***		***0.836***	***0.819***
Hispanic	***0.928***	***0.925***		***0.929***	***0.926***
additional advantage at 3/3+ cutoff	***0.100***	***0.075***		***0.137***	***0.114***
additional advantage at 3+/2 cutoff	***0.266***	***0.254***		***0.198***	***0.180***
Asian American	***-0.068***	-0.039		***-0.088***	***-0.062***
additional disadvantage at 3/3+ cutoff	***-0.108***	***-0.070***		***-0.065***	-0.019
additional disadvantage at 3+/2 cutoff	***-0.130***	-0.077		***-0.112***	-0.055
Female	***0.145***	***0.115***		***0.136***	***0.106***
Disadvantaged	***0.760***	***0.684***		***0.737***	***0.650***
First generation	***0.065***	***0.071***		***0.078***	***0.081***
Waiver	***0.181***	***0.187***		***0.195***	***0.202***
Applied for Financial Aid	-0.014	-0.013		***-0.031***	***-0.030***
Early Decision				***0.399***	***0.365***
Athlete				***2.829***	***2.748***
Legacy				***1.018***	***0.992***
Double Legacy				***0.327***	***0.328***
Faculty or Staff Child				***1.150***	***1.141***
Dean's director				***0.564***	***0.463***
Academic index	***0.562***	***0.571***		***0.543***	***0.544***
AI Sq. X (AI>0)	-0.053	-0.018		***-0.056***	-0.015
AI Sq. X (AI<0)	***0.044***	***0.043***		***0.038***	0.032
Humanities	0.048	0.053		0.039	0.048
Biology	***-0.059***	-0.042		***-0.065***	-0.044
Physical Sciences	***-0.094***	-0.049		***-0.077***	-0.032
Engineering	***-0.055***	-0.022		***-0.058***	-0.024
Mathematics	***-0.102***	-0.055		***-0.090***	-0.033
Computer Science	***-0.105***	-0.040		***-0.103***	-0.029
Female X Humanities	-0.022	-0.012		-0.014	-0.005
Female X Biology	-0.045	-0.038		-0.049	-0.042
Female X Phys Sci	***0.121***	***0.121***		0.094	0.100
Female X Engineering	0.055	0.054		0.065	0.068
Female X Math	-0.018	-0.022		-0.025	-0.041
Female X Comp Sci	0.059	0.037		0.049	0.028
Female X African American	-0.050	-0.025		-0.027	0.003
Female X Hispanic	0.040	0.049		0.021	0.030
Female X Asian American	0.038	0.036		0.044	0.043
Disadv X African American	***-0.609***	***-0.586***		***-0.628***	***-0.605***
Disadv X Hispanic	***-0.351***	***-0.378***		***-0.328***	***-0.343***
Disadv X Asian American	0.101	***0.114***		***0.107***	***0.122***
Early Dec.X African American				-0.054	-0.086
Early Dec.X Hispanic				-0.041	-0.032
Early Dec.X Asian American				0.020	0.035
Legacy X African American				***-0.638***	***-0.680***
Legacy X Hispanic				***-0.493***	***-0.491***
Legacy X Asian American				***0.331***	***0.320***
Observations	130,160	130,160		150,643	150,642
Pseudo R Sq.	0.3365	0.3529		0.3518	0.3694

*Bold and italicized coefficients are statistically different from zero at the 5% level

*Omitted coefficients are year effects, docket effects, race/ethnicity for Native Americans, Hawaiians, and missing, SAT math, SAT verbal, SAT2 average, high school gpa, interactions of missing SAT2 and race, flag for extremely low grades, indicators for each mother and father education level, unspecified major, female, disadvantaged, early action, and legacy times Native American, Hawaian and missing race, unspecified major, high school and neighborhood cluster indicators, race times missing high school and neighborhood cluster, indicator variables for each ranking measure, interactions between race and missing alumni interview, and cutpoints interacted with year

* Social Science is the omitted major

*calculated using gologitComponentsExpIndices.do

Table B.6.10: Probability of receiving each overall rating for own race/ethnicity and counterfactual race/ethnicity

		Own Race	if White	if African American	if Hispanic	if Asian American
Panel 1: Baseline dataset including personal rating						
White	<3	0.438		0.277	0.316	0.440
	3	0.392		0.365	0.412	0.397
	3+	0.129		0.206	0.184	0.125
	>3+	0.041		0.152	0.088	0.039
African American	<3	0.665	0.763		0.691	0.762
	3	0.209	0.179		0.216	0.182
	3+	0.081	0.046		0.069	0.045
	>3+	0.045	0.011		0.025	0.011
Hispanic	<3	0.588	0.682	0.554		0.681
	3	0.282	0.238	0.270		0.241
	3+	0.095	0.065	0.112		0.063
	>3+	0.035	0.016	0.063		0.015
Asian American	<3	0.396	0.394	0.242	0.278	
	3	0.426	0.420	0.369	0.426	
	3+	0.138	0.143	0.229	0.205	
	>3+	0.040	0.043	0.160	0.091	
Panel 2: Expanded dataset, preferred model						
White	<3	0.404		0.250	0.291	0.411
	3	0.392		0.340	0.393	0.395
	3+	0.143		0.213	0.200	0.138
	>3+	0.061		0.197	0.116	0.056
African American	<3	0.641	0.746		0.670	0.748
	3	0.214	0.189		0.223	0.190
	3+	0.089	0.050		0.076	0.048
	>3+	0.056	0.015		0.031	0.014
Hispanic	<3	0.566	0.661	0.529		0.665
	3	0.286	0.249	0.270		0.249
	3+	0.105	0.069	0.122		0.066
	>3+	0.044	0.022	0.079		0.020
Asian American	<3	0.374	0.367	0.220	0.257	
	3	0.421	0.417	0.340	0.402	
	3+	0.150	0.156	0.233	0.221	
	>3+	0.055	0.060	0.207	0.119	
Panel 3: Expanded sample, including personal rating						
White	<3	0.405		0.256	0.293	0.408
	3	0.392		0.353	0.399	0.391
	3+	0.143		0.209	0.196	0.142
	>3+	0.061		0.182	0.111	0.059
African American	<3	0.641	0.740		0.668	0.740
	3	0.214	0.190		0.221	0.190
	3+	0.089	0.054		0.078	0.054
	>3+	0.056	0.017		0.033	0.016
Hispanic	<3	0.566	0.658	0.533		0.659
	3	0.285	0.247	0.273		0.247
	3+	0.104	0.072	0.119		0.072
	>3+	0.044	0.023	0.076		0.022
Asian American	<3	0.374	0.371	0.227	0.261	
	3	0.421	0.421	0.359	0.415	
	3+	0.150	0.152	0.231	0.215	
	>3+	0.055	0.057	0.183	0.108	

*calculated using gologitComponentsExpIndices.do

Table B.6.11: The Role of Observed and Unobserved Factors in Racial/Ethnic Differences in Component Scores, Baseline Dataset

	Preferred Model (Model 5)								
	Overall	Academic	Extracurricular	Teacher 1	Teacher 2	Counselor	Alumni Personal	Alumni Overall	Personal
Linear Index Differences (relative to whites)									
African American	-3.348	-5.102	-0.664	-0.822	-0.776	-1.140	-0.600	-1.812	-0.666
Hispanic	-2.165	-3.335	-0.424	-0.519	-0.456	-0.688	-0.472	-1.168	-0.473
Asian American	0.277	1.009	0.097	0.173	0.121	0.080	0.029	0.141	-0.026
Pop SD	2.868	4.097	0.986	1.084	1.053	1.294	2.443	2.802	1.573
Coefficients									
African American	1.458	-0.024	-0.239	-0.023	0.069	0.162	0.232	0.103	0.701
Hispanic	0.895	-0.151	-0.180	0.015	0.003	0.012	0.073	-0.033	0.278
Asian American	-0.136	0.114	0.159	-0.221	-0.238	-0.133	-0.193	0.149	-0.370
Percent Unexplained									
African American	*	0.005	0.265	0.027	*	*	*	*	*
Hispanic	*	0.043	0.298	*	*	*	*	0.027	*
Asian American	**	0.101	0.621	**	**	**	**	0.515	0.935

	Include Personal Rating (Model 6)							
	Overall	Academic	Extracurricular	Teacher 1	Teacher 2	Counselor	Alumni Personal	Alumni Overall
Linear Index Differences (relative to whites)								
African American	-3.354	-5.106	-0.628	-0.774	-0.723	-1.085	-0.582	-1.812
Hispanic	-2.176	-3.337	-0.406	-0.491	-0.423	-0.656	-0.463	-1.168
Asian American	0.237	1.012	0.070	0.130	0.078	0.024	0.016	0.140
Pop SD	2.950	4.098	1.017	1.150	1.119	1.387	2.452	2.803
Coefficients								
African American	1.400	-0.019	-0.311	-0.141	-0.049	-0.002	0.202	0.102
Hispanic	0.875	-0.149	-0.211	-0.038	-0.049	-0.056	0.063	-0.034
Asian American	-0.091	0.112	0.195	-0.168	-0.185	-0.059	-0.181	0.149
Percent Unexplained								
African American	*	0.004	0.331	0.154	0.063	0.002	*	*
Hispanic	*	0.043	0.342	0.072	0.104	0.079	*	0.028
Asian American	**	0.100	0.735	**	**	**	**	0.515

*indicates either a preference for a group or the group being positively selected on unobservables despite being negatively selected on observables
**indicates either a penalty for a group or the group being negatively selected on unobservables despite being positively selected on unobservables
*Constructed using results from ologitComponentsIndices.do

Table B.6.12: The Role of Observed and Unobserved Factors in Racial/Ethnic Differences in Component Scores, Expanded Dataset

	Preferred Model (Model 5)								
	Overall	Academic	Extracurricular	Teacher 1	Teacher 2	Counselor	Alumni Personal	Alumni Overall	Personal
Linear Index Differences (relative to whites)									
African American	-3.411	-5.106	-0.691	-0.819	-0.777	-1.170	-0.642	-1.803	-0.710
Hispanic	-2.248	-3.294	-0.430	-0.520	-0.478	-0.720	-0.480	-1.168	-0.535
Asian American	0.195	1.090	0.109	0.170	0.131	0.066	0.031	0.146	-0.087
Pop SD	2.943	4.135	1.036	1.096	1.069	1.324	2.444	2.804	1.605
Coefficients									
African American	1.443	-0.023	-0.184	-0.006	0.074	0.139	0.232	0.103	0.681
Hispanic	0.898	-0.148	-0.161	-0.012	0.021	0.004	0.093	-0.055	0.284
Asian American	-0.133	0.104	0.159	-0.193	-0.231	-0.130	-0.188	0.143	-0.366
Percent Unexplained									
African American	*	0.004	0.210	0.007	*	*	*	*	*
Hispanic	*	0.043	0.273	0.023	*	*	*	0.045	*
Asian American	**	0.087	0.593	**	**	**	**	0.494	0.809

