Recruit to Reject?
Harvard and African American Applicants*

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Abstract

Elite colleges in the US have seen dramatic increases in applications over the past few decades. We provide context for part of this trend using detailed data on Harvard University that was unsealed as part of the *SFFA v. Harvard* lawsuit. We show that Harvard encourages applications from many students who effectively have no chance of being admitted, and that this is particularly true for African Americans. After a twenty-eight year period where the African American share of applicants to Harvard was roughly stable, the African American share of applicants grew by almost 57% over four years. Yet, there was little change in the share of admits who were African American, consistent with our finding that the increase in applications was driven by those with lower SAT scores. We show that this change in applicant behavior resulted in substantial convergence in the overall admissions rates across races yet no change in the large cross-race differences in admissions rates for high-SAT applicants.

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"Harvard does not seek a large applicant pool as an end in itself; Harvard's recruitment process must be directed at students who show promise of succeeding at the College. Recruiting students who are not likely to be accepted would have little effect other than to increase the number of disappointed applicants and discourage promising younger students at their schools from applying to Harvard in the future."

—Harvard Committee to Study Race-Neutral Alternatives
(*SFFA v. Harvard* Trial Exhibit P316, p. 9)

1 Introduction

Applications to elite colleges and universities have skyrocketed over the past twenty years with little change in the number of admits (DeSilver, 2019). At top schools, admission rates are now in the single digits (U.S. News & World Report, 2019).[1] With such low admit rates, many applicants simply have no chance of being admitted, suggesting clear information problems in this market. Even though the Common App has lowered the costs of applying to multiple institutions (Knight and Schiff, 2019), the high rejection rates imply significant wasted resources in terms of the applicant's time filling out additional essays, the monetary costs associated with applying to the school (both directly and through sending score reports), and the time of the admissions officers reading files.

Part of the reason for these high application rates is that colleges actively recruit applicants. Students who take exams such as the PSAT are often flooded with brochures from various colleges (Rivard, 2013b; Strauss, 2017). For example, Howell, Hurwitz, and Smith (2019) find that in a sample of 2015-2016 SAT test takers, the average number of institutions purchasing a student's contact information is 28.5. Colleges recruit students to find the most productive matches and to maximize the number of full-paying students (Rivard, 2013b). However, there are additional incentives to recruit students to apply, even those who have no chance of admission. This phenomenon, dubbed 'recruit to deny' in the popular press, results in part from college rankings depending on the selectivity of the school (Colarusso, 2015). Prior to 2019, one of the factors that influenced U.S. News & World Report's college

[1] For example, the admissions rate for the Harvard Class of 2023 was 4.5% (Caldera and Mohammadzadeh, 2019).

rankings was the acceptance rate of the college (Morse, Brooks, and Mason, 2018).[2] Other incentives to recruit include attracting a diverse applicant pool. In 2019, the College Board charged 45¢ for each name provided to interested colleges, with colleges (assuming student consent) able to send information based on factors such as students' test scores, high school GPA, intended college major, gender, race, and geography.[3]

Using data made public in the *SFFA v. Harvard* lawsuit, we examine Harvard's recruiting strategies as well as how these strategies affect the applicant pool and eventual admissions outcomes.[4] We pay particular attention to the effects for African American applicants. The clearest example of how Harvard recruits students differently based on race comes from the ways Harvard uses information from standardized tests. Harvard uses data from the PSAT, SAT, ACT, and Advanced Placement (AP) tests to send out recruitment letters based on the scores students receive. In recruiting for the Class of 2018, Harvard sent out over 114,000 letters to admit 2,047 students.[5] Harvard implemented substantially different cutoffs based on the race or ethnicity of the applicant for each of the tests except AP. For example, on the SAT, underrepresented minorities needed to score an 1170 on a 1600 point scale—a score at roughly the 78th percentile. The corresponding scores for other groups were much higher. For example, an Asian American male needed a 1380 to qualify for a letter, a score roughly at the 93rd percentile. (By comparison, the 25th percentile SAT score among Harvard matriculants in Fall 2017 was 1460.[6]) All told, almost 50% of those qualifying for a recruiting letter were underrepresented minorities.

Casting a wide net for underrepresented groups, including African Americans, is important in order to satisfy diversity goals. But, as indicated by the quote at the beginning of our paper, this is only true if the applicant has some hope of being admitted (assuming the

[2]Prestige-motivated recruiting efforts by elite universities in the US date back to at least 1915, when Dartmouth College, in an effort to increase its national presence and selectivity, began making presentations at public high schools in the mid-Atlantic region (Levine, 1986, p. 138).

[3]See College Board (2019c) for pricing details. Strauss (2017) details all of the data collected on test-takers, as well as showing that the range of variables collected is largest for the SAT, followed by the PSAT, followed by AP exams. College Board (2019b) indicates that colleges are also provided with detailed data about the student's high school.

[4]For a complete list of the legal documents used in this paper, see Appendix Table B1.

[5]The number is even smaller for domestic students, since international students make up about 10% of the admitted class (Trial Exhibit DX 042).

[6]The source for this is the Integrated Postsecondary Education Data System (IPEDS).

diversity goals are associated with actual attendance rather than application shares). As we show, a large portion of the African American applicant pool effectively has no chance of admission based on their test scores and grades alone.

Our analysis is based on three sets of Harvard admissions data. First, Document 415-8 and Document 419-141 provide analysis of detailed individual-level applicant data for the Classes of 2014–2019. Second, Trial Exhibit DX 042 provides information on the number of applications, admits, and matriculants by race for the Classes of 2000–2017, as well as average SAT scores by race and applicant, admit, or matriculant status.[7] Finally, Trial Exhibit P044 reports the number of applications and admits by race and SAT score bin—separately for each test subsection—for the Classes of 2009–2016.

Using the individual-level applicant data for the Classes of 2014–2019, we first focus on the links between race, admissions chances, and Harvard's academic index—a weighted combination of the student's SAT scores, SAT II subject test scores, and high school grades.[8] We concentrate on a set of domestic applicants who are not otherwise advantaged in the admissions process. As shown in Arcidiacono, Kinsler, and Ransom (2019b), recruited athletes, legacies, those on the dean's interest list, and children of faculty and staff (ALDC) receive large admissions preferences. For some levels of the academic index, essentially all admits are from one of these groups.[9] Focusing instead on non-ALDC applicants, we find that African Americans account for only 11% of the applicant pool, but 41% of the applicants in the bottom decile of the academic index. The admit rate for non-ALDC African Americans in the bottom decile was 0.03%: only 2 of the 5,921 applicants in this decile were admitted over the six year period.[10]

While there are a number of potential reasons why we see this striking pattern for African

[7]We supplement this document with Trial Exhibit DX 030, which provides the number of applicants, admits, and matriculants for African Americans back to 1980.

[8]The academic index ranges from 60 to 240 and is roughly equal to the sum of the three components, where each is on an 80-point scale. For the Classes of 2014–2019, the median academic index was about 223 (Trial Exhibit P617), and the average converted GPA among applicants was 75 out of 80 (Trial Exhibit DX 730). This means that the two SAT score components would be about 148, or 1480 on average. To put that number into perspective, the average SAT for admits in the Class of 2017 was about 1488 (see Trial Exhibit DX 042, p. 11 and multiply by two).

[9]For example, in the lowest academic index decile, the admit rate for ALDC students is above 5%, while for non-ALDC students the admit rate is only 0.01%.

[10]For all other races, no non-ALDC applicants in the bottom decile were admitted over these six years.

Americans, historical data provided in Trial Exhibit DX 042 and Trial Exhibit P044 tell us when these patterns emerge. The data from Trial Exhibit DX 042 show that, while applications of all races have increased substantially, the increases are especially large for African Americans between the Classes of 2008 and 2012. Namely, the African American share of applicants grew from 6.4% for the Class of 2008 to 10.1% for the Class of 2012. To put this jump in context, consider that the African American share of applicants for the class of 1980 was 5.9%.[11] Despite the run up in applicants beginning in 2008, the share of admits who were African American remained unchanged. At the same time, the average SAT score of African American applicants fell by 33 points (on an 800-point scale) over this four-year period. A graphical depiction of these striking patterns is presented in Figure 2. The data by SAT score bins from Trial Exhibit P044 show a sharp increase in the number of African American applicants whose SAT scores were lower than 550 on any of the SAT subsections. In 2009, the number of African American applicants with scores above 640 was more than double the number of applicants with scores below 550. But for the Class of 2012, there were fewer African American applicants with math scores above 640 than below 550.[12]

The timing of the increase in relatively low-scoring African American applications coincides with two events. First, the Harvard Financial Aid Initiative was announced in February 2004, after application decisions for the Class of 2008 had been submitted but before matriculation decisions for that class were made. This program greatly increased financial aid generosity to students coming from family incomes under $60,000.[13] However, this is unlikely to be the sole driver of the increase in relatively low-scoring African American applications since the African American share of high-scoring applications did not change over the period. Second, two high-profile Supreme Court decisions on affirmative action—*Gratz v. Bollinger* and *Grutter v. Bollinger*—took place immediately prior to the Class of 2008 application cycle. Following these two decisions, differences in Harvard admissions rates across races

[11] For the 28 year period between the classes of 1980 and 2008, the minimum and maximum African American applicant share are 4.5% and 6.4% respectively.

[12] The similar numbers for Asian Americans show that the number of applicants with scores above 640 was at least 46 times the number of applicants with scores below 550 in all years. For Hispanics, the ratio of above-640 to below-550 is always larger than 2.8.