	Include Personal Rating (Model 6)							
	Overall	Academic	Extracurricular	Teacher 1	Teacher 2	Counselor	Alumni Personal	Alumni Overall
Linear Index Differences (relative to whites)								
African American	-3.419	-5.109	-0.654	-0.769	-0.723	-1.112	-0.622	-1.804
Hispanic	-2.267	-3.296	-0.412	-0.493	-0.446	-0.688	-0.471	-1.168
Asian American	0.151	1.093	0.083	0.127	0.088	0.011	0.017	0.146
Pop SD	3.036	4.136	1.065	1.164	1.136	1.423	2.453	2.804
Coefficients								
African American	1.384	-0.018	-0.253	-0.120	-0.037	-0.020	0.201	0.103
Hispanic	0.878	-0.145	-0.194	-0.065	-0.031	-0.067	0.083	-0.056
Asian American	-0.089	0.102	0.194	-0.140	-0.180	-0.058	-0.175	0.143
Percent Unexplained								
African American	*	0.004	0.279	0.135	0.049	0.018	*	*
Hispanic	*	0.042	0.320	0.117	0.065	0.089	*	0.046
Asian American	**	0.085	0.701	**	**	**	**	0.494

*indicates either a preference for a group or the group being positively selected on unobservables despite being negatively selected on observables
**indicates either a penalty for a group or the group being negatively selected on unobservables despite being positively selected on unobservables
*Constructed using results from ologitComponentsIndices.do

Table B.7.1: Logit estimates of Harvard's Admission decision, baseline dataset

	Admit					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
African American	***0.424***	***2.330***	***2.679***	***2.772***	***3.611***	***2.931***
	(0.044)	(0.054)	(0.078)	(0.080)	(0.105)	(0.120)
Hispanic	***0.326***	***1.175***	***1.234***	***1.254***	***1.805***	***1.520***
	(0.045)	(0.050)	(0.070)	(0.072)	(0.091)	(0.103)
Asian American	***-0.082***	***-0.529***	***-0.597***	***-0.527***	***-0.525***	***-0.367***
	(0.036)	(0.039)	(0.056)	(0.057)	(0.071)	(0.082)
Year=2015	***-0.234***	***-0.177***	***-0.160***	***-0.156***	***-0.473***	***-0.627***
	(0.039)	(0.042)	(0.042)	(0.043)	(0.054)	(0.063)
Year=2016	***-0.559***	***-0.522***	***-0.505***	***-0.494***	***-0.635***	***-0.848***
	(0.045)	(0.048)	(0.048)	(0.049)	(0.060)	(0.071)
Year=2017	***-0.666***	***-0.732***	***-0.714***	***-0.713***	***-0.618***	***-0.901***
	(0.047)	(0.050)	(0.050)	(0.051)	(0.062)	(0.073)
Year=2018	***-0.680***	***-0.913***	***-0.861***	***-0.860***	***-0.970***	***-1.369***
	(0.048)	(0.051)	(0.052)	(0.052)	(0.065)	(0.075)
Year=2019	***-0.858***	***-0.961***	***-0.916***	***-0.911***	***-0.922***	***-1.123***
	(0.049)	(0.053)	(0.053)	(0.053)	(0.066)	(0.079)
Female	***-0.070***	***0.260***	***0.197***	***0.191***	0.109	0.024
	(0.027)	(0.030)	(0.072)	(0.073)	(0.088)	(0.099)
Disadvantaged	***1.229***	***1.316***	***1.546***	***1.539***	***1.453***	***1.166***
	(0.045)	(0.052)	(0.077)	(0.078)	(0.099)	(0.108)
First generation	0.000	***0.184***	***0.175***	***0.146***	0.093	0.050
	(0.057)	(0.063)	(0.064)	(0.064)	(0.081)	(0.090)
Waiver	***-0.167***	***0.446***	***0.471***	***0.378***	***0.668***	***0.585***
	(0.045)	(0.051)	(0.050)	(0.051)	(0.065)	(0.072)
Applied for Financial Aid	***0.134***	***0.141***	***0.138***	***0.155***	***0.382***	***0.432***
	(0.037)	(0.039)	(0.039)	(0.041)	(0.050)	(0.057)
Academic index		***2.144***	***1.933***	***1.990***	***0.849***	***0.729***
		(0.149)	(0.149)	(0.150)	(0.196)	(0.213)
AI Sq. X (AI>0)		***0.188***	***0.319***	***0.323***	0.017	-0.027
		(0.087)	(0.088)	(0.089)	(0.114)	(0.124)
AI Sq. X (AI<0)		***-0.920***	***-0.934***	***-0.921***	***-1.023***	***-0.775***
		(0.184)	(0.183)	(0.184)	(0.234)	(0.236)
Humanities			***0.219***	***0.207***	0.119	0.117
			(0.071)	(0.072)	(0.089)	(0.101)
Biology			***-0.358***	***-0.360***	-0.109	-0.043
			(0.063)	(0.063)	(0.078)	(0.089)
Physical Sciences			***-0.252***	***-0.274***	-0.020	0.095
			(0.075)	(0.075)	(0.095)	(0.108)
Engineering			***-0.408***	***-0.414***	-0.022	0.080
			(0.065)	(0.065)	(0.081)	(0.091)
Mathematics			-0.128	-0.154	-0.029	0.125
			(0.082)	(0.083)	(0.106)	(0.121)
Computer Science			***-0.482***	***-0.484***	-0.108	0.111
			(0.099)	(0.100)	(0.125)	(0.139)
Unspecified			***-0.551***	***-0.563***	-0.380	-0.397
			(0.175)	(0.175)	(0.216)	(0.243)
Female X Humanities			-0.133	-0.123	0.000	0.029
			(0.095)	(0.096)	(0.117)	(0.132)
Female X Biology			-0.072	-0.064	-0.080	-0.086
			(0.085)	(0.086)	(0.105)	(0.118)
Female X Phys Sci			0.160	0.179	0.067	-0.031
			(0.116)	(0.117)	(0.146)	(0.168)
Female X Engineering			0.149	0.160	0.046	0.016
			(0.097)	(0.097)	(0.119)	(0.133)
Female X Math			-0.139	-0.119	0.027	0.106
			(0.131)	(0.132)	(0.166)	(0.187)
Female X Comp Sci			0.179	0.156	0.210	-0.019
			(0.180)	(0.181)	(0.222)	0.246
Female X Unspecified			0.001	0.015	0.412	0.531
			(0.248)	(0.248)	(0.298)	(0.329)
Female X African American			-0.048	-0.023	-0.038	0.017
			(0.094)	(0.095)	(0.119)	(0.134)
Female X Hispanic			0.027	0.029	0.086	0.070
			(0.091)	(0.091)	(0.114)	(0.127)
Female X Asian American			***0.148***	***0.152***	***0.260***	***0.278***
			(0.074)	(0.074)	(0.090)	(0.102)
Disadv X African American			***-0.993***	***-1.113***	***-1.555***	***-1.413***
			(0.114)	(0.117)	(0.148)	(0.164)
Disadv X Hispanic			***-0.293***	***-0.342***	***-0.577***	***-0.623***
			(0.109)	(0.111)	(0.141)	(0.154)
Disadv X Asian American			0.065	0.085	0.156	0.056
			(0.099)	(0.100)	(0.124)	(0.137)
Academic Rating=4					***-8.923***	***-7.163***
					(1.072)	(1.056)
Academic Rating=3					***-3.899***	***-3.221***
					(0.156)	(0.178)
Academic Rating=2					***-2.736***	***-2.360***
					(0.138)	(0.157)
Extracurricular Rating=4					***-5.073***	***-3.837***
					(0.430)	(0.468)
Extracurricular Rating=3					***-3.827***	***-3.190***
					(0.168)	(0.186)
Extracurricular Rating=2					***-2.050***	***-2.030***
					(0.165)	(0.183)
Overall Rating=4						***-5.808***
						(0.744)
Overall Rating=-3						***-4.812***
						(0.440)
Overall Rating=3						***-2.193***
						(0.220)
Overall Rating=3+						***-1.463***
						(0.218)
Overall Rating=-2						-0.141
						(0.233)
Overall Rating=2						0.388
						(0.218)
Personal Rating=3						***-2.000***
						(0.639)
Personal Rating=2						-0.484
						(0.638)
Observations	130,208	130,148	130,148	130,107	122,303	119,896
Pseudo R Sq.	0.043	0.232	0.239	0.247	0.530	0.622

*Standard errors in parenthesis. Bold and italicized coefficients are statistically different from zero at the 5% level

*Omitted coefficients are docket effects, race/ethnicity for Native Americans, Hawaiians, and missing, SAT math, SAT verbal, SAT2 average, high school gpa, interactions of missing SAT2 and race, flag for extremely low grades, indicators for each mother and father education level

*Omitted coefficients for models 3 and beyond include female and disadvantaged times Native American, Hawaian and missing race, unspecified major. Social Science is the omitted major

*Omitted coefficients for models 4 and beyond include high school and neighborhood cluster indicators and race times missing high school and neighborhood cluster

*Omitted coefficients for models 5 and 6 include indicator variables for each excluded ranking measure and interactions between race and missing alumni interview.

*For all rankings, Rating=1 is the excluded group. Higher ratings are omitted since none of these applicants are admitted.