[13] The program guaranteed that students whose parents earn less than $40,000 would not have to pay anything out of pocket to attend Harvard, and that students from families earning $40,000–$60,000 would see a greatly reduced out-of-pocket expenditure requirement.

have shown a dramatic convergence.[14] In 2009, African American applicants were admitted at a 67% higher rate than Asian American applicants but by 2016 the rate had fallen to 3% higher.[15] Yet this convergence masks the fact that, for high-scoring applicants, the admissions advantages for African Americans were relatively unchanged: African Americans who scored above a 740 on the SAT math were 4.46 times as likely to be admitted as a similar-scoring Asian American in 2009 and were 4.65 times as likely to be admitted in 2016.

The relatively high admit rate for African Americans who scored above a 740 on the SAT math is consistent with Harvard's stated goals of pursuing a diverse class. Less clear is precisely why Harvard, starting around 2008, significantly expanded recruiting efforts focused on low-SAT African American applicants. As noted above, Harvard's financial aid initiative and liability concerns related to affirmative action may be contributing factors. More directly, attracting a diverse applicant pool could aid in promoting a diverse incoming class even if only one or two of these students are admitted. Yet, the idea that to achieve this goal Harvard needs to apply different test score thresholds by race is tacit recognition of the serious racial inequalities in this country affecting children prior to the time of college-going. In addition, by recruiting many African American applicants who have essentially no chance of being admitted (so that the applicant pool better reflects the population), Harvard masks the substantial racial inequality in academic preparation. It is this racial inequality in pre-college academic preparation that is in need of serious attention (Chetty et al., 2018).

The decision by Harvard (and likely many other schools) to recruit applicants who have little to no chance of admission also generates important information frictions that can reduce the efficiency of the higher education market. When the market is flooded with misinformation, parents and students may have a difficult time deciphering sources that are reliable and accurate, ultimately leading to suboptimal application behavior and possibly

[14] These two cases brought race-based admissions policies under scrutiny for the first time in 25 years (following *Bakke v. University of California* in 1978). Why Harvard would want convergence in the admissions rates and/or similar representation rates in the applicant and admissions pools is an open question. One potential reason is that Harvard would want to downplay the magnitude of race-based preferences in the aggregate data (as a defense against future lawsuits on the question), and convergence in admissions rates would be one way to accomplish that.

[15] The admission rate for African Americans (Asian Americans) was 12.9% (7.7%) in 2009 and 6.2% (6.0%) in 2016. Moving back to 2000, the admit rate for African Americans was over twice that of Asian Americans: 19.2% versus 9.2%. Even back in 1990, the African American admit rate (28.9%) was more than double the Asian American admit rate (12.7%); see Trial Exhibit DX 030 and Trial Exhibit DX 033.

mismatch. As an example, Hoxby and Turner (2013) run an experiment where low-income, high-achieving students are sent customized information on the college application process and colleges' net costs. However, they find that 60–70% of the treated students simply discarded the packet of information, which the authors attribute to families "not recogniz[ing] the bona fides of the intervention organization." Harvard and other elite schools likely contribute to the high levels of household skepticism in the college application system with their aggressive recruiting campaigns.

The rest of the paper proceeds as follows. In Section 2, we briefly describe the strategies Harvard uses to recruit applicants, paying particular attention to how race is treated in the process. In Section 3, we discuss admission patterns in the individual-level data for the Classes of 2014 to 2019. In Section 4, we use the historical data to show how application and admit rates for different races have evolved over time. Section 5 discusses possible explanations for the empirical patterns. Section 6 concludes.

2 Harvard's Recruiting Strategies

In this section, we provide background on methods Harvard uses to recruit applicants.[16] These consist of the following: purchasing student information from College Board and ACT to create search lists; financial aid programs; and direct outreach to potential applicants.[17]

2.1 College Board and ACT Search Lists

Harvard identifies prospective students in the US and Puerto Rico by purchasing student information from the College Board and ACT.[18] Information consists of each student's name

[16]These methods are described in detail in the Harvard Alumni Interviewer Handbook (Trial Exhibit DX 005), pp. 13–14.

[17]These strategies and others are also discussed in Hoxby and Avery (2013). Additional strategies include "guaranteeing need-blind admission, disproportionately visiting high schools with large numbers of free-lunch-eligible students, sending special letters to high achievers who live in high-poverty ZIP codes, maintaining strong relationships with guidance counselors who reliably direct low-income applicants to them, coordinating with or even *running* college mentoring programs for low-income students, paying a third-party organization for a guaranteed minimum number of low-income enrollees, sponsoring campus visits for students from local high schools known to serve low-income families, and personally contacting students whose essays suggest that they might be disadvantaged" (original emphasis).

[18]For more details on the College Board Search Service, see College Board (2019a).

and physical address, as well as email address and social media accounts (Day 3 Trial Transcript, p. 147). Harvard uses PSAT, SAT and AP scores from the College Board, and ACT scores from the ACT. In the case of the College Board, each name costs 45¢ (College Board, 2019c), which is up from 37¢ six years earlier (Rivard, 2013a). In all, Harvard sent out almost 112,000 letters to applicants for the Class of 2017, and over 114,000 for the Class of 2018 (Trial Exhibit P002), of which roughly 70% came from the PSAT.[19] While the term "letters" conjures an image of postal mail, nowadays Harvard's recruitment primarily utilizes email and social media. In fact, students on the search list may receive up to 50 electronic communications throughout their last two years of high school.[20]

As of the Harvard Class of 2017, Harvard employed varying cutoffs for determining who was included on the search list. The cutoffs vary by race, gender, and state of residence (Trial Exhibit P002).[21] We present in Table 1 an adapted version of Trial Exhibit P002. The table shows SAT-equivalent score cutoffs to be included on Harvard's search list based on PSAT performance. In addition to test score cutoffs, Harvard also considers a student's self-reported GPA. Men who are not underrepresented minorities (i.e. those who are white or Asian American) are required to get at least a 1380 on the test—the 93rd percentile in the national distribution—to be recruited.[22] Non-minority women have a lower cutoff at 1350, which is the 91st percentile nationally. Those who come from so-called "sparse country"—US states with relatively low population density—face an even lower cutoff at 1310, which is the 88th percentile.[23]

[19] Approximately one quarter comes from the SAT or ACT, while the remaining roughly 5% comes from AP exams.

[20] See Day 3 Trial Transcript, p. 147. For an example of the types of emails Harvard sends to students, see Trial Exhibit P055. Notably, one of the messages sent informs prospective students that "Your strong grades and standardized test scores indicate to us that Harvard and other selective institutions may be possibilities for you."

[21] It is unclear from available public documents how recruiting intensity varies with race, gender, etc. The only evidence along these lines is Trial Exhibit P055, which appears to show that different versions of the same recruiting email are sent to different race-gender combinations. The difference appears to be the name and ethnicity of the current Harvard student featured in the message.

[22] See College Board (2018) for exact percentiles used to compute these.

[23] Asian American applicants from "sparse country" do not benefit from the lower cutoff. The following explanation for this pattern was offered by the Harvard Dean of Admissions, "...there are people who, let's say, for example, have only lived in the Sparse Country state for a year or two. Let's say that can happen. And then on the other hand there are people who have lived there for their entire lives under very different settings. So what we're trying to make sure we do, in an even-handed way, is to reach out to what lots of people would say is the heartland of America." See Day 1 Trial Transcript, p. 148.

The picture in Table 1 is much different for minorities (i.e. African Americans, Hispanics, and Native Americans). The SAT-equivalent score cutoff for each group is 1100, which corresponds to just the 58th percentile nationally. Minorities also face a lower GPA cutoff, with a B+ being the lowest permissible GPA, compared to an A− for all other groups.

Finally, in the last column of Table 1, we report the average SAT score among Harvard admits for each group. We know this only by race/ethnicity, so some values are duplicated. What is striking about this is that the score cutoff is at most 190 points below the average score of admits for whites and Asian Americans, but is more than 330 points below admits' SAT for each of the minority groups.

It is unclear from lawsuit documents and public records how long Harvard has used the search list. The list was first publicly mentioned as a successful recruiting tool for the Class of 2007 (The Harvard Gazette, 2003), but may have been used before then.[24] Additionally, it is not clear how many students on the search list actually end up applying to Harvard, or how many applications Harvard receives from students who did not appear on the search list.[25] For a broader pool of universities, Howell, Hurwitz, and Smith (2019) find that receiving a recruiting letter increases the probability of applying to that school by 23%. Additionally, they find that African-American students and students whose SAT score is 200 points below the recruiting school's average are significantly more responsive to recruiting efforts.

2.2 Financial Aid

The Harvard Financial Aid Initiative (HFAI) was established in the summer of 2004 and had two primary goals. The first was to ensure that all admitted students have the opportunity to attend Harvard. Second, HFAI aimed to raise awareness of college affordability for students interested in all kinds of colleges and universities (The Harvard Gazette, 2005). Initially, the program greatly increased the financial aid given to students from families with incomes

[24] As of 2013, the practice of purchasing search lists appears to be widely embraced by nearly every university and college in the US (Rivard, 2013b). Also in 2013, College Board and ACT were sued for allegedly unlawfully selling students' data to universities (Rivard, 2013a). Privacy issues surrounding the collection of student data for myriad uses continued to receive scrutiny four years later (Strauss, 2017).

[25] Among African American Early Action applicants to the Class of 2017 who scored below 1240 on the SAT, 54% (64/119) were actively recruited (Trial Exhibit P050, p. 1). It is difficult to use this information to infer anything about the broader application yield from the search list, since this figure is for Early Action applicants from one cycle.

of less than $60,000. In 2008, HFAI expanded its scope by targeting aid to families with incomes between $60,000 and $120,000. Since its initial implementation, the admissions and financial aid office have coordinated to personally reach out to students for whom the HFAI program would be most beneficial.[26]

2.3 Direct Outreach

In addition to College Board searches and financial aid initiatives, Harvard recruits applicants through various direct outreach programs. Harvard relies on alumni, admissions staff, and current undergraduate students to aid in this recruiting effort.

The bulk of Harvard's face-to-face recruiting comes through its vast network of alumni interviewers. Known as the Schools Committee, this group of over 10,000 alumni actively recruits applicants (Day 1 Trial Transcript, pp. 131–132). Harvard furnishes each of its Schools Committees with the names of students from the local area who were on search list purchased from College Board and ACT (ibid., p. 130). Members of the Schools Committee are encouraged to invite these members to attend any public recruiting events that may be held (ibid.). Once the application process has started, members of the Schools Committee interview applicants.[27] After interviews are completed, each Schools Committee meets to rank applicants from their local area and send the recommendations back to the admissions office (Trial Exhibit DX 005, p. 36).

Members of Harvard's admissions staff also directly interact with potential applicants. Harvard staff members, along with admissions staff from other elite universities, visit over 130 US cities (Trial Exhibit DX 005) and hold information sessions open to the general public. Through these efforts, Harvard contacts over 50,000 students. Notably, students who appear on the test score search list are invited by the local Schools Committee to attend recruiting events (Day 1 Trial Transcript, p. 131). Additionally, the admissions office holds interviews and information sessions on Harvard's campus (Trial Exhibit DX 005, p. 14).

Current undergraduate students also play an important role in recruiting, particularly for underrepresented minority applicant groups. The Undergraduate Minority Recruitment

[26] See Trial Exhibit DX 005, p. 14

[27] For complete details on Harvard's application process, see Arcidiacono, Kinsler, and Ransom (2019b).

Program (UMRP) consists of more than 20 undergraduates who conduct personal outreach to minority students. UMRP members also travel to schools with large concentrations of minority students to encourage the students to apply to college. The UMRP works closely with the financial aid office to identify students who could benefit from HFAI and who would otherwise not consider applying to Harvard (Trial Exhibit DX 005, p. 14).

3 Harvard Applicants, Classes of 2014–2019

Using individual-level application data, we explore how the recruiting practices at Harvard cited above influence the academic attributes of the applicant pool. We focus primarily on recruitment through the College Board since it is explicitly tied to a student's academic credentials.

3.1 Applicant Data

Our analysis of individual applicants is based upon anonymized data on domestic applicants produced by Harvard and used in the trial's expert witness reports. The sample consists of 166,727 domestic, non-transfer, complete applications of which 11,132 were admitted.[28]

For each applicant, the data contain detailed demographic information, academic performance in a variety of categories, scores on each of Harvard's internal ratings, and final admission decisions. For more details on the application process, see Arcidiacono, Kinsler, and Ransom (2019b). The findings presented in the current paper are based solely on information in the publicly released versions of the expert witness reports or information publicly released in other documents.

3.2 Academic Preparation and Admission

We begin by examining the distribution of academic preparation among Harvard applicants using the academic index, a variable available in Harvard's admissions data. The academic index is a weighted average of an applicant's scores on the SAT, SAT II, and high school

[28]For further details about the data and sample selection, see sections 2.2 and 2.3 of Document 415-8 and section 3 of Document 419-141.

grade point average (or class rank).[29] It is used primarily by Ivy League institutions and was designed specifically to regulate athletic recruitment.[30] The academic index provides a simple summary of the academic credentials of an applicant. There are numerous online calculators that will not only compute a potential applicant's academic index, but also provide feedback on whether the applicant's academic index is competitive. The index ranges in value from 60 to 240.

We construct deciles of Harvard's academic index for all domestic, non-recruited athlete applicants applying between 2009 and 2014.[31] The ranges of the academic index deciles are presented in Table 2, as well as admit rates for applicants in each decile. For the admit rates, we split applicants into two groups: (1) legacy, dean's interest list, and children of faculty/staff (LDC) and (2) applicants with no special status as a recruited athlete or LDC (non-ALDC).

The bottom 10% of applicants to Harvard have an academic index below 193.8, while the bottom 20% all have an academic index less than or equal to 205.5. Thus, the bottom 20% of applicants according to the academic index would all be deemed weak by readily available admissions websites. Consistent with this, the admit rates for non-ALDC applicants in the 1st and 2nd deciles are 0.01% and 0.53% respectively. Out of 14,593 non-ALDC applicants in the 1st academic index decile, only two were admitted over the entire six-year period. Thus, being in the lowest academic index decile essentially guarantees rejection. The corresponding admit rate for LDC applicants in the bottom decile is 500 times higher, illustrating the strong preferences Harvard employs for special status applicants.

By construction, approximately 10% of the applicants fall within each academic index

[29]For those who took only the SAT, the highest math score on any of the times the applicant took the SAT is averaged with the highest verbal score and then divided by 10. The average of the two highest SAT subject test scores, again divided by 10, is then added to the SAT number. Finally, these two numbers are added to a measure of the student's high school GPA or class rank that has been converted to a 20–80 point scale. See Document 415-8 footnote 29.

[30]See `https://www.toptieradmissions.com/resources/college-calculator/` for additional information.

[31]We remove recruited athletes because their admit rates are extraordinarily high and are the only ones admitted given especially low scores on Harvard's academic rating. Over the course of this time period, the admit rate for recruited athletes was 86%. See Arcidiacono, Kinsler, and Ransom (2019b) for an analysis of athlete preferences at Harvard. We 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. See Document 415-8 footnote 51 for details.

decile. However, the racial distribution of applicants is not uniform across the deciles. Table 3 shows the distribution of non-ALDC applicants across deciles by race, along with the corresponding admit rates. Nearly 40% of non-ALDC African American applicants are in the bottom academic index decile. Over 60% of non-ALDC African American applicants are in the bottom two deciles combined. By comparison, only 13% (9%) of white (Asian American) non-ALDC applicants are in the bottom two deciles. The admit rate for African American applicants in the bottom decile is 0.03%, meaning that nearly 40% of African American applicants, or 5,900 prospective students for the Classes of 2014–2019, have essentially no chance of being admitted to Harvard.

Regardless of race, any applicant in the bottom academic index decile has essentially no chance of admission. This fact by itself is not surprising or alarming. However, as Table 4 illustrates, African American applicants account for 43% of the non-ALDC rejections in the lowest academic index decile. Overall, African American applicants account for only 12% of all non-ALDC rejections.[32] Thus, African American applicants are substantially over-represented among rejected applicants with low SAT scores and high school GPAs. At the top of the academic index distribution, admit rates for African American applicants are relatively high and African American applicants account for relatively few rejects. For example, in the 9th academic index decile, the admit rate for African American applicants is approximately five (seven) times higher than the admit rate for white (Asian American) applicants. At the top of the academic index distribution, racial preferences appear to play a large role, while at the bottom of the distribution, race is inconsequential since all applicants are noncompetitive.

In addition to the academic index, Harvard also assigns each applicant an academic rating. This rating ranges from 1 to 5, with 1 being the highest rating.[33] Similar to the academic index, Harvard's academic rating can incorporate SAT scores and GPA, but it can also take into account additional information such as AP scores, high school competitiveness, and other academic achievements such as success in science or math competitions (Document

[32]The patterns for Hispanic applicants are similar to those of African American applicants, though slightly muted. 20% of non-ALDC Hispanic applicants are in the bottom decile of the academic index, or approximately 3,600 applicants.

[33]See Document 419-1, pp. 158–160 for more detail on the rating. See Arcidiacono, Kinsler, and Ransom (2019b) for an overview of Harvard's non-academic ratings.

419-1, pp. 167–169). The racial patterns we observe in the academic index deciles are also present in the academic rating, and the two appear to be highly correlated, as we show later in more detail. More than 50% of non-ALDC African American applicants receive an academic rating of 4 or worse. In contrast, only 10% (8%) of white (Asian American) applicants receive a rating of 4 or worse (see Trial Exhibit P621). The admit rate for non-ALDC applicants with an academic rating of 4 or worse is 0.01%.[34]

Why are there so many African American applicants to Harvard who appear to effectively have no chance of being admitted? Harvard's recruitment strategy appears to play a role. The cutoffs Harvard uses in recruiting applicants through the College Board (see Table 1) can be mapped to academic index values. Consider an African American applicant towards the low end of the SAT range that qualifies for a recruitment letter, 1170.[35] Suppose this individual also earned a combined 1170 on their two SAT II tests, and had a converted GPA equal to the average among applicants (75, see Trial Exhibit DX 730). This would yield an academic index of $117 + 75 = 192$, well within the first decile of the academic index. In other words, Harvard is actively sending recruiting materials to prospective students who effectively have no chance of being admitted.[36]

One rationale for recruiting applicants with noncompetitive academic credentials is that these applicants may be highly competitive in other dimensions that Harvard values (i.e. extracurricular activities, personal qualities, and secondary school teacher recommendations). While the admit rates at low academic index deciles and low academic ratings suggest this is not the case, we show this explicitly in Table 5. Panel A shows that the academic rating moves closely with the academic index. Panels B through D show that applicants in the bottom deciles of the academic index are significantly less likely to be rated highly according

[34] See Trial Exhibit P618 for admit rates by academic rating. There are just 3 admits out of 24,511 applicants with an academic rating of 4 or worse.

[35] As discussed in Section 2, approximately 70% of recruiting letters are determined by the PSAT. Thus, there is a chance that students with low PSAT scores eventually obtain significantly higher SAT scores. However, in Section 4 we show that the sharp increase in African American applicants starting in 2009 is driven entirely by low SAT score applicants and that essentially none of these applicants are admitted.

[36] White and Asian-American recruits scoring at the low end of the SAT search range also have a low probability of admission. Consider a white male applicant who scored a 1380 on the SAT and SAT II, and had a converted GPA equal to the average among applicants. This applicant's academic index would be 213, essentially on the border between the 3rd and 4th decile. The admissions probability for this applicant would probably be about 1%. While low, the overall admit rate for all non-ALDC applicants is only about 5.5%.

to their extracurricular activities, personal qualities, or teacher recommendations.[37] In other words, it is unlikely that an applicant who has relatively weak academic credentials will be strong on non-academic credentials. As a result, recruited students who are not academically competitive do not gain admission to Harvard.