Table B.7.2: Logit estimates of Harvard's Admission decision, expanded dataset

	Admit					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
African American	***0.420***	***2.163***	***2.533***	***2.622***	***3.333***	***2.659***
	(0.038)	(0.046)	(0.070)	(0.071)	(0.091)	(0.104)
Hispanic	***0.329***	***1.092***	***1.170***	***1.180***	***1.700***	***1.419***
	(0.038)	(0.043)	(0.063)	(0.065)	(0.080)	(0.091)
Asian American	0.005	***-0.438***	***-0.529***	***-0.457***	***-0.436***	***-0.271***
	(0.029)	(0.032)	(0.049)	(0.050)	(0.062)	(0.071)
Year=2015	***-0.211***	***-0.172***	***-0.159***	***-0.156***	***-0.420***	***-0.565***
	(0.036)	(0.039)	(0.039)	(0.039)	(0.048)	(0.056)
Year=2016	***-0.653***	***-0.618***	***-0.603***	***-0.597***	***-0.730***	***-0.924***
	(0.039)	(0.041)	(0.042)	(0.042)	(0.051)	(0.060)
Year=2017	***-0.693***	***-0.746***	***-0.732***	***-0.730***	***-0.636***	***-0.911***
	(0.039)	(0.042)	(0.042)	(0.043)	(0.052)	(0.061)
Year=2018	***-0.664***	***-0.855***	***-0.813***	***-0.812***	***-0.844***	***-1.229***
	(0.040)	(0.043)	(0.043)	(0.044)	(0.053)	(0.062)
Year=2019	***-0.888***	***-0.964***	***-0.933***	***-0.930***	***-0.883***	***-1.165***
	(0.040)	(0.043)	(0.044)	(0.044)	(0.054)	(0.065)
Female	-0.039	***0.250***	***0.239***	***0.248***	***0.145***	0.127
	(0.022)	(0.025)	(0.057)	(0.057)	(0.068)	(0.076)
Disadvantaged	***1.154***	***1.224***	***1.482***	***1.472***	***1.364***	***1.083***
	(0.040)	(0.046)	(0.069)	(0.069)	(0.085)	(0.093)
First generation	0.006	***0.170***	***0.156***	***0.136***	0.074	0.023
	(0.050)	(0.056)	(0.056)	(0.057)	(0.069)	(0.077)
Waiver	***-0.144***	***0.435***	***0.453***	***0.381***	***0.598***	***0.523***
	(0.040)	(0.045)	(0.045)	(0.046)	(0.056)	(0.062)
Applied for Financial Aid	***-0.075***	***-0.061***	-0.056	-0.021	***0.143***	***0.160***
	(0.028)	(0.030)	(0.030)	(0.031)	(0.038)	(0.043)
Early Decision	***1.611***	***1.449***	***1.383***	***1.384***	***1.333***	***1.282***
	(0.029)	(0.031)	(0.046)	(0.046)	(0.056)	(0.062)
Athlete	***4.487***	***7.153***	***7.141***	***7.245***	***8.532***	***7.849***
	(0.088)	(0.116)	(0.116)	(0.117)	(0.147)	(0.153)
Legacy	***1.244***	***1.662***	***1.682***	***1.658***	***2.058***	***1.840***
	(0.045)	(0.051)	(0.058)	(0.059)	(0.073)	(0.082)
Double Legacy	***0.509***	***0.370***	***0.381***	***0.354***	***0.607***	***0.629***
	(0.090)	(0.100)	(0.100)	(0.101)	(0.121)	(0.133)
Faculty or Staff Child	***1.252***	***1.389***	***1.409***	***1.407***	***1.822***	***1.704***
	(0.138)	(0.157)	(0.157)	(0.158)	(0.187)	(0.203)
Dean's director	***1.499***	***1.941***	***1.913***	***1.873***	***2.307***	***2.322***
	(0.053)	(0.059)	(0.059)	(0.059)	(0.072)	(0.077)
Academic index		***1.988***	***1.817***	***1.836***	***0.609***	***0.412***
		(0.109)	(0.110)	(0.110)	(0.140)	(0.153)
AI Sq. X (AI>0)		***0.230***	***0.331***	***0.346***	0.136	0.164
		(0.062)	(0.063)	(0.063)	(0.080)	(0.088)
AI Sq. X (AI<0)		-0.076	-0.092	-0.084	***-0.317***	***-0.276***
		(0.065)	(0.065)	(0.066)	(0.091)	(0.099)
Humanities			***0.192***	***0.171***	0.018	0.027
			(0.056)	(0.057)	(0.069)	(0.078)
Biology			***-0.336***	***-0.335***	***-0.140***	-0.076
			(0.050)	(0.050)	(0.061)	(0.069)
Physical Sciences			***-0.198***	***-0.209***	-0.027	0.045
			(0.061)	(0.061)	(0.076)	(0.087)
Engineering			***-0.395***	***-0.396***	-0.076	-0.015
			(0.054)	(0.054)	(0.065)	(0.074)
Mathematics			***-0.163***	***-0.177***	-0.136	0.018
			(0.068)	(0.068)	(0.085)	(0.096)
Computer Science			***-0.443***	***-0.439***	-0.105	0.114
			(0.082)	(0.082)	(0.100)	(0.111)
Unspecified			***-0.312***	***-0.311***	-0.105	-0.009
			(0.109)	(0.109)	(0.135)	(0.148)
Female X Humanities			-0.098	-0.087	0.077	0.087
			(0.076)	(0.076)	(0.092)	(0.104)
Female X Biology			-0.086	-0.086	-0.096	-0.109
			(0.069)	(0.069)	(0.083)	(0.094)
Female X Phys Sci			0.009	0.017	-0.079	-0.164
			(0.096)	(0.097)	(0.118)	(0.134)
Female X Engineering			0.127	0.126	0.053	0.017
			(0.081)	(0.082)	(0.098)	(0.110)
Female X Math			-0.058	-0.055	0.170	0.176
			(0.106)	(0.107)	(0.130)	(0.147)
Female X Comp Sci			0.251	0.227	0.282	0.082
			(0.144)	(0.145)	(0.176)	(0.196)
Female X Unspecified			-0.017	-0.019	0.141	0.133
			(0.158)	(0.159)	(0.192)	(0.211)
Female X African American			-0.053	-0.034	0.010	0.009
			(0.080)	(0.080)	(0.098)	(0.111)
Female X Hispanic			-0.005	-0.020	0.038	0.003
			(0.077)	(0.078)	(0.095)	(0.105)
Female X Asian American			0.068	0.064	***0.202***	***0.173***
			(0.060)	(0.060)	(0.072)	(0.082)
Disadv X African American			***-1.024***	***-1.095***	***-1.531***	***-1.379***
			(0.101)	(0.104)	(0.127)	(0.142)
Disadv X Hispanic			***-0.257***	***-0.281***	***-0.500***	***-0.521***
			(0.097)	(0.099)	(0.122)	(0.134)
Disadv X Asian American			0.013	0.051	0.170	0.053
			(0.089)	(0.090)	(0.109)	(0.121)
Early Decision X African American			-0.040	-0.033	-0.110	-0.177
			(0.101)	(0.102)	(0.126)	(0.141)
Early Decision X Hispanic			-0.056	-0.034	-0.029	-0.090
			(0.098)	(0.098)	(0.121)	(0.136)
Early Decision X Asian American			***0.228***	***0.213***	-0.021	-0.020
			(0.068)	(0.069)	(0.084)	(0.095)
Legacy X African American			***-0.865***	***-0.916***	***-1.166***	***-1.109***
			(0.210)	(0.213)	(0.257)	(0.296)
Legacy X Hispanic			***-0.500***	***-0.523***	***-0.845***	***-0.578***
			(0.188)	(0.190)	(0.232)	(0.248)
Legacy X Asian American			***0.436***	***0.422***	***0.635***	***0.393***
			(0.139)	(0.140)	(0.170)	(0.186)
Academic Rating=4					0.634	-0.514
					(0.688)	(0.752)
Academic Rating=3					***1.860***	-0.014
					(0.692)	(0.761)
Academic Rating=2					***3.074***	0.840
					(0.694)	(0.764)
Academic Rating=1					***5.633***	***2.933***
					(0.705)	(0.778)
Extracurricular Rating=4					***-3.795***	***-2.658***
					(0.209)	(0.235)
Extracurricular Rating=3					***-3.617***	***-2.916***
					(0.135)	(0.151)
Extracurricular Rating=2					***-1.999***	***-1.925***
					(0.133)	(0.148)
Overall Rating=-4						***-3.007***
						(1.449)
Overall Rating=4						***-4.954***
						(0.278)
Overall Rating=4+						***-4.975***
						(1.288)
Overall Rating=-3						***-4.442***
						(0.238)
Overall Rating=3						***-2.696***
						(0.167)
Overall Rating=3+						***-1.931***
						(0.165)
Overall Rating=-2						***-0.363***
						(0.178)
Overall Rating=2						0.038
						(0.166)
Personal Rating=4						***-4.795***
						(1.111)
Personal Rating=3						***-2.352***
						(0.500)
Personal Rating=2						***-1.003***
						(0.499)
Observations	150,701	150,633	150,633	150,587	149,425	144,189
Pseudo R Sq.	0.187	0.331	0.337	0.343	0.568	0.649

*Standard errors in parenthesis. Bold and italicized coefficients are statistically different from zero at the 5% level

*Omitted coefficients are docket effects, race/ethnicity for Native Americans, Hawaiians, and missing, SAT math, SAT verbal, SAT2 average, high school gpa, interactions of missing SAT2 and race, flag for extremely low grades, indicators for each mother and father education level

*Omitted coefficients for models 3 and beyond include unspecficed major, female, disadvantaged, early action, and legacy times Native American, Hawaian and missing race, unspecified major
Social Science is the omitted major

*Omitted coefficients for models 4 and beyond include high school and neighborhood cluster indicators and race times missing high school and neighborhood cluster

*Omitted coefficients for models 5 and 6 include indicator variables for each excluded ranking measure and interactions between race and missing alumni interview

*For academic rating Rating=5 is the excluded group. For Overall and Personal, Rating=1 is excluded.

Table B.7.3: Share of each race/ethnicity in each admissions index decile, expanded dataset

Preferred Model (Model 5)				
Admissions Decile	White	African American	Hispanic	Asian American
5 or lower	0.445	0.778	0.692	0.406
6	0.110	0.052	0.070	0.114
7	0.109	0.046	0.065	0.121
8	0.107	0.043	0.060	0.126
9	0.109	0.042	0.059	0.125
10	0.120	0.040	0.055	0.109

+Overall and Total Ratings (Model 6)				
Admissions Decile	White	African American	Hispanic	Asian American
5 or lower	0.456	0.733	0.650	0.424
6	0.105	0.055	0.077	0.117
7	0.106	0.050	0.070	0.121
8	0.107	0.046	0.064	0.124
9	0.108	0.048	0.069	0.118
10	0.117	0.068	0.070	0.097

* created using admissionsLogitsIndices.do.