An important caveat to the above analysis is that the PSAT cutoffs for African Americans were the same as the PSAT cutoffs for Hispanics for the Classes of 2014–2019. At slightly under 20%, non-ALDC Hispanics are also over-represented in the bottom decile of the academic index.[38] But this is still much smaller than the rate for African Americans.[39] Part of the explanation may lie in Hispanics having an SAT score distribution that is to the right of African Americans. Part of the explanation may also be residue from different cutoffs prior to the Class of 2014. As we illustrate in the next section, the application patterns are consistent with African Americans and Hispanics having different cutoffs prior to 2014.

4 Historical Trends in Applications at Harvard

For the Classes of 2014–2019, Harvard sent letters of interest to many African American high school students who essentially had no chance of admission. Over this short window, Harvard's recruitment practices appear fairly steady—the share of non-ALDC African American applicants in the bottom two academic index deciles ranges from 63.1% in 2014 to 57.1% in 2019 (Document 415-8, Table B.5.7). However, this has not always been the case. Using historical records on Harvard admissions, we provide evidence that suggests Harvard has altered its recruiting practices over time.

We focus on three data sources. First is Trial Exhibit DX 042, which lists aggregate numbers of applications, admissions, and matriculations by race/ethnicity and athlete/legacy status for each of the Harvard Classes of 2000–2017 (applicants graduating high school in

[37] Other Harvard ratings, such as Teacher 2, School Counselor, and Alumni ratings, show similar patterns.

[38] Additionally, more than 35% of non-ALDC Hispanic applicants receive an academic rating of 4 or worse (see Trial Exhibit P621).

[39] This suggests that a portion of the African American applicants in the bottom decile of the academic index are not actually recruited through the College Board or other testing services. However, as discussed in Section 2, there are other channels through which Harvard reaches out to potential African American applicants, such as the UMRP program. These additional recruiting efforts may help explain the large overrepresentation of African American applicants in the bottom academic index decile.

1996–2013).[40] This document also has information on average SAT scores for applicants and admits by race and year. Second is Trial Exhibit P044, which lists detailed SAT distributions by admit status, race and year, covering the Classes of 2009–2016. Third are the recruitment reports given in Trial Exhibit P002, Trial Exhibit P050 and Trial Exhibit P057, which show test score cutoffs as well as the number of students who qualify according to the various search criteria.

4.1 Application Trends at Harvard

As documented in Arcidiacono, Kinsler, and Ransom (2019a), applications to Harvard increased substantially over the 2000–2017 time period. Using data from Trial Exhibit DX 042, Figure 1 shows the growth in total applications, as well as key events in US law or changes in Harvard's admissions policies.[41] Applications grew considerably over the period of 2012–2015.

The growth in applications for African Americans, however, occurred earlier. Figure 2(a) shows the share of applicants and admits over time who were African American. The time trend for applicants can be characterized by three periods. The first period spans the Classes of 1980–2008. Here, the African American share of applicants is slightly increasing, from about 5% in the early 1980s to about 6% in the mid-2000s. The second period, covering 2008–2012, sees the African American share of applicants rise dramatically, increasing from 6.4% to 10.1% in four years, a 58 percent increase. The third period, covering 2012–2017, shows no time trend.

The patterns for the African American share of admits are much more stable, and especially so during 2008–2012—the period of rapid growth in the African American share of

[40] Similar to Trial Exhibit DX 042, we can recover data back to the Class of 1980 using Trial Exhibit DX 030, Trial Exhibit DX 031, and Trial Exhibit DX 033. These exhibits provide aggregate numbers of applications, admissions, and matriculations for African Americans, Hispanics, and Asian Americans. They do not include SAT scores for these groups, nor do they provide separate counts by athlete/legacy status.

[41] The US Supreme Court cases *Gratz v. Bollinger* and *Grutter v. Bollinger* were decided in June 2003, just prior to the start of the Class of 2008 application cycle. About one year later, Harvard implemented the HFAI. As mentioned before, this financial aid initiative greatly reduced the required contribution for families from lower income backgrounds. The next change happened in 2007, just before the Class of 2012 application cycle. Here, Harvard eliminated its early action program and also announced innovations to the HFAI. These financial aid innovations greatly reduced the cost of attendance for families between $60,000 and $120,000. Finally, prior to the Class of 2016 application cycle, early action was reinstated.

applicants.[42] While the African American share of admits grew by about two percentage points between 1980 and 2008, the share in 2008 is essentially identical to the share in 2012. So, despite a 58 percent increase in the African American share of applicants during this four-year period, the African American share of admits remained unchanged.[43]

This pattern is consistent with the rise in the African American share of applicants coming from noncompetitive applicants or with Harvard having a quota on the share of African American admits. To investigate how the competitiveness of African American applicants changed over time, Figure 2(b) plots the average SAT scores for African American applicants over this period. Between 2000 and 2008, the average SAT score for African American applicants rose slightly, from 627 to 636 on an 800-point scale. But from 2008 to 2012, the average SAT scores of African American applicants steadily fell, dropping by 33 points (or roughly one-third of a standard deviation in the national distribution; see College Board, 2012, p. 7) over four years. Indeed, 2012 is the minimum average SAT score for African American applicants during the time period of our data. After 2012, the SAT scores of African American applicants recover a bit, but remain at least seven points lower than any of the pre-2009 classes.

The sharp decline in SAT scores among African American applicants beginning in 2008 does not hold for any of the other major racial/ethnic groups applying to Harvard, as we show in Appendix Figure A2. Hispanic applicants show a dip of 15 points between 2008 and 2012, but their scores fully recover by 2017. The average SAT score for white and Asian American applicants is rising or flat over the 2000–2017 time period.

SAT scores for admits also rose over this time period for each racial/ethnic group. For example, the average SAT score for admitted African Americans grew from 693 to 717. For white and Asian American admits, the growth was more modest at less than 10 points for each group. This further supports our claim that the growth in applications for African

[42] We are unable to distinguish between African Americans whose parents immigrated to the US, versus those whose parents and grandparents were born in the US. As Massey et al. (2007) show, there is a large over-representation of African Americans in the Ivy League who have at least one parent born outside the US.

[43] For comparison purposes, Figure A1 shows the share of applicants and admits over time who were Hispanic. The overall time patterns differ in that the share of Hispanic applicants and admits is growing throughout the period, consistent with broader US demographic trends. Additionally, the gap in the Hispanic share of admits and applicants is smaller throughout, with a convergence starting around 2006.

Americans in particular was driven by unprecedented growth in noncompetitive applicants.

Additional documentation from Harvard supports the hypothesis that the rise in applications among African Americans starting in 2008 was driven by noncompetitive applicants. Trial Exhibit P044 lists the number of applicants and admits for the 2009–2016 admissions cycles by race/ethnicity and SAT math, verbal, and writing score ranges. In Figure 3(a), we report the number of African American applicants from four different SAT math score ranges. What is striking is the growth in the number of African American applicants whose SAT math score is below 550.[44] Between 2009 and 2013, the number of African American applicants with SAT math scores below 550 increased from approximately 300 to nearly 800. In 2012 alone, there were more African American applicants with scores below 550 than with scores above 640.[45] These patterns are not mirrored by other racial groups.[46] Figure 4(a) shows that African Americans accounted for an increasing share of sub-550 SAT math applications, rising from 35.5% to 46.5% between 2009 and 2013. But among those scoring above 740, the share who were African American shows little change over time.[47]

That these low test score applications have little chance of admission is shown in Figure 3(b). Here we show the number of African American admits from each math SAT score bin. Admits overwhelmingly come from the over-640 score range, with virtually no admits coming from the sub-550 range.[48]

Interestingly, there is an almost 20% drop in the number of African American applications with scores below 550 on the math section for the Class of 2014 (in both Figures 3 and 4). After the Class of 2014, the application pattern mirrors that of the other SAT score groups. This pattern is also seen in the verbal and writing sections. At the same time, there is

[44] In 2008, a 540 on the math SAT would correspond to the 56th percentile; a 650 would correspond to the 86th percentile. See https://blog.prepscholar.com/sat-historical-percentiles-for-2010-2009-2008.

[45] In Appendix Figure A4, we show similar graphs for the SAT verbal and writing scores. The results look very similar.

[46] Appendix Figures A6–A8 show the applicant and admit totals across SAT score ranges and subjects for Hispanics. While there is a slight uptick in applications among Hispanics scoring below 550 on any of the sections of the SAT, the rate of increase is similar across other test score ranges. This is not consistent with the pattern for African Americans.

[47] The patterns in Figure 4 are basically unchanged if we consider racial shares for SAT math scores below 600 in panel (a) and above 700 in panel (b).

[48] Appendix Figure A5 displays the same numbers for the SAT verbal and writing scores, with very similar results.

virtually no change for Hispanic applicants for the Class of 2014 with SAT math scores below 550. This is consistent with African Americans having had a lower cutoff than Hispanics prior to this class and having the same cutoff thereafter. Hence, the patterns we showed in the previous section (e.g. Table 4) for African Americans for the Classes of 2014–2019 are likely *underestimates* of the share of noncompetitive applications in the years immediately prior to this period.

The abrupt rise in applications from low-scoring African Americans starting with the Class of 2008 is unlikely to have occurred by chance. However, there is no available documentation regarding Harvard's test score search criteria during this time period. We know that, since the Class of 2014, Harvard has sent recruiting letters to underrepresented minorities who obtain at least an SAT-equivalent score of 1100 on the PSAT.[49] Figure 3(a) shows that there was a steep drop in African American applications from the sub-550 group for the Class of 2014. This drop is also visible in the distribution of verbal and writing scores (see Appendix Figure A4).[50] While our SAT groupings are rough proxies for the actual test score cutoffs, it stands to reason that a drop that is highly correlated across test sections may be taken as evidence that Harvard changed its recruitment parameters starting with the Class of 2014. And the sharp drop in the number of African American applicants in the sub-550 group also indicates that potential applicants are responsive to Harvard's recruiting efforts.[51] The continually high number of sub-550 scoring applicants (even after 2012) could be due to Harvard's other recruiting tools identifying these students, such as school visits as part of the UMRP.

[49] See Trial Exhibit P050 for documentation on test score search parameters for the Classes of 2014–2017.

[50] This drop is not present for Hispanic applicants, consistent with Harvard having lower test score cutoffs for African Americans prior to the Class of 2014.

[51] This is consistent with Smith, Hurwitz, and Howell (2015) and Pallais (2015), who find that prospective college students are highly sensitive to even small changes in psychic or monetary application costs. Liu, Ehrenberg, and Mrdjenovic (2007) and Knight and Schiff (2019) find that the Common Application increases schools' diversity because of reduced costs of applying to an additional school. Gurantz, Hurwitz, and Smith (2017) show that high-achieving Hispanic students are also responsive to colleges' recruiting efforts.

5 Potential Mechanisms

While it is clear that a large fraction of African American applicants are not competitive for admission to Harvard based on test scores alone and that this has been the case for some time, it is less clear why this is occurring. One possible driver is the Harvard Financial Aid Initiative (HFAI). Test scores are positively correlated with income, so HFAI may have contributed to more lower-income students applying who in turn had lower test scores.[52] Since African Americans tend to come from less-advantaged households, the rise in (relatively) low-test-score applications could be especially strong for this group. But the dramatic increase in the share of sub-550 SAT math applicants that were African American, accompanied by little change in the share of applicants with SAT math scores above 740 who were African American, suggests this is unlikely to be the sole contributor.[53]

However, HFAI could have worked in conjunction with racial differences in Harvard's search criteria. Based on the racial variation in the test-score search criteria and other race-conscious recruiting efforts, it is clear that Harvard is interested in a diverse applicant pool. One of the margins on which Harvard can influence the diversity of the applicant pool is through the cutoffs used on the various pre-college tests. Lowering the cutoff for a particular group will increase applications, but those applications will be less competitive. It is possible that Harvard was unaware that the increase in applications from low-test-score African Americans—either from HFAI or through a change in cutoffs—was not translating into a higher share of African American admits.

But the existence of the information in Trial Exhibit P044—which is an attachment to an internal email—suggests that they are aware of admit rates by test scores. There are a handful of African American admits who have math SAT scores below 550. Thus, the large

[52] Avery et al. (2006) show that Harvard's policy change had very little effect on the income composition of the Class of 2009. They estimate that it increased the number of low-income students by approximately 20, in a Class of more than 1,600. Avery et al. (2006) also document modest increases in low-income applications for the Class of 2009. Because their analysis is limited to the Class of 2009 and does not report applications, admits, and matriculants by race and SAT scores, it is difficult to understand the broader impact of HFAI on Harvard admissions. Galat (2013) analyzes HFAI by comparing neighborhood characteristics of Harvard matriculants before and after the policy. He finds that there was a statistically significant uptick in the number of low-income students in the Class of 2009, but that this initial change disappeared in the years following.

[53] We also show in Appendix Figure A3 that yield rates for underrepresented minority groups did not appreciably change with the advent of HFAI.

number of low-test-score African American applicants who are rejected could be viewed as worth the cost since a few will be admitted. As we have shown, however, those with low academic credentials are not admitted (with the exception of two applicants out of six years) unless they are ALDC.

In addition to valuing a diverse applicant pool, there is abundant evidence that Harvard pays close attention to balancing along demographic lines. As an example, Trial Exhibit P050 illustrates that Harvard pays particular attention to gender balancing. Page 5 shows what appear to be PSAT search criteria for the Classes of 2014 and 2015, as well as what those search criteria would mean for the Class of 2016. The document shows that 12,022 women and 17,669 men had scores 1380 or higher. An additional 3,749 women received scores between 1360 and 1370, labeled as "Female High Scorers."

What is interesting is that the handwritten notes add the number of women in the two groups together, which gives 15,771 women.[54] There is also a note next to male high scorers showing what appears to be the number of men who would qualify for a letter if the cutoff were 1400 instead of 1380, showing that the number would fall to 15,514. Page 4 of the document shows the search criteria actually implemented, which was to leave the cutoff the same for men and to lower the cutoff for women to 1350. Using this cutoff raises the number of high-scoring females to 17,728 which is remarkably close to the 17,669 men who were classified as high scorers. Thus, even though none of the details regarding Harvard's recruitment and admissions was public until it was revealed in the *SFFA v. Harvard* lawsuit, Harvard appears to manipulate its search criteria to achieve particular diversity goals.

Changes in US law surrounding racial preferences in college admissions may also have been a driver for the increased interest in African American applications. The two Supreme Court cases, *Grutter v. Bollinger* and *Gratz v. Bollinger*, were decided in June 2003, right before the start of the Class of 2008 application cycle. Furthermore, because Harvard's recruitment is primarily based on the PSAT (which is taken by high school sophomores and juniors), any adjustment to the criteria will have at least a one-year lag in applications.

Since the Class of 2008, the admissions rates for different racial/ethnic groups have converged substantially. This is shown in Panel (a) of Figure 5, which plots the admissions

[54]The handwritten notes mistakenly add the numbers to be 15,761.

rates for the four major racial/ethnic groups and overall. Over the Classes of 2000–2008, African Americans were at least 70 percent more likely to be admitted than Asian Americans in each of the years. But after 2008, the differences in admit rates between African Americans and Asian Americans shrunk dramatically, with the two groups having virtually identical admission rates in 2012.[55]

This graph would give the false appearance that race was a limited factor in the admissions process in the more recent years and less important than it was in the past.[56] Indeed, one of Harvard's arguments in *SFFA v. Harvard* was that racial preferences were small because many African American applicants were unaffected by racial preferences (Document 419-141, pp. 83–84). That document also showed that over 50% of African Americans had characteristics (aside from race) that guaranteed rejection (Ibid., Exhibit 28).

But the reality is that admission rates across races differ substantially by test scores. And for top test scores, there has been little change in the racial differences in admit rates. Panel (b) of Figure 5 shows admit rates conditional on having an SAT math score above a 740. While admit rates have fallen for all races over time as Harvard has become more competitive, the heterogeneity across races is substantial across all years, with little evidence of convergence. Conditional on scoring above a 740, African Americans were 4.46 times more likely to be admitted than Asian Americans in 2009 and 4.65 times as likely in 2016.

6 Conclusion

Recruiting applicants is a common practice among colleges and universities. For less well-known schools, it is an opportunity to inform potential applicants in the hopes of filling an incoming class. For nationally recognized universities, recruiting is a way to enhance prestige through reduced acceptance rates and superior credentials among matriculants. It

[55] Appendix Figure A9(a) shows the ratio of admit rates for each race relative to the overall admit rate, going back to the Class of 1980.

[56] This line of thought is reflected in the recent ruling in the *SFFA v. Harvard* case. The judge writes, "SFFA is not claiming that Harvard excludes Asian Americans and in fact, Asian Americans are admitted at virtually the same rate as white applicants." Later the judge writes, "Asian American applicants are accepted at the same rate as other applicants and now make up more than 20% of Harvard's admitted classes, up from 3.4% in 1980." The fact that applicants of different races are admitted at the same rate generates an implicit reference point that racial preferences must be small (see Document 672).

also provides a way to increase the diversity of the applicant pool along racial, gender, socioeconomic, and geographic lines.

In this paper, we illustrate that Harvard recruits African American, Hispanic, and Native American applicants differently than white or Asian American applicants. For the Classes of 2014–2018, Harvard sent recruiting letters to potential minority applicants at significantly lower test score thresholds than these other groups. Consistent with this recruiting tactic, we find that African Americans were particularly affected, with almost 38% of applicants having essentially no chance of admission based on their test scores and grades alone. Using historical admissions data for Harvard, we provide evidence that this was not always the case, and that beginning in the class 2009, Harvard dramatically expanded its recruitment of low-scoring African American applicants.

One rationale for this behavior is that Harvard is interested in boosting diversity among enrollees, but is unaware of the fact that low-scoring recruited applicants have essentially no possibility of admission. In fact, the Harvard Dean of Admissions explicitly stated that Harvard would not "want to send so many recruitment letters out across the board so that we would ... end up with lots of people who might not be strong enough to get through the admissions process."[57] However, it is difficult to claim ignorance of the low admissions chances of some recruits since Harvard's internal documents make clear that applicants with low SAT scores are essentially guaranteed rejection.

If the goal of recruiting African Americans is not simply to increase the diversity of matriculants, but also to achieve racial balance in the admit pool and/or racial balance in admit rates, then the policy could be deemed a success. As an example, admit rates for African American applicants were twice as large as admit rates for Asian American applicants in 2000, but by 2017 were approximately the same. Why Harvard might care about the racial distribution of admit rates and applicants is not obvious. What is clear is that each year there are a significant number of African American high school students who have a potentially false impression about their chances of being admitted to Harvard.

An additional cost of recruiting students who have little to no chance of admission is that it reduces the credibility of information from colleges in a market that is already information-

[57] See Document 421-9, pp. 333–334.

starved among low-income students. With a great deal of recent research devoted to resolving information frictions and credit constraints on the supply side of the college market, our results highlight the critical value of credible information to prospective students.[58]

It is difficult to assess whether the patterns in African American recruiting at Harvard are replicated at other elite colleges and universities.[59] The Integrated Postsecondary Education Data System (IPEDS) provides information on total applications, admissions, and enrollment for all institutions that participate in federal student aid programs, but does not disaggregate the data by race or SAT score. A simple change in the data collection practices would generate a clearer picture of the role race plays in the admissions process at American colleges and universities, as well as help high school students make more informed decisions about where to apply to college.