Table B.8.1: Logit estimates of Harvard's admission decision with interactions between race and year

	Baseline dataset		Expanded dataset	
	Model 5	Model 6	Model 5	Model 6
African American	***3.694***	***2.992***	***3.340***	***2.630***
	(0.157)	(0.177)	(0.138)	(0.157)
2015 X African American	0.035	-0.066	0.062	-0.033
	(0.180)	(0.202)	(0.161)	(0.183)
2016 X African American	-0.329	-0.319	-0.185	-0.146
	(0.204)	(0.231)	(0.175)	(0.198)
2017 X African American	0.037	0.159	0.063	0.129
	(0.203)	(0.231)	(0.173)	(0.198)
2018 X African American	-0.095	-0.054	-0.016	0.048
	(0.200)	(0.224)	(0.169)	(0.192)
2019 X African American	-0.206	-0.087	0.059	0.287
	(0.208)	(0.228)	(0.174)	(0.195)
Hispanic	***1.551***	***1.216***	***1.409***	***1.049***
	(0.148)	(0.169)	(0.133)	(0.152)
2015 X Hispanic	0.304	0.318	0.319	***0.363***
	(0.177)	(0.200)	(0.161)	(0.182)
2016 X Hispanic	0.022	0.187	0.060	0.163
	(0.198)	(0.220)	(0.173)	(0.193)
2017 X Hispanic	***0.451***	***0.658***	***0.503***	***0.753***
	(0.198)	(0.221)	(0.172)	(0.192)
2018 X Hispanic	***0.421***	0.350	***0.535***	***0.512***
	(0.196)	(0.219)	(0.168)	(0.188)
2019 X Hispanic	0.293	0.286	***0.362***	***0.507***
	(0.203)	(0.224)	(0.173)	(0.193)
Asian American	***-0.542***	***-0.395***	***-0.498***	***-0.342***
	(0.105)	(0.123)	***(0.094)***	***(0.110)***
2015 X Asian American	-0.032	-0.019	-0.015	-0.022
	(0.126)	(0.147)	(0.115)	(0.135)
2016 X Asian American	0.125	0.270	0.162	0.261
	(0.145)	(0.167)	(0.124)	(0.143)
2017 X Asian American	0.034	-0.022	0.159	0.105
	(0.153)	(0.177)	(0.127)	(0.147)
2018 X Asian American	-0.119	-0.119	0.024	0.020
	(0.157)	(0.176)	(0.128)	(0.145)
2019 X Asian American	0.132	0.073	0.176	0.203
	(0.157)	(0.173)	(0.128)	(0.145)
Observations	122,303	119,896	149,425	144,189
Pseudo R Sq.	0.531	0.623	0.569	0.649

*Standard errors in parenthesis. Bold and italicized coefficients are statistically different from zero at the 5% level

*See Figure 7.1 For the full set of controls

APPENDIX C

3 Appendix C

3.1 Summary sheet analysis

Harvard readers use the label "Standard Strong" to characterize an application that had strong qualities but not strong enough to merit admission. Harvard was ordered to randomly select 10% of the domestic summary sheets of applicants for the Class of 2018; to search those summary sheets for particular keywords, including the phrase "Standard Strong"; and to produce to SFFA the summary sheets that included those terms.[3] Harvard ultimately produced 256 summary sheets that included the phrase "Standard Strong" for domestic applicants who were either white, African American, Hispanic, or Asian American.

A review of these summary sheets reveals that Harvard applies the label "Standard Strong" disproportionately to Asian-American applicants. Further, the Asian-American applicants who are labeled this way are substantially more qualified academically than "Standard Strong" applicants from other racial groups.

Table C.1 shows the rate of being labeled "Standard Strong" by race/ethnicity for domestic applicants as well as the characteristics of applicants labeled "Standard Strong". The "Standard Strong" designation is applied 25% more often to Asian-American applicants than white applicants. The differences are even more striking when compared to African-American and Hispanic applicants. Asian-American applicants are 15 times as likely to be labeled "Standard Strong" as African-American applicants, and more than 4 times as likely as Hispanic applicants.

Asian-American applicants labeled "Standard Strong" are stronger than applicants of all other racial/ethnic groups on several dimensions. They have significantly higher SAT math scores and academic indexes than each of the other groups, with "Standard-Strong" Asian Americans having SAT math scores that are 33 points higher than Whites, 44 points higher than Hispanics, and 140 points higher than African Americans who receive the "Standard-Strong" label. Their SAT verbal scores are also significantly higher than both "Standard-Strong" African Americans and Hispanics. And they have a substantially higher probability of being rated a 2 or better on academics. This evidence serves to underscore how the operation of racial/ethnic preferences

[3] The files produced were not a random sample of domestic applicants, but rather a random sample of applicants listed on domestic dockets. Hence some students who were not permanent residents or U.S. citizens were included and some U.S. citizens who were living abroad were not included. Nonetheless, removing foreign applicants still yields a representative sample of domestic applicants on domestic dockets.

penalties work to the detriment of Asian-American applicants.

3.2 Reader comments and scoring context

Analyzing a small number of application files cannot substitute for the kind of statistical analysis described in this report, which is based on robust data regarding tens of thousands of applicants each year for the classes of 2014 to 2019. They can, however, provide examples that illustrate the findings of the statistical analysis.

Harvard produced 80 files of its own choosing from each of two admissions cycles (2018 and 2019). SFFA then selected 160 files from each of those cycles, yielding a total of 400 admissions files. Production of these files did not begin until the summer of 2017 and was not completed until October 2, making it impossible for me to give a deep read to all the files selected by Harvard and by SFFA. I did examine at least portions of each file. SFFA chose primarily Asian-American and African-American files; given the limited number of files Harvard was ordered to produce, it was necessary to focus on comparisons of Asian-American and African-American files—the area of greatest discrepancy in Harvard's ratings.

Here, I provide examples of from the files of the disparate treatment of applicants of different races.

An example of the high bar placed for Asian Americans is HARV00091218. With regard to academics, this applicant was at the very top: perfect scores on the SAT, perfect scores on three SAT subject tests, nine AP exams taken scoring 5's on all of them, and number one in his class out of 592. The scoring of the first reader was a 1 on academics, 2+ on extracurricular, 2 on personal, 1's on all the school support measures, and a 1 on the overall rating. A 1 on the overall rating of the final reader is essentially a guarantee of admission. The alumni interview also went extremely well, and the applicant received a 1 both on the personal rating and overall rating.

The praise of the first reader is effusive:

> X's profile is the proverbial picket fence, right down the alum IV which predicts "a great impact" on campus. He's had that and more on everything he's touched so far. The list of research and awards is impressive. Someone we'll fight over w/ Princeton I'd guess.

The final reader downgrades the overall rating to a 2+ and the extracurricular rating to a 2, stating:

> Everything seems legitimate and he probably is a "super star" in things academic, but so

much praise causes me to want an assessment of our Faculty. Hope it isn't too late for such.

The final reader is suspicious because the file seems too strong. Unfortunately, Harvard only provided the applicant's appeal to get off the waitlist; the rest of the file is missing, so no information is available regarding how the faculty review played out. But the fact that a faculty review was necessary for this applicant is surprising. And the applicant was ultimately rejected.

* * *

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Figure C.1

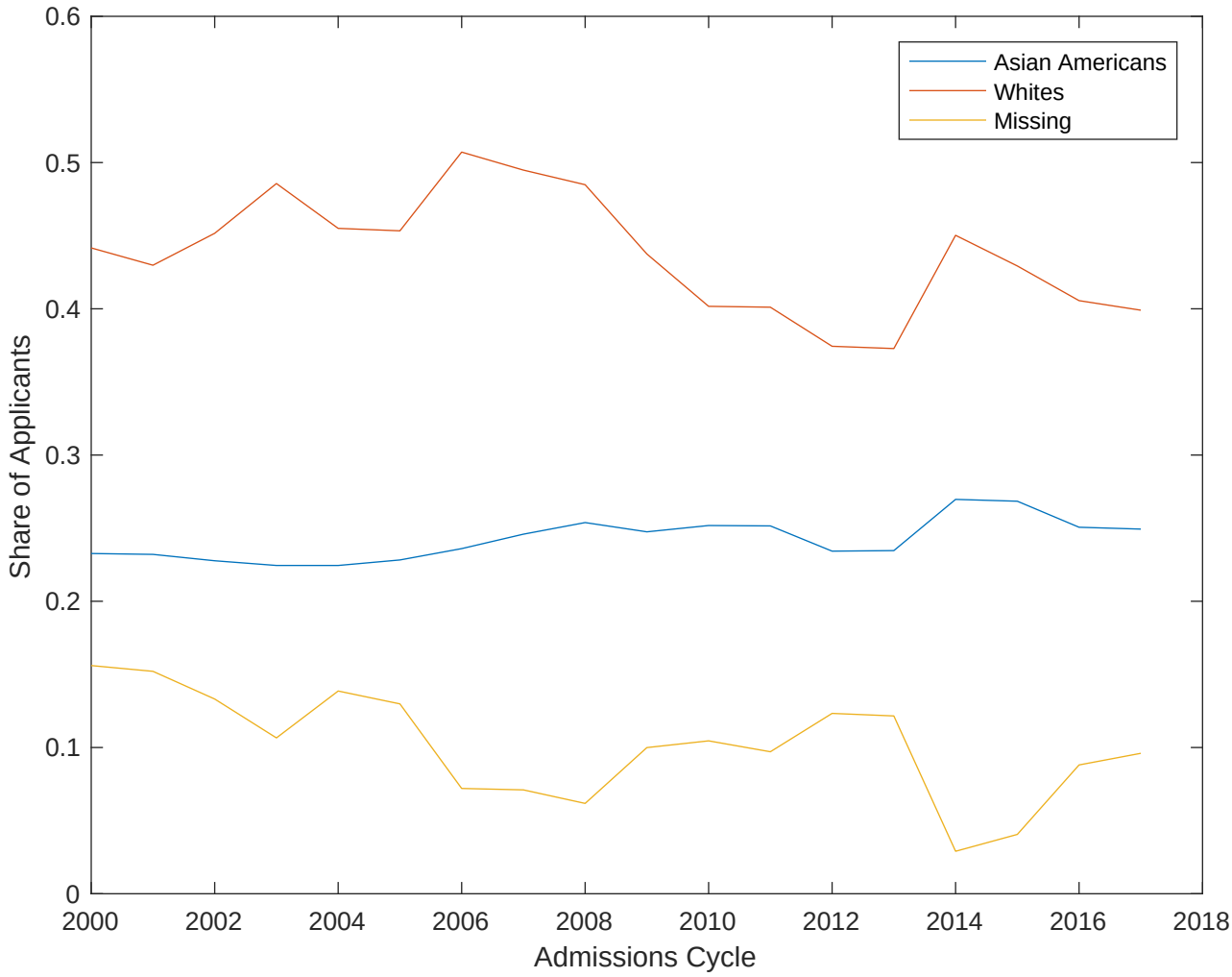

Asian Americans
Whites
Missing
Share of Applicants
Admissions Cycle
0
0.1
0.2
0.3
0.4
0.5
0.6
2000
2002
2004
2006
2008
2010
2012
2014
2016
2018

Table C.1 : Difference in characteristics for those labeled Standard Strong by race/ethnicity

		White	African American	Hispanic	Asian American
Share Standard Strong		0.120**	0.010*	0.036*	0.151
Academic Index		227.04*	206.40*	220.86*	230.56
SAT Math		732.82*	625.00*	721.82*	766.02
SAT Verbal		758.06	615*	685.45*	758.67
Share Academic 2 or better		0.500*	0.333	0.417**	0.684
Share Extracurricular 2 or better		0.159	0.000	0.083	0.175
Share Personal 2 or better		0.087	0.000	0.083	0.096
Number labeled Standard Strong		127	3	12	114