[58] See Bettinger et al. (2012); Hoxby and Avery (2013); Carrell and Sacerdote (2017); Dynarski et al. (2018); Gurantz et al. (2019a); and Gurantz et al. (2019b).

[59] In an article in *The Daily Princetonian*, Chen (2017) discusses the disparity in school visits from Ivy League universities to public high schools in San Bernardino County, CA compared with Harvard-Westlake School (an elite private high school in Beverly Hills). This dimension of recruiting behavior appears to be quite similar across the Ivies.

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Figures and Tables

Table 1: SAT-equivalent PSAT Score and GPA Cutoffs by Race for Harvard's Student Search List

Sex	Race/Ethnicity	Location of Residence	SAT-equivalent Score Cutoff	GPA Cutoff	National SAT-equivalent Percentile	Group-Specific SAT-equivalent Percentile	Average SAT of Harvard Admits
Men	White, Other, Unknown	All US	1380	A−	93	91	1492
Women	White, Other, Unknown	All US	1350	A−	91	88	1492
—	White, Other, Unknown	"Sparse Country"	1310	A−	88	84	1492
Men	Asian American	All US	1380	A−	93	78	1536
Women	Asian American	All US	1350	A−	91	73	1536
—	African American	All US	1100	B+	58	83	1434
—	Hispanic	All US	1100	B+	58	75	1454
—	Native American	All US	1100	B+	58	75	1450

Notes: This table lists the SAT-equivalent PSAT test score and GPA cutoffs that Harvard used for recruitment of its Class of 2018 (which recruitment took place in Fall 2013).

"Sparse Country" corresponds to the following US states: Alabama, Alaska, Arizona, Arkansas, Idaho, Louisiana, Maine, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Oklahoma, South Dakota, Utah, Vermont, West Virginia, and Wyoming.

We used the Class of 2017 to compute the average SAT score of admits by race, and multiplied by two to get consistent units.

Sources: Columns 1–5 are adapted from Trial Exhibit P002. Columns 6 and 7 are adapted from College Board (2018), and the last column comes from p. 16 of Trial Exhibit DX 042.

Table 2: Correspondence of Academic Index Deciles with Admit Rates

Decile	Minimum Value	Maximum Value	Non-ALDC Admit Rate	LDC Admit Rate
1	100.0	193.5	0.01	5.12
2	193.8	205.5	0.53	10.59
3	205.8	213.0	1.65	15.70
4	213.3	218.5	3.29	23.73
5	218.8	223.0	4.40	28.45
6	223.3	226.5	5.64	33.62
7	226.8	229.5	6.61	38.54
8	229.8	232.5	8.22	47.65
9	232.8	235.8	10.40	56.76
10	236.0	240.0	14.58	60.80

Notes: "ALDC" refers to applicants who are recruited athletes, legacies, on the dean's interest list, or children of faculty or staff. "LDC" refers to those who are in at least one of the latter three categories. For more on ALDC applicants, see Arcidiacono, Kinsler, and Ransom (2019b).

Sources: Columns 1–3 come from Trial Exhibit P617. Columns 4–5 are the authors' calculations from Tables 5.1R, 5.2R, B.5.1R, and B.5.2R of Document 415-9.

Table 3: Shares and Admission Rates of non-ALDC Applicants by Academic Index Decile and Race

	White		African American		Hispanic		Asian American		Total	
	Share	Admit Rate	Share	Admit Rate	Share	Admit Rate	Share	Admit Rate	Share	Admit Rate
1	4.91	0.00	37.95	0.03	19.98	0.00	3.75	0.00	10.25	0.01
2	7.67	0.39	23.08	1.03	20.94	0.32	5.07	0.20	10.30	0.53
3	10.57	0.56	14.68	5.19	16.32	1.95	6.56	0.64	10.55	1.65
4	11.07	1.82	8.24	12.76	12.17	5.50	7.49	0.86	9.74	3.29
5	13.33	2.57	5.75	22.41	9.59	9.13	9.61	1.86	10.84	4.40
6	10.31	4.20	3.26	29.72	6.01	13.65	8.97	2.49	8.51	5.64
7	12.28	4.79	2.85	41.12	5.29	17.28	11.23	3.98	9.94	6.61
8	11.28	7.53	2.09	44.48	4.57	22.93	13.19	5.12	10.01	8.22
9	9.95	10.77	1.26	54.59	3.01	26.16	16.21	7.55	10.05	10.40
10	8.64	15.27	0.85	56.06	2.12	31.32	17.92	12.69	9.83	14.58
Total	57,451		15,601		17,930		40,308		142,356	

Source: Authors' calculations from data presented in Tables 5.1R, 5.2R, B.5.1R and B.5.2R of Document 415-9. Share columns sum to 100 within each group. See Appendix B.2.6 of Arcidiacono, Kinsler, and Ransom (2019b) for a complete discussion of the calculations. Data restricted to non-ALDC applicants from the Classes of 2014–2019.

Table 4: Share of Rejects Within Academic Index Deciles

Decile	White	African American	Hispanic	Asian American
1	20.40	42.78	25.90	10.92
2	31.94	25.94	27.25	14.86
3	44.06	15.85	20.93	19.17
4	50.27	9.03	16.60	24.11
5	55.18	5.15	11.55	28.12
6	54.12	3.40	8.87	33.61
7	55.45	2.16	6.48	35.90
8	50.56	1.53	5.33	42.58
9	43.87	0.77	3.42	51.94
10	38.82	0.54	2.41	58.23
Total	44.02	11.62	13.56	30.81

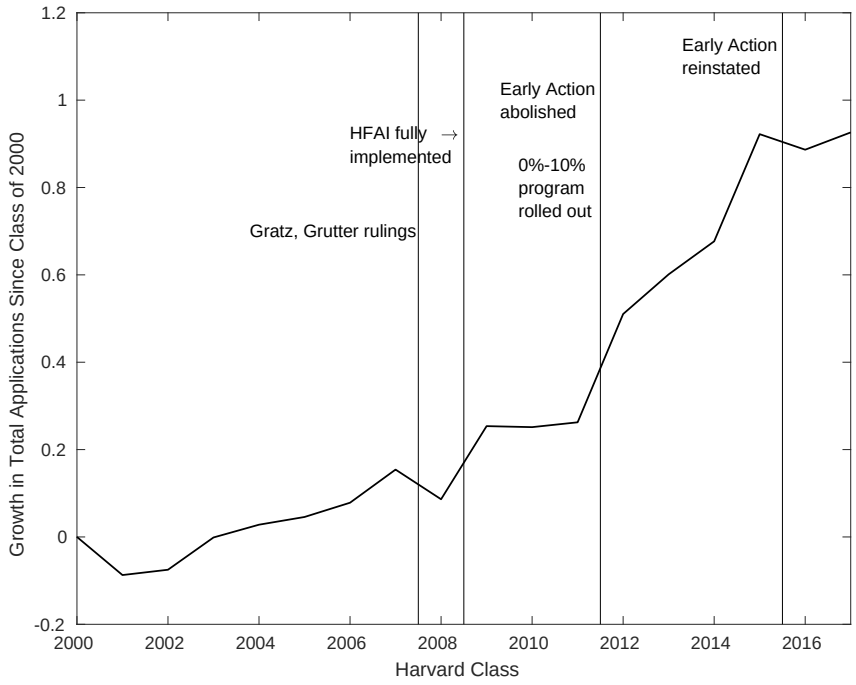
Source: Authors' calculations from data presented in Tables 5.1R and 5.2R of Document 415-9. Rows sum to 100. Data restricted to non-ALDC applicants from the Classes of 2014–2019.

Table 5: Share Receiving a 2 or Higher on Harvard Ratings by Academic Index Decile

Decile	White	African American	Hispanic	Asian American
Panel A: Academic Rating				
1	0.11	0.02	0.03	0.00
2	0.41	0.08	0.05	0.54
3	1.91	0.96	0.68	1.36
4	9.14	6.07	4.45	7.98
5	26.26	23.08	17.04	26.36
6	50.19	48.43	43.83	51.08
7	68.37	68.54	64.28	71.46
8	82.73	80.37	79.63	86.16
9	93.30	93.37	91.47	95.12
10	97.16	94.70	95.26	98.08
Average	45.32	9.18	16.75	60.21
Panel B: Extracurricular Rating				
1	11.41	9.02	9.27	12.97
2	16.35	13.75	12.73	15.99
3	20.14	18.86	15.86	18.57
4	22.02	23.27	18.74	21.59
5	23.83	22.85	20.65	23.67
6	25.08	26.38	23.31	25.51
7	26.64	27.42	27.61	28.34
8	27.31	27.91	24.63	29.78
9	30.45	32.65	28.94	34.92
10	33.04	38.64	29.21	37.98
Average	24.38	15.56	16.84	28.27
Panel C: Personal Rating				
1	8.11	9.49	8.48	8.01
2	12.58	15.75	13.16	12.91
3	16.25	23.35	17.77	13.46
4	18.62	28.95	20.39	14.24
5	20.40	33.89	25.60	15.69
6	22.72	35.04	28.41	16.46
7	22.59	40.00	30.03	18.11
8	26.10	39.57	32.20	17.93
9	28.23	40.31	30.24	20.87
10	29.62	46.97	34.21	22.20
Average	21.29	19.01	18.69	17.65
Panel D: Teacher 1 Rating				
1	7.76	7.75	8.85	7.41
2	13.42	13.97	13.87	14.18
3	19.00	19.38	20.03	16.98
4	23.87	25.06	23.60	21.03
5	26.39	29.65	30.19	23.00
6	32.41	36.42	31.94	26.59
7	34.64	40.22	35.62	30.22
8	39.72	46.63	37.68	33.09
9	44.92	47.45	43.60	39.73
10	50.17	55.30	49.47	46.64
Average	30.46	17.15	21.60	30.84

Source: Authors' calculations from data presented in Tables 5.4R, 5.5R, and 5.6R of Document 415-9. Data restricted to non-ALDC applicants from the Classes of 2014–2019.

Figure 1: Growth in Total Applications and Admissions Office & Financial Aid Policy Changes, Harvard Classes of 2000–2018



Notes: Growth in year t is equal to the number of applications in year t minus the number of applications in 2000, all divided by the number of applications in 2000.

"Gratz, Grutter rulings" refers to the timing of the decisions of the United States Supreme Court cases *Gratz v. Bollinger* and *Grutter v. Bollinger*, both of which were decided on June 23, 2003. The Class of 2008 application cycle began about five months later.

HFAI stands for Harvard Financial Aid Initiative, which was announced after the conclusion of the Class of 2008 application deadline but before Class of 2008 matriculation decisions were made. HFAI was fully implemented for the Class of 2009 cycle (The Harvard Gazette, 2005). The HFAI "requires no parental contribution from families earning $40,000 or less and a greatly reduced contribution from those who earn from $40,000 to $60,000" (ibid.).

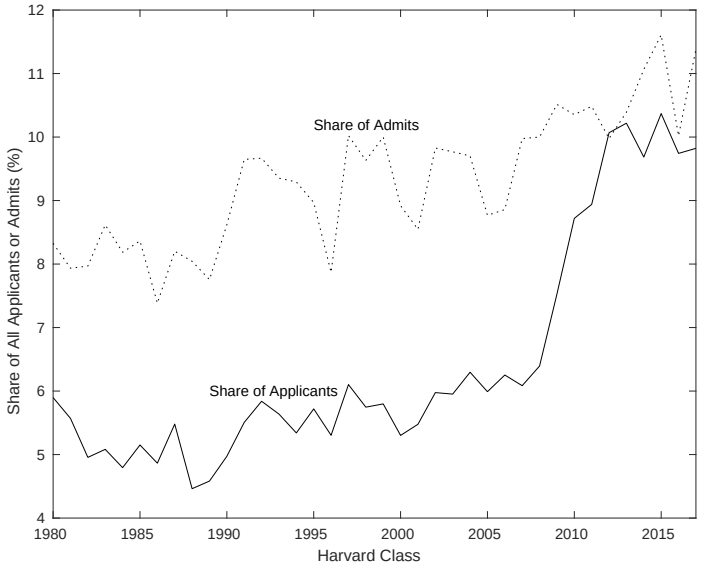
The 0%–10% program was announced just before the application deadline for the Class of 2012 cycle (The Harvard Gazette, 2007). The program increased financial aid for families with incomes below $180,000. For families with incomes of between $60,000 and $120,000, families would be required to pay between 0% and 10% of their income (steadily increasing with income). Families between $120,000 and $180,000 would be required to pay 10% of their income. The policy also loosened requirements on assets and loans in determining financial aid eligibility.

Early action was removed prior of the Class of 2012 admissions cycle (Finder and Arenson, 2006), and reinstated at the end of the Class of 2015 cycle (Lewin, 2011).

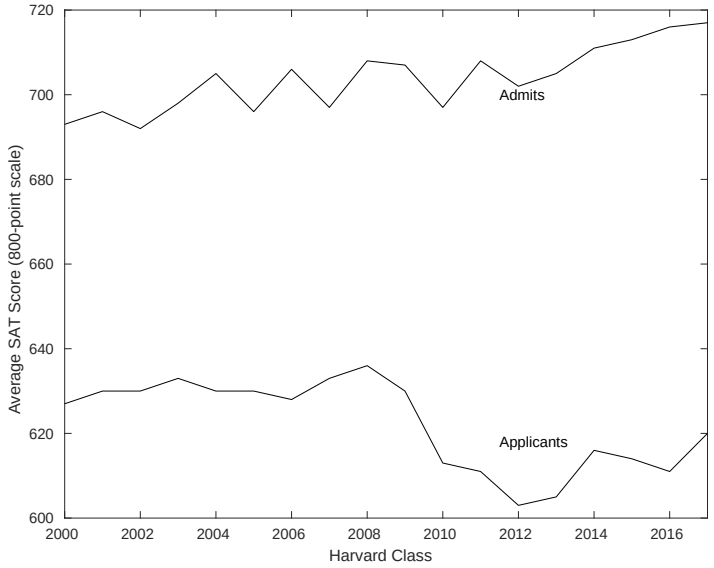
Source: Authors' calculations from *SFFA v. Harvard* Trial Exhibit DX 030 and Trial Exhibit DX 042.

Figure 2: African-American Share of Applicants and Admits and Average SAT Score (800-point scale)

(a) Share of Applicants and Admits, Classes of 1980–2017



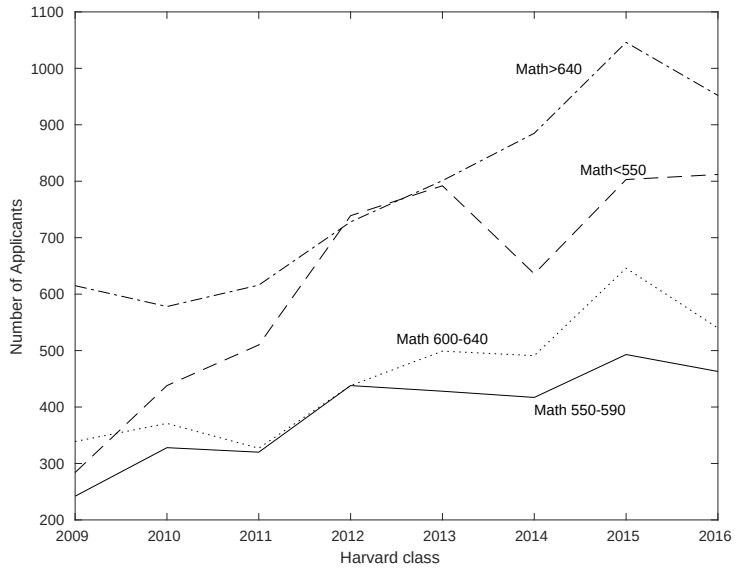
(b) SAT Scores of Applicants and Admits, Classes of 2000–2017



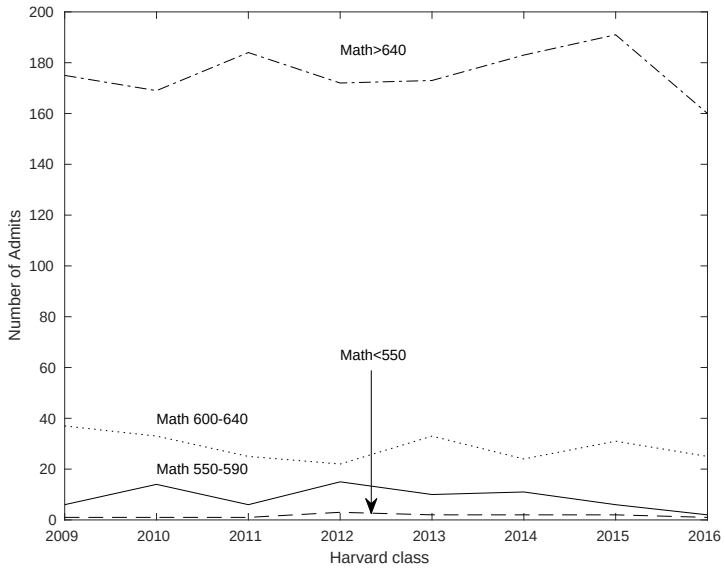
Source: Authors' calculations from Trial Exhibit DX 030 and Trial Exhibit DX 042.

Figure 3: African American Applications and Admits by SAT Math Score, Classes of 2009–2016

(a) Number of Applicants



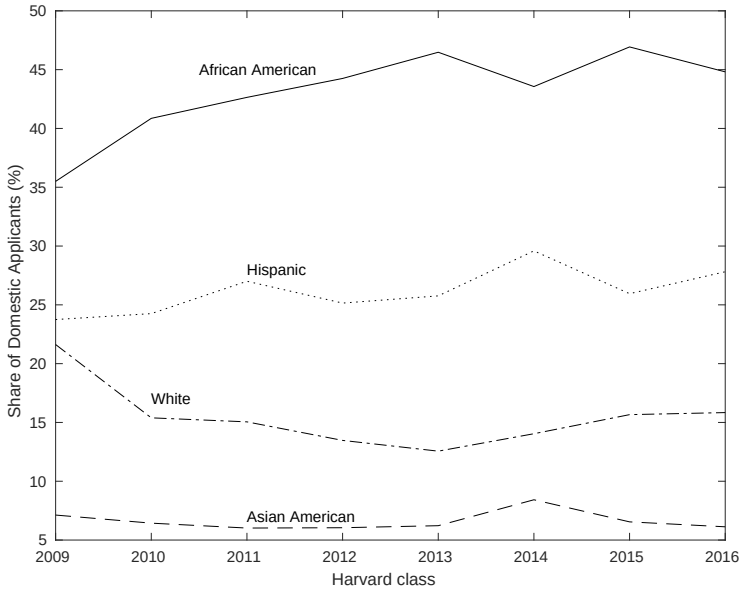
(b) Number of Admits



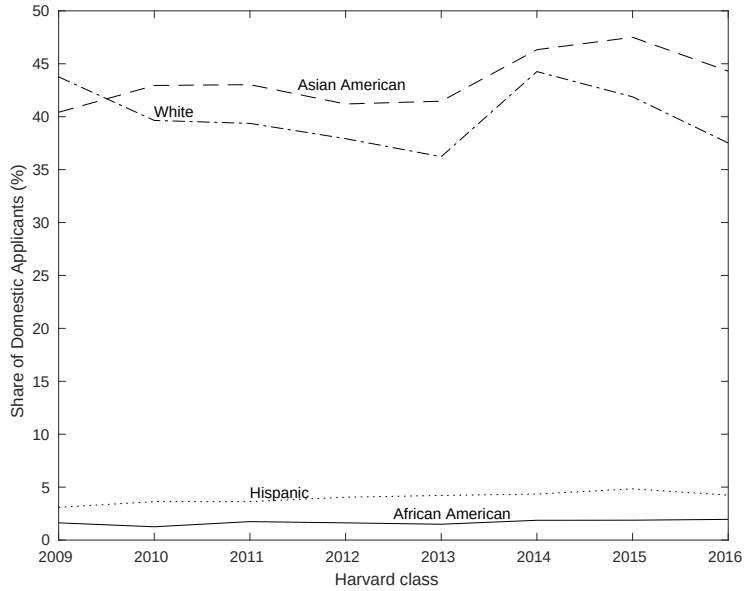
Source: Authors' calculations from Trial Exhibit P044.