*indicates statistically different from Asian American rating at the 95% level

APPENDIX D

1 Appendix D: List of Documents Relied Upon In Forming Opinons

Data Files Produced by Harvard

HARV00001203
HARV00001204
HARV00001205
HARV00001206
HARV00001207
HARV00001208
HARV00001209
HARV00001210
HARV00001211
HARV00001212
HARV00001213
HARV00001214
HARV00001215
HARV00001216
HARV00001217
HARV00001218
HARV00001219
HARV00001220
HARV00001221
HARV00001222
HARV00001223
HARV00001224
HARV00001225
HARV00001226
HARV00001227
HARV00001228
HARV00001229
HARV00001230
HARV00001231
HARV00001232
HARV00001233
HARV00001234
HARV00001235
HARV00001236
HARV00001237
HARV00001238
HARV00001239
HARV00001240
HARV00001241
HARV00001242
HARV00001243
HARV00001244
HARV00001245
HARV00001246
HARV00001247
HARV00001248
HARV00001249
HARV00001250
HARV00001251
HARV00001252
HARV00001253
HARV00001254
HARV00001322
HARV00001373
HARV00001374
HARV00001375
HARV00001376
HARV00001377
HARV00001378
HARV00001379
HARV00001380
HARV00001895
HARV00001985
HARV00002725
HARV00002726
HARV00002727
HARV00002728
HARV00002729
HARV00003489
HARV00006413
HARV00006414
HARV00006415
HARV00006416
HARV00006417
HARV00006418
HARV00006419
HARV00006420
HARV00006421
HARV00006422
HARV00006423
HARV00006424
HARV00006425
HARV00006426
HARV00006427
HARV00006428
HARV00006429
HARV00006430
HARV00006431
HARV00006432
HARV00006433
HARV00006434
HARV00006435
HARV00006436
HARV00006437
HARV00006438
HARV00006439
HARV00006440
HARV00006441
HARV00006442
HARV00006443
HARV00006444
HARV00006445
HARV00006446
HARV00006447
HARV00006448
HARV00006449
HARV00006450
HARV00006451
HARV00006452
HARV00006453
HARV00006454
HARV00006455
HARV00006456
HARV00006457

HARV00006458
HARV00006459
HARV00006460
HARV00006461
HARV00006462
HARV00006463
HARV00006464
HARV00006465
HARV00006466
HARV00006467
HARV00006468
HARV00006469
HARV00006470
HARV00006471
HARV00006472
HARV00006473
HARV00006474
HARV00006475
HARV00006476
HARV00006477
HARV00006478
HARV00006479
HARV00006480
HARV00006481
HARV00006482
HARV00006483
HARV00006484
HARV00006485
HARV00006486
HARV00006487
HARV00006488
HARV00006489
HARV00006490
HARV00006491
HARV00006492
HARV00006493
HARV00006494
HARV00006495
HARV00006496
HARV00006497
HARV00006498
HARV00006499
HARV00006499
HARV00006500
HARV00006501
HARV00006502
HARV00006503
HARV00006504
HARV00006505
HARV00006506
HARV00006507
HARV00006508
HARV00006509
HARV00006510
HARV00006511
HARV00006512
HARV00006513
HARV00006514
HARV00006515
HARV00006516
HARV00006517
HARV00006518
HARV00006519
HARV00006520
HARV00006521
HARV00006522
HARV00006523
HARV00006524
HARV00006525
HARV00006526
HARV00006527
HARV00006528
HARV00006529
HARV00006530
HARV00006531
HARV00006532
HARV00006533
HARV00006534
HARV00006535
HARV00006536
HARV00006537
HARV00006538
HARV00006539
HARV00006540
HARV00006541
HARV00006542
HARV00006543
HARV00006544
HARV00006545
HARV00006546
HARV00006547
HARV00006548
HARV00006549
HARV00006550
HARV00006551
HARV00006552
HARV00006553
HARV00006554
HARV00006555
HARV00006556
HARV00006557
HARV00006558
HARV00006559
HARV00006560
HARV00006561
HARV00006562
HARV00006563
HARV00006564
HARV00006565
HARV00006566
HARV00006567
HARV00006568
HARV00006569
HARV00006570
HARV00006571
HARV00006572
HARV00006573
HARV00006574
HARV00006575
HARV00006576
HARV00006577
HARV00006578
HARV00006579
HARV00006580
HARV00006581
HARV00006582
HARV00006583
HARV00006584
HARV00006585
HARV00006586
HARV00006587
HARV00006588

HARV00006589
HARV00006590
HARV00006591
HARV00006592
HARV00006593
HARV00006594
HARV00006595
HARV00006596
HARV00006597
HARV00006598
HARV00006599
HARV00006600
HARV00006601
HARV00006602
HARV00006603
HARV00006604
HARV00006605
HARV00006606
HARV00006607
HARV00006608
HARV00006609
HARV00006610
HARV00006611
HARV00006612
HARV00006613
HARV00006614
HARV00006615
HARV00006616
HARV00006617
HARV00006618
HARV00006619
HARV00006620
HARV00006621
HARV00006622
HARV00006623
HARV00006624
HARV00006625
HARV00006626
HARV00006627
HARV00006628
HARV00006629
HARV00006630
HARV00006631
HARV00006632
HARV00006633
HARV00006634
HARV00006635
HARV00006636
HARV00006637
HARV00006638
HARV00006639
HARV00006640
HARV00006641
HARV00006642
HARV00006643
HARV00006644
HARV00006645
HARV00006646
HARV00006647
HARV00006648
HARV00006649
HARV00006650
HARV00006651
HARV00006652
HARV00006653
HARV00006654
HARV00006655
HARV00006656
HARV00006657
HARV00006658
HARV00006659
HARV00006660
HARV00006661
HARV00006662
HARV00006663
HARV00006664
HARV00006665
HARV00006666
HARV00006667
HARV00006668
HARV00006669
HARV00006670
HARV00006671
HARV00006672
HARV00006673
HARV00006674
HARV00006675
HARV00006676
HARV00006677
HARV00006678
HARV00006679
HARV00006680
HARV00006681
HARV00006682
HARV00006683
HARV00006684
HARV00006685
HARV00006686
HARV00006687
HARV00006688
HARV00006689
HARV00006690
HARV00006691
HARV00006692
HARV00006693
HARV00006694
HARV00006695
HARV00006696
HARV00006697
HARV00006698
HARV00006699
HARV00006700
HARV00006701
HARV00006702
HARV00006703
HARV00006704
HARV00006705
HARV00006706
HARV00006707
HARV00006708
HARV00006709
HARV00006710
HARV00006711
HARV00006712
HARV00006713
HARV00006714
HARV00006715
HARV00006716
HARV00006717
HARV00006718
HARV00006719
HARV00006720

HARV00006721
HARV00006722
HARV00006723
HARV00006724
HARV00006725
HARV00006726
HARV00006727
HARV00006728
HARV00006729
HARV00006730
HARV00006731
HARV00006732
HARV00006733
HARV00006734
HARV00006735
HARV00006736
HARV00006737
HARV00006738
HARV00006739
HARV00006740
HARV00006741
HARV00006742
HARV00006743
HARV00006744
HARV00006745
HARV00006746
HARV00006747
HARV00006748
HARV00006749
HARV00006750
HARV00006751
HARV00006752
HARV00006753
HARV00006754
HARV00006755
HARV00006756
HARV00006757
HARV00006758
HARV00006759
HARV00006760
HARV00006761
HARV00006762
HARV00006763
HARV00006764
HARV00006765
HARV00006766
HARV00006767
HARV00006768
HARV00006769
HARV00006770
HARV00006771
HARV00006772
HARV00006773
HARV00006774
HARV00006775
HARV00006776
HARV00006777
HARV00006778
HARV00006779
HARV00006780
HARV00006781
HARV00006782
HARV00006783
HARV00006784
HARV00006785
HARV00006786
HARV00006787
HARV00006788
HARV00006789
HARV00006790
HARV00006791
HARV00006792
HARV00006793
HARV00006794
HARV00006795
HARV00006796
HARV00006797
HARV00006798
HARV00006799
HARV00006800
HARV00006801
HARV00006802
HARV00006803
HARV00006804
HARV00006805
HARV00006806
HARV00006807
HARV00006808
HARV00006809
HARV00006810
HARV00006811
HARV00006812
HARV00006813
HARV00006814
HARV00006815
HARV00006816
HARV00006817
HARV00006818

Document files produced by Harvard

HARV00000001
HARV00000003
HARV00000007
HARV00000008
HARV00000016
HARV00000017
HARV00000025
HARV00000026
HARV00000027
HARV00000031
HARV00000035
HARV00000043
HARV00000044
HARV00000047
HARV00000050
HARV00000055
HARV00000063
HARV00000067
HARV00000068
HARV00000079
HARV00000080
HARV00000089
HARV00000103
HARV00000105

HARV00000107
HARV00000108
HARV00000113
HARV00000115
HARV00000117
HARV00000118
HARV00000119
HARV00000120
HARV00000121
HARV00000145
HARV00000146
HARV00000147
HARV00000149
HARV00000151
HARV00000153
HARV00000156
HARV00000158
HARV00000160
HARV00000162
HARV00000166
HARV00000167
HARV00000174
HARV00000175
HARV00000178
HARV00000179
HARV00000180
HARV00000182
HARV00000184
HARV00000186
HARV00000197
HARV00000198
HARV00000202
HARV00000206
HARV00000212
HARV00000322
HARV00000347
HARV00000695
HARV00000714
HARV00000717
HARV00000729
HARV00000736
HARV00000760
HARV00000779
HARV00000780
HARV00000798
HARV00000816
HARV00000863
HARV00000865
HARV00000884
HARV00000896
HARV00000902
HARV00000907
HARV00000945
HARV00000948
HARV00000953
HARV00000956
HARV00000958
HARV00000960
HARV00001108
HARV00001119
HARV00001134
HARV00001145
HARV00001192
HARV00001197
HARV00001884
HARV00001886
HARV00001887
HARV00001891
HARV00002724
HARV00003590
HARV00003600
HARV00003650
HARV00003712
HARV00003764
HARV00003808
HARV00003848
HARV00003879
HARV00004146
HARV00004147
HARV00004156
HARV00004160
HARV00004164
HARV00004168
HARV00004175
HARV00004188
HARV00004190
HARV00004202
HARV00004204
HARV00004221
HARV00004222
HARV00004223
HARV00004224
HARV00004225
HARV00004227
HARV00004229
HARV00004238
HARV00004239
HARV00004268
HARV00004274
HARV00004313
HARV00004352
HARV00005533
HARV00007772
HARV00010469
HARV00010499
HARV00011023
HARV00011024
HARV00014628
HARV00014676
HARV00014677
HARV00015410
HARV00018639
HARV00019882
HARV00019883
HARV00019888
HARV00019889
HARV00019909
HARV00019910
HARV00020674
HARV00020675
HARV00020734
HARV00020735
HARV00022973
HARV00023413
HARV00031687
HARV00032507
HARV00032508
HARV00032509
HARV00065741
HARV00069739
HARV00069794
HARV00072382

HARV00072416
HARV00072453
HARV00072528
HARV00072626
HARV00072650
HARV00072668
HARV00072713
HARV00072750
HARV00072793
HARV00072825
HARV00072853
HARV00072886
HARV00072928
HARV00072988
HARV00073022
HARV00073060
HARV00073101
HARV00073138
HARV00073175
HARV00073217
HARV00073257
HARV00073311
HARV00073357
HARV00073452
HARV00073509
HARV00073542
HARV00073573
HARV00073581
HARV00073618
HARV00073661
HARV00073709
HARV00073747
HARV00073807
HARV00075704
HARV00076213
HARV00076216
HARV00076219
HARV00076221
HARV00076224
HARV00076227
HARV00076229
HARV00076233
HARV00076236
HARV00076239
HARV00076242
HARV00076245
HARV00076248
HARV00076250
HARV00076252
HARV00076255
HARV00076258
HARV00076261
HARV00076263
HARV00076265
HARV00076268
HARV00076271
HARV00076274
HARV00076277
HARV00076280
HARV00076283
HARV00076285
HARV00076288
HARV00076290
HARV00076293
HARV00076295
HARV00076297
HARV00076300
HARV00076302
HARV00076304
HARV00076307
HARV00076310
HARV00076312
HARV00076315
HARV00076317
HARV00076319
HARV00076322
HARV00076324
HARV00076326
HARV00076328
HARV00076331
HARV00076333
HARV00076335
HARV00076337
HARV00076339
HARV00076342
HARV00076345
HARV00076347
HARV00076349
HARV00076351
HARV00076353
HARV00076356
HARV00076358
HARV00076360
HARV00076363
HARV00076366
HARV00076369
HARV00076372
HARV00076374
HARV00076376
HARV00076378
HARV00076380
HARV00076382
HARV00076384
HARV00076387
HARV00076389
HARV00076391
HARV00076394
HARV00076396
HARV00076398
HARV00076401
HARV00076404
HARV00076407
HARV00076410
HARV00076412
HARV00076415
HARV00076417
HARV00076420
HARV00076422
HARV00076425
HARV00076427
HARV00076429
HARV00076431
HARV00076433
HARV00076436
HARV00076438
HARV00076440
HARV00076442
HARV00076444
HARV00076446
HARV00076451
HARV00076453
HARV00076456

HARV00076458
HARV00076461
HARV00076463
HARV00076466
HARV00076469
HARV00076472
HARV00076475
HARV00076479
HARV00076481
HARV00076483
HARV00076486
HARV00076489
HARV00076492
HARV00076495
HARV00076498
HARV00076500
HARV00076503
HARV00076506
HARV00076509
HARV00076512
HARV00076515
HARV00076518
HARV00076520
HARV00076522
HARV00076525
HARV00076527
HARV00076529
HARV00076532
HARV00076534
HARV00076536
HARV00076539
HARV00076541
HARV00076543
HARV00076545
HARV00076548
HARV00076550
HARV00076552
HARV00076555
HARV00076557
HARV00076560
HARV00076562
HARV00076564
HARV00076567
HARV00076571
HARV00076575
HARV00076579
HARV00076583
HARV00076587
HARV00076591
HARV00076595
HARV00076599
HARV00076603
HARV00076607
HARV00076611
HARV00076615
HARV00076619
HARV00076623
HARV00076627
HARV00076631
HARV00076635
HARV00076639
HARV00076643
HARV00076647
HARV00076651
HARV00076655
HARV00076659
HARV00076663
HARV00076667
HARV00076671
HARV00076675
HARV00076679
HARV00076683
HARV00076687
HARV00076691
HARV00076695
HARV00076699
HARV00076703
HARV00076707
HARV00076711
HARV00076715
HARV00076719
HARV00076723
HARV00076727
HARV00076731
HARV00076735
HARV00076739
HARV00076743
HARV00076747
HARV00076751
HARV00076755
HARV00076759
HARV00076763
HARV00076767
HARV00076771
HARV00076775
HARV00076779
HARV00076783
HARV00076787
HARV00076791
HARV00076795
HARV00076799
HARV00076805
HARV00076809
HARV00076813
HARV00076817
HARV00076821
HARV00076825
HARV00076829
HARV00076833
HARV00076837
HARV00076841
HARV00076845
HARV00076849
HARV00076853
HARV00076857
HARV00076861
HARV00076865
HARV00076869
HARV00076873
HARV00076877
HARV00076881
HARV00076883
HARV00076885
HARV00076887
HARV00076890
HARV00076893
HARV00076896
HARV00076899
HARV00076901
HARV00076903
HARV00076905
HARV00076908

HARV00076910
HARV00076913
HARV00076915
HARV00076918
HARV00076920
HARV00076922
HARV00076924
HARV00076926
HARV00076928
HARV00076930
HARV00076932
HARV00076934
HARV00076936
HARV00076938
HARV00076940
HARV00076943
HARV00076945
HARV00076947
HARV00076950
HARV00076952
HARV00076954
HARV00076956
HARV00076958
HARV00076960
HARV00076962
HARV00076964
HARV00076966
HARV00076969
HARV00076971
HARV00076973
HARV00076975
HARV00076977
HARV00076979
HARV00076981
HARV00076983
HARV00076985
HARV00076988
HARV00076990
HARV00076993
HARV00076995
HARV00076997
HARV00077000
HARV00077002
HARV00077004
HARV00077007
HARV00077009
HARV00077011
HARV00077014
HARV00077016
HARV00077019
HARV00077021
HARV00077023
HARV00077025
HARV00077027
HARV00077030
HARV00077032
HARV00077034
HARV00077037
HARV00077039
HARV00077041
HARV00077043
HARV00077045
HARV00077047
HARV00077049
HARV00077051
HARV00077053
HARV00077055
HARV00077058
HARV00077060
HARV00077063
HARV00077066
HARV00077069
HARV00077072
HARV00077074
HARV00077076
HARV00077079
HARV00077081
HARV00077083
HARV00077085
HARV00077088
HARV00077092
HARV00077096
HARV00077100
HARV00077104
HARV00077108
HARV00077112
HARV00077116
HARV00077122
HARV00077125
HARV00077128
HARV00077130
HARV00077133
HARV00077135
HARV00077137
HARV00077139
HARV00077141
HARV00077143
HARV00077145
HARV00077147
HARV00077150
HARV00077152
HARV00077154
HARV00077157
HARV00077159
HARV00077162
HARV00077164
HARV00077166
HARV00077169
HARV00077171
HARV00077174
HARV00077176
HARV00077178
HARV00077180
HARV00077183
HARV00077185
HARV00077187
HARV00077189
HARV00077191
HARV00077193
HARV00077196
HARV00077199
HARV00077201
HARV00077204
HARV00077206
HARV00077209
HARV00077212
HARV00077215
HARV00077217
HARV00077219
HARV00077221
HARV00077223
HARV00077226

HARV00077228
HARV00077231
HARV00077234
HARV00077237
HARV00077239
HARV00077241
HARV00077243
HARV00077246
HARV00077248
HARV00077250
HARV00077252
HARV00077254
HARV00077256
HARV00077258
HARV00077261
HARV00077263
HARV00077266
HARV00077268
HARV00077270
HARV00077272
HARV00077275
HARV00077277
HARV00077279
HARV00077281
HARV00077283
HARV00077285
HARV00077287
HARV00077289
HARV00077291
HARV00077293
HARV00077295
HARV00077297
HARV00077300
HARV00077302
HARV00077304
HARV00077306
HARV00077309
HARV00077312
HARV00077314
HARV00077316
HARV00077318
HARV00077320
HARV00077322
HARV00077324
HARV00077326
HARV00077328
HARV00077331
HARV00077334
HARV00077336
HARV00077338
HARV00077340
HARV00077342
HARV00077345
HARV00077348
HARV00077351
HARV00077353
HARV00077356
HARV00077359
HARV00077362
HARV00077364
HARV00077367
HARV00077369
HARV00077372
HARV00077375
HARV00077377
HARV00077379
HARV00077381
HARV00077383
HARV00077385
HARV00077387
HARV00077389
HARV00077392
HARV00077394
HARV00077396
HARV00077398
HARV00077400
HARV00077402
HARV00077404
HARV00077407
HARV00077410
HARV00077412
HARV00077414
HARV00077416
HARV00077419
HARV00077421
HARV00077424
HARV00077427
HARV00077429
HARV00077431
HARV00077434
HARV00077437
HARV00077440
HARV00077442
HARV00077444
HARV00077447
HARV00077449
HARV00077451
HARV00077453
HARV00077456
HARV00077459
HARV00077461
HARV00077464
HARV00077466
HARV00077468
HARV00077470
HARV00077473
HARV00077475
HARV00077477
HARV00077480
HARV00077482
HARV00077485
HARV00077487
HARV00077489
HARV00077491
HARV00077493
HARV00077495
HARV00077498
HARV00077500
HARV00077502
HARV00077504
HARV00077506
HARV00077508
HARV00077511
HARV00077515
HARV00077883
HARV00077955
HARV00077999
HARV00078061
HARV00078098
HARV00078137
HARV00078171
HARV00078208

HARV00078249
HARV00078288
HARV00078326
HARV00078360
HARV00078394
HARV00078441
HARV00078474
HARV00078560
HARV00078597
HARV00078639
HARV00078677
HARV00078716
HARV00078748
HARV00078817
HARV00078857
HARV00078894
HARV00078926
HARV00079009
HARV00079051
HARV00079091
HARV00079130
HARV00079164
HARV00079202
HARV00079296
HARV00079325
HARV00079421
HARV00079476
HARV00079519
HARV00079564
HARV00079600
HARV00079639
HARV00079680
HARV00079732
HARV00079776
HARV00079812
HARV00079853
HARV00079892
HARV00079937
HARV00079972
HARV00080018
HARV00080052
HARV00080094
HARV00080152
HARV00080187
HARV00080227
HARV00080264
HARV00080328
HARV00080369
HARV00080408
HARV00080446
HARV00080479
HARV00080516
HARV00080556
HARV00080608
HARV00080642
HARV00080709
HARV00080792
HARV00080830
HARV00080866
HARV00080904
HARV00080967
HARV00081011
HARV00081049
HARV00081099
HARV00081140
HARV00081194
HARV00081235
HARV00081272
HARV00081336
HARV00081369
HARV00081411
HARV00081445
HARV00081479
HARV00081509
HARV00081540
HARV00081572
HARV00081608
HARV00081644
HARV00081700
HARV00081770
HARV00081810
HARV00081850
HARV00081854
HARV00081858
HARV00081862
HARV00081866
HARV00081870
HARV00081935
HARV00081977
HARV00082017
HARV00082053
HARV00082099
HARV00082144
HARV00082193
HARV00082301
HARV00082332
HARV00082365
HARV00082411
HARV00082454
HARV00082495
HARV00082526
HARV00082564
HARV00082682
HARV00082717
HARV00082750
HARV00082785
HARV00082832
HARV00082865
HARV00082892
HARV00082940
HARV00082972
HARV00083005
HARV00083062
HARV00083169
HARV00083232
HARV00083347
HARV00083375
HARV00083403
HARV00083432
HARV00083466
HARV00083500
HARV00083556
HARV00083597
HARV00083628
HARV00083663
HARV00083692
HARV00083729
HARV00083778
HARV00083807
HARV00083850
HARV00083894
HARV00083920

HARV00083970
HARV00084010
HARV00084042
HARV00084093
HARV00084130
HARV00084170
HARV00084214
HARV00084246
HARV00084288
HARV00084322
HARV00084351
HARV00084378
HARV00084422
HARV00084535
HARV00084590
HARV00084649
HARV00084724
HARV00084827
HARV00084856
HARV00084882
HARV00084937
HARV00084998
HARV00085055
HARV00085082
HARV00085120
HARV00085162
HARV00085225
HARV00085259
HARV00085285
HARV00085324
HARV00085357
HARV00085412
HARV00085452
HARV00085514
HARV00085550
HARV00085583
HARV00085684
HARV00085739
HARV00085780
HARV00085812
HARV00085859
HARV00085885
HARV00085919
HARV00085968
HARV00086028
HARV00086080
HARV00086162
HARV00086229
HARV00086283
HARV00086312
HARV00086343
HARV00086539
HARV00086578
HARV00086617
HARV00086674
HARV00086722
HARV00086754
HARV00086784
HARV00086825
HARV00086878
HARV00086917
HARV00086974
HARV00087014
HARV00087050
HARV00087087
HARV00087119
HARV00087172
HARV00087214
HARV00087244
HARV00087303
HARV00087339
HARV00087403
HARV00087449
HARV00087492
HARV00087524
HARV00087568
HARV00087618
HARV00087653
HARV00087700
HARV00087732
HARV00087778
HARV00087812
HARV00087844
HARV00087880
HARV00087947
HARV00088018
HARV00088053
HARV00088089
HARV00088169
HARV00088201
HARV00088245
HARV00088320
HARV00088387
HARV00088419
HARV00088453
HARV00088485
HARV00088518
HARV00088567
HARV00088650
HARV00088708
HARV00088763
HARV00088802
HARV00088845
HARV00088878
HARV00088916
HARV00088960
HARV00088987
HARV00089075
HARV00089104
HARV00089139
HARV00089167
HARV00089218
HARV00089316
HARV00089351
HARV00089385
HARV00089421
HARV00089460
HARV00089492
HARV00089523
HARV00089557
HARV00089585
HARV00089620
HARV00089653
HARV00089692
HARV00089729
HARV00089756
HARV00089785
HARV00089816
HARV00089853
HARV00089899
HARV00089929
HARV00089957

HARV00089999
HARV00090047
HARV00090086
HARV00090115
HARV00090171
HARV00090198
HARV00090238
HARV00090274
HARV00090319
HARV00090350
HARV00090381
HARV00090417
HARV00090450
HARV00090487
HARV00090527
HARV00090583
HARV00090621
HARV00090662
HARV00090693
HARV00090724
HARV00090766
HARV00090797
HARV00090833
HARV00090868
HARV00090898
HARV00090932
HARV00090972
HARV00091007
HARV00091046
HARV00091075
HARV00091115
HARV00091144
HARV00091182
HARV00091218
HARV00091229
HARV00091272
HARV00091302
HARV00091332
HARV00091362
HARV00091392
HARV00091437
HARV00091476
HARV00091504
HARV00091544
HARV00091603
HARV00091633
HARV00091669
HARV00091698
HARV00091731
HARV00091767
HARV00091793
HARV00091861
HARV00091894
HARV00091925
HARV00091954
HARV00091983
HARV00092013
HARV00092046
HARV00092081
HARV00092133
HARV00092190
HARV00092215
HARV00092256
HARV00092292
HARV00092325
HARV00092352
HARV00092396
HARV00092431
HARV00092462
HARV00092498
HARV00092526
HARV00092560
HARV00092599
HARV00092643
HARV00092682
HARV00092712
HARV00092742
HARV00092768
HARV00092796
HARV00092827
HARV00092864
HARV00092895
HARV00092925
HARV00092996
HARV00093030
HARV00093109
HARV00093143
HARV00093172
HARV00093213
HARV00093245
HARV00093278
HARV00093311
HARV00093356
HARV00093390
HARV00093419
HARV00093457
HARV00093496
HARV00093530
HARV00093561
HARV00093596
HARV00093626
HARV00093665
HARV00093699
HARV00093748
HARV00093780
HARV00093818
HARV00093926
HARV00093957
HARV00094070
HARV00094102
HARV00094160
HARV00094248
HARV00094298
HARV00094347
HARV00094395
HARV00094435
HARV00094481
HARV00094536
HARV00094624
HARV00094818
HARV00094870
HARV00094940
HARV00094971
HARV00094999
HARV00095033
HARV00095074
HARV00095100
HARV00095137
HARV00095176
HARV00096328
HARV00096365
HARV00096433

HARV00096475

Depositions (w/ Exhibits)

Marlyn McGrath (two volumes)
Elizabeth Yong
Sally Donahue
Kaitlin Howrigan
Erica Bever
Erin Driver-Linn
Mark Hansen
William Fitzsimmons

APPENDIX E

Peter Arcidiacono
March 2017

Address

Department of Economics
201A Social Science
Duke University
Durham, NC 27708-0097
psarcidi@econ.duke.edu
(919) 660-1816

Employment and Affiliations

Duke University
- Full Professor, July 2010-present
- Associate Professor (with tenure), July 2006-June 2010
- Assistant Professor, September 1999-June, 2006

National Bureau of Economic Research
- Research Associate, 2008-present

IZA Research Fellow, September 2015-present

Education

Ph.D. in Economics, University of Wisconsin, Madison, WI, August 1999.

B.S. in Economics, Willamette University, Salem, OR, May 1993.

Published and Forthcoming Articles (*=not refereed)

"Finite Mixture Distributions, Sequential Likelihood, and the EM Algorithm," (joint with John B. Jones at SUNY-Albany), *Econometrica,* Vol. 71, No.3 (May, 2003), 933-946

"The Dynamic Implications of Search Discrimination," *Journal of Public Economics,* Vol. 87, Nos.7-8 (August, 2003), 1681-1707

"Paying to Queue: A Theory of Locational Differences in Nonunion Wages," (joint with Tom Ahn), *Journal of Urban Economics,* Vol. 55, No. 3 (May 2004), 564-579

"Ability Sorting and the Returns to College Major," *Journal of Econometrics*, Vol. 121, Nos. 1-2 (August, 2004), 343-375

"Peer Effects in Medical School," (joint with Sean Nicholson) *Journal of Public Economics,* Vol. 89, Nos. 2-3 (February, 2005), 327-350

"Do People Value Racial Diversity? Evidence From Nielsen Ratings" (joint with Eric Aldrich and Jacob Vigdor), *Topics in Economic Analysis and Policy*, Vol. 5, No. 1 (2005), Article 4

"Affirmative Action in Higher Education: How do Admission and Financial Aid Rules Affect Future Earnings?" *Econometrica,* Vol. 73, No. 5 (September, 2005), 1477-1524

"Games and Discrimination: Lessons from the Weakest Link," (joint with Kate Antonovics and Randy Walsh), *Journal of Human Resources,* Vol. 40, No.4 (Fall, 2005)

"Living Rationally Under the Volcano? An Empirical Analysis of Heavy Drinking and Smoking," (joint with Holger Sieg at Carnegie Mellon and Frank Sloan) *International Economic Review,* Vol. 48, No. 1 (February 2007)

"The Economic Returns to an MBA," (joint with Jane Cooley and Andrew Hussey) *International Economic Review,* Vol. 49, No.3 (August 2008), 873-899

"The Effects of Gender Interactions in the Lab and in the Field," (joint with Kate Antonovics and Randy Walsh) *Review of Economics and Statistics,* Vol. 91, No. 1 (February 2009)

"Explaining Cross-Racial Differences in Teenage Labor Force Participation: Results from a General Equilibrium Search Model" (joint with Tom Ahn, Alvin Murphy and Omari Swinton) *Journal of Econometrics,* Vol. 156, No. 2 (May 2010)

"Does The River Spill Over? Estimating the Economic Returns to Attending a Racially Diverse College" (joint with Jacob Vigdor) *Economic Inquiry,* Vol. 47, No. 3 (July 2010)

"The Distributional Effects of Minimum Wage Increases when Both Labor Supply and Labor Demand are Endogenous" (joint with Tom Ahn and Walter Wessels) *Journal of Business and Economic Statistics,* Vol. 29, No. 1 (January 2011), 12-23

"Beyond Signaling and Human Capital: Education and the Revelation of Ability" (joint with Pat Bayer and Aurel Hizmo) *AEJ: Applied Economics,* Vol. 2, No. 4 (October 2010), 76-104

"Representation versus Assimilation: How do Preferences in College Admissions Affect Social Interactions?" (joint with Shakeeb Khan and Jacob Vigdor) *Journal of Public Economics*, Vol. 95, No. 1-2 (February 2011), 1-15.

"Practical Methods for Estimation of Dynamic Discrete Choice Models" (joint with Paul Ellickson) *Annual Review of Economics Volume 3,* September 2011, 363-394

"Conditional Choice Probability Estimation of Dynamic Discrete Choice Models with Unobserved Heterogeneity" (joint with Bob Miller) *Econometrica,* Vol. 7, No. 6 (November 2011), 1823-1868 *(formerly titled "CCP Estimation of Dynamic Discrete Choice Models with Unobserved Heterogeneity")*

"Does Affirmative Action Lead to Mismatch? A New Test and Evidence" (joint with Esteban Aucejo, Hanming Fang, and Ken Spenner) *Quantitative Economics* Vol. 2, No. 3 (November 2011), 303-333

"Modeling College Major Choice using Elicited Measures of Expectations and Counterfactuals" (joint with Joe Hotz and Songman Kang) *Journal of Econometrics* Vol. 166, No. 1 (January 2012), 3-16

"Habit Persistence and Teen Sex: Could Increased Access to Contraception have Unintended Consequences for Teen Pregnancies?" (joint with Ahmed Khwaja and Lijing Ouyang) *Journal of Business and Economic Statistics,* Vol. 30, No. 2 (November 2012), 312-325.

"What Happens After Enrollment? An Analysis of the Time Path of Racial Differences in GPA and Major Choice" (joint with Esteban Aucejo and Ken Spenner) *IZA: Journal of Labor Economics,* Vol. 1, No. 5 (October 2012)

"Estimating Spillovers using Panel Data, with an Application to the Classroom" (joint with Jennifer Foster, Natalie Goodpaster, and Josh Kinsler) *Quantitative Economics,* Vol. 3, No. 3 (November 2012), 421-470.

"Pharmaceutical Followers" (joint with Paul Ellickson, Peter Landry, and David Ridley) *International Journal of Industrial Organization,* Vol. 3, No. 5 (September 2013), 538-553 *Winner of the 2014 IJIO Best Paper Award*

"Racial Segregation Patterns in Selective Universities" (joint with Esteban Aucejo, Andrew Hussey, and Ken Spenner) *Journal of Law Economics,* Vol. 56 (November 2013)

"Approximating High Dimensional Dynamic Models: Sieve Value Function Iteration" (joint with Pat Bayer, Federico Bugni, and Jon James) *Advances in Econometrics,* Vol. 51 (December 2013), 45-96

"Race and College Success: Evidence from Missouri" (joint with Cory Koedel) *AEJ: Applied Economics,* Vol. 6 (July 2014), 20-57

"Affirmative Action and University Fit: Evidence from Proposition 209" (joint with Esteban Aucejo, Patrick Coate, and Joe Hotz) *IZA: Journal of Labor Economics*, Vol. 3, No. 7 (September 2014)

*"A Conversation of the Nature, Effects, and Future of Affirmative Action in Higher Education Admissions" (joint with Thomas Espenshade, Stacy Hawkins, and Richard Sander) *University of Pennsylvania Journal of Constitutional Law*, 17:3 (February 2015), 683-728.

"Exploring the Racial Divide in Education and the Labor Market through Evidence from Interracial Families" (joint with Andrew Beauchamp, Marie Hull, and Seth Sanders) *Journal of Human Capital,* 9:2 (Summer 2015), 198-238.

"Affirmative Action in Undergraduate Education" (joint with Michael Lovenheim and Maria Zhu) *Annual Review of Economics*, Vol. 7 (August 2015), 487-518

"University Differences in the Graduation of Minorities in STEM Fields: Evidence from California" (joint with Esteban Aucejo, and V. Joseph Hotz) *American Economic Review*, Vol. 106, No. 3 (March 2016), 525-562

"Affirmative Action and the Quality-Fit Tradeoff" (joint with Michael Lovenheim) *Journal of Economic Literature,* 54(1) (March 2016), 3-51

"Terms of Endearment: An Equilibrium Model of Sex and Matching" (joint with Andrew Beauchamp and Marjorie McElroy) *Quantitative Economics,* 7(1) (March 2016), 117-156

"The Analysis of Field Choice in College and Graduate School: Determinants and Wage Effects" (joint with Joe Altonji and Arnaud Maurel) *Handbook of the Economics of Education Vol. 5, Chapter 7* (May 2016)

"Estimation of Dynamic Discrete Choice Models in Continuous Time with an Application to Retail Competition" (joint with Pat Bayer, Jason Blevins, and Paul Ellickson) *Review of Economic Studies,* 83(3) (July 2016), 889-931

"Productivity Spillovers in Team Production: Evidence from Professional Basketball" (joint with Josh Kinsler and Joe Price) *Journal of Labor Economics,* 35(1) (January 2017), 191-225

Unpublished Papers

"Identifying Dynamic Discrete Choice Models off Short Panels" (joint with Bob Miller) revise and resubmit *Journal of Econometrics*

"College Attrition and the Dynamics of Information Revelation" (joint with Esteban Aucejo, Arnaud Maurel, and Tyler Ransom) revise and resubmit *Journal of Political Economy*

"Conditional Choice Probability Estimation of Continuous Time Job Search Models" (joint with Arnaud Maurel and Ekaterina Roshchina)

"Recovering Ex-Ante Returns and Preferences for Occupations using Subjective Expectations Data" (joint with Joe Hotz, Arnaud Maurel, and Teresa Romano) revise and resubmit *Journal of Political Economy*

"Nonstationary Dynamic Models with Finite Dependence" (joint with Bob Miller) second revise and resubmit *Quantitative Economics*

"Equilibrium Grade Inflation with Implications for Female Interest in STEM Majors" (joint with Tom Ahn, Amy Hopson, and James Thomas)

"The Competitive Effects of Entry: Evidence from Supercenter Expansion" (joint with Paul Ellickson, Carl Mela, and John Singleton)

Awards/Grants

Searle Freedom Trust "Affirmative Action and Mismatch", 2012-2013, $54,141

NSF "Large State Space Issues in Dynamic Models" (with Pat Bayer and Federico Bugni), 2011-2013, $391,114

NSF "CCP Estimation of Dynamic Discrete Choice Models with Unobserved Heterogeneity" (with Paul Ellickson and Robert Miller), 2007-2009, $305,423

NICHD "A Dynamic Model of Teen Sex, Abortion, and Childbearing" (with Ahmed Khwaja) 2004-05. $154,000

Smith Richardson Foundation "Does the River Spill Over? Race and Peer Effects in the College & Beyond" (with Jacob Vigdor) 2003. $50,000

Sloan Dissertation Fellowship 1997-98.

Graduate Student Advising (first time on the market in parentheses)

Chair or co-chair:

Thomas Ahn	2004 (University of Kentucky)
Andrew Hussey	2006 (University of Memphis)
Natalie Goodpaster	2006 (Charles Rivers)
Josh Kinsler	2007 (University of Rochester)
Kata Mihaly	2008 (RAND)
Anil Nathan	2008 (Holy Cross)
Andrew Beauchamp	2009 (Boston College)
Jon James	2011 (Federal Reserve Bank of Cleveland)
Esteban Aucejo	2012 (London School of Economics)
Teresa Romano	2014 (Goucher College)
Marie Hull	2015 (UNC Greensboro)
Tyler Ransom	2015 (Postdoc at Social Science Research Institute, Duke)
Brian Clark	2016 (Federal Trade Commission)
James Thomas	2016 (Postdoc at Yale)
Xiaomin Fu	2017 (Amazon)
John Singleton	2017 (University of Rochester)

Committee Member:

Thomas Anderson	2001 (Bureau of Economic Analysis)
Bethany Peters	2002 (Rhodes)
Justin Trogdon	2004 (University of Adelaide)
Bentley Coffey	2004 (Clemson University)
Derek Brown	2004 (Research Triangle Institute)
Lijing Ouyang	2005 (Postdoc at Centers for Disease Control and Prevention)
Omari Swinton	2007 (Howard)
Kelly Bishop	2008 (Olin School of Business)
Alvin Murphy	2008 (Olin School of Business)
Nicole Coomer[†]	2008 (Workers Compensation Research Institute)
Yang Wang	2009 (Lafayette College)

Aurel Hizmo	2011 (NYU Stern)
Ed Kung	2012 (UCLA)
Kyle Mangum	2012 (Georgia State)
Dan LaFave	2012 (Colby College)
Kristen Johnson	2012 (Research Manager, Harvard Business School)
Songman Kang	2012 (Postdoc at Sanford School)
Jason Roos*	2012 (Rotterdam School of Management)
Hyunseob Kim*	2012 (Cornell Business School)
Patrick Coate	2013 (Postdoc at University of Michigan)
Mike Dalton	2013 (Bureau of Labor Statistics)
Peter Landry	2013 (Postdoc at CalTech)
Kalina Staub	2013 (Lecturer at University of Toronto)
Vladislav Sanchev	2013 (Postdoc at Duke)
Gabriela Farfan	2014 (World Bank)
Chung-Ying Lee	2014 (National Taiwan University)
Lala Ma	2014 (Kentucky)
Deborah Rho	2014 (University of St. Thomas)
Yair Taylor	2014 (Department of Justice)
Gabriela Farfan	2014 (World Bank)
Weiwei Hu	2015 (Hong Kong University of Science and Technology, visiting professor)
Brett Matsumoto**	2015 (Bureau of Labor Statistics)
Joe Mazur	2015 (Purdue)
Jared Ashworth	2015 (Pepperdine)
Ekaterina Roshchina	2016 (Postdoc at University of Washington)
Matt Forsstrom**	2017 (Wheaton College)
Alex Robinson	2017 (Analysis Group)
Ying Shi‡	2017 (Postdoc at Stanford Ed)

(*Fuqua Business student, **UNC student, †NC State, ‡Sanford Public Policy)

Service

Executive committee for the department (1999, 2006-2009), Micro qualifying committee (2000, 2005), Graduate admissions committee (2004, 2006), Chair of faculty computing committee (2004-2006), Micro recruiting committee (2005), Undergraduate reform committee (2005), SSRI Faculty Fellows (2006-2007), Executive Committee of the Graduate School (2006-2007), Director of Graduate Studies (2006-2009), Chair of recruiting committee (2006, 2010), Local Organizing Committee for the North American Meetings of the Econometric Society (2007), Academic Standards committee (2009), Graduate admissions director (2011-2013), Dean of graduate school search committee (2012), Organizer for Cowles conference on Structural Microeconomics (2013), Program Committee for World Congress of the Econometric Society (2015), Program Committee for North American Summer Meetings (2016), Program Committee for International Association for Applied Econometrics (2016, 2017), Senior Recruiting (2016), Program Committee for Society of Labor Economists (2017)

Editorial Responsibilities

Co-Editor, *Quantitative Economics,* (July 2016-present)
Foreign Editor, *Review of Economic Studies* (October 2011-present)
Associate Editor, *Journal of Applied Econometrics*, (January 2007-present)
Associate Editor, *AEJ: Applied Economics,* (May 2009-May 2012)
Editor, *Journal of Labor Economics,* (July 2008-July 2013)
Co-Editor, *Economic Inquiry,* (December 2007-January 2011)

Presentations (since 2010)

2017: (scheduled) Wisconsin, Toronto Education Conference, Central European University. Rees lecture at Society of Labor Economists Conference

2016: Wisconsin, Penn State Economics of Education Conference, BGSE Summer Form Workshop-Structural Micro, keynote speaker for the International Association for Applied Econometrics, Banff Empirical Microeconomics Workshop, NBER Education, Purdue

2015: Minnesota, Brown, Chicago, University of British Columbia, IZA, Mannheim, UCL, London School of Economics, keynote speaker for International Conference of Applied Economics of Education, Carnegie Mellon, Georgetown, Columbia, Universitat Autònoma de Barcelona

2014: Penn Law Symposium on Educational Equality, Austin Institute, Tulane, Michigan Journal of Law Reform Symposium on Affirmative Action, Inter-American Development Bank, Johns Hopkins, AERA Annual Meeting, Tennessee, Chicago Booth, Cowles Conference, University of Pennsylvania, Penn State/Cornell Econometrics Conference, keynote speaker International Conference on “The Economics of Study Choice”, HCEO Conference on Identity and Inequality, Federal Reserve Bank of New York, Arizona State

2013: Colorado, UNLV, Sciences Po, Toulouse, Chicago, NBER Education, Iowa State, Stanford, Washington University, Yale

2012: Stanford Ed, Conference for John Kennan, Cowles Conference, CEME Conference on the Econometrics of Dynamic Games, Brookings Conference on Mismatch in Higher Education, NYU, London School of Economics

2011: Princeton, UNC, UNC-Greensboro, BYU, Wisconsin, Johns Hopkins, Yale, University of Nevada-Reno, UC Davis, Harvard, Cornell, Institute for Research on Poverty

2010: UC Santa Barbara, UCLA, Virginia, Paris School of Economics, Harris School, Washington University, Pittsburgh, Michigan, Higher Education Conference at Western Ontario