Figure 4: Racial Share of Applicants by SAT Math Range, Classes of 2009–2016

(a) SAT Math < 550



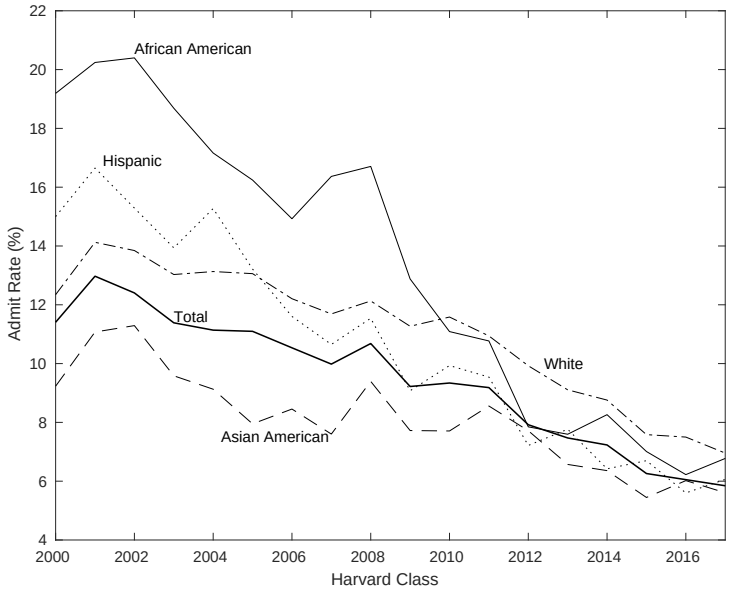
(b) SAT Math > 740



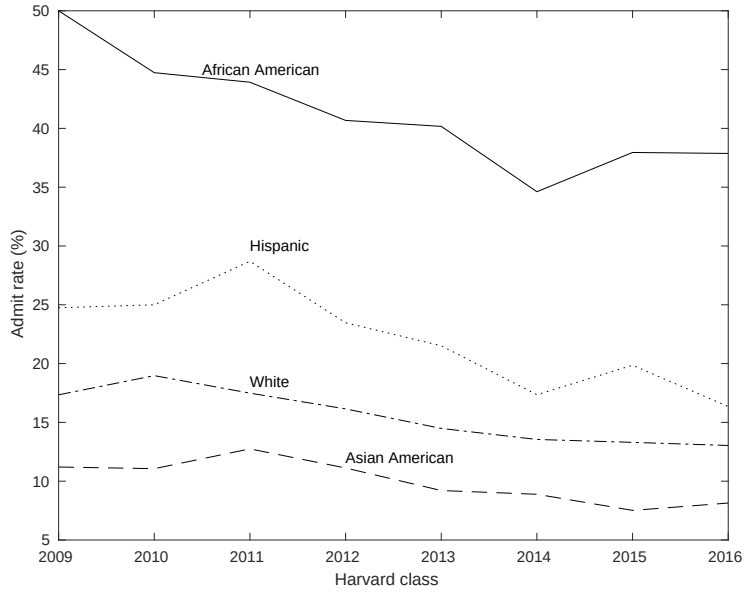
Source: Authors' calculations from Trial Exhibit P044.

Figure 5: Admit Rates by Race

(a) Unconditional, Classes of 2000–2017



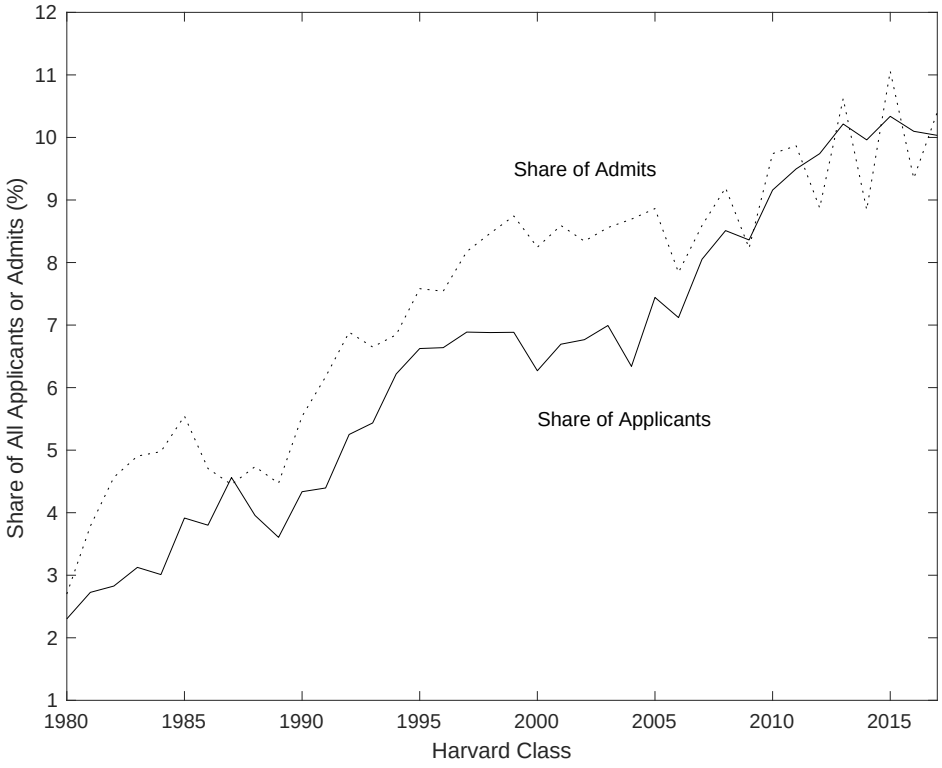
(b) SAT Math > 740, Classes of 2009–2016



Source: Authors' calculations from Trial Exhibit DX 042 and Trial Exhibit P044.

A Supporting Figures

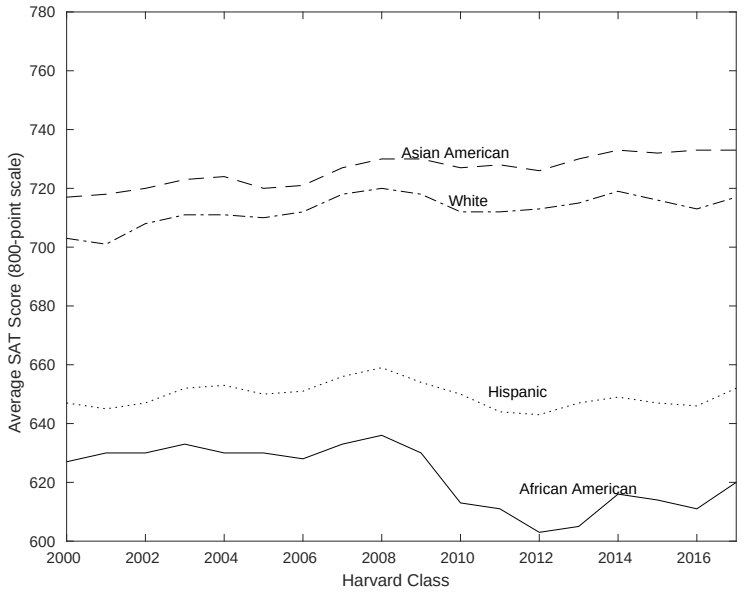
Figure A1: Hispanic Share of Applicants and Admits



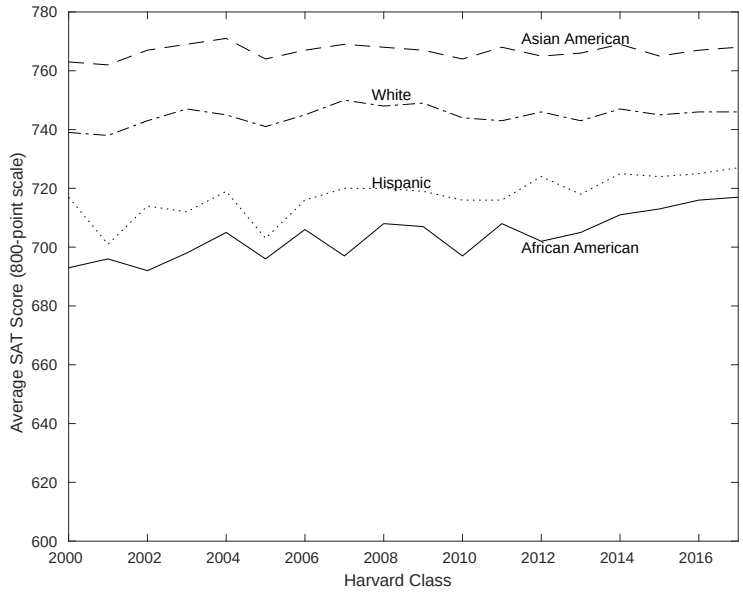
Source: Authors' calculations from Trial Exhibit DX 030 and Trial Exhibit DX 042.

Figure A2: SAT Scores of Applicants and Admits for each Racial/Ethnic Group

(a) Applicants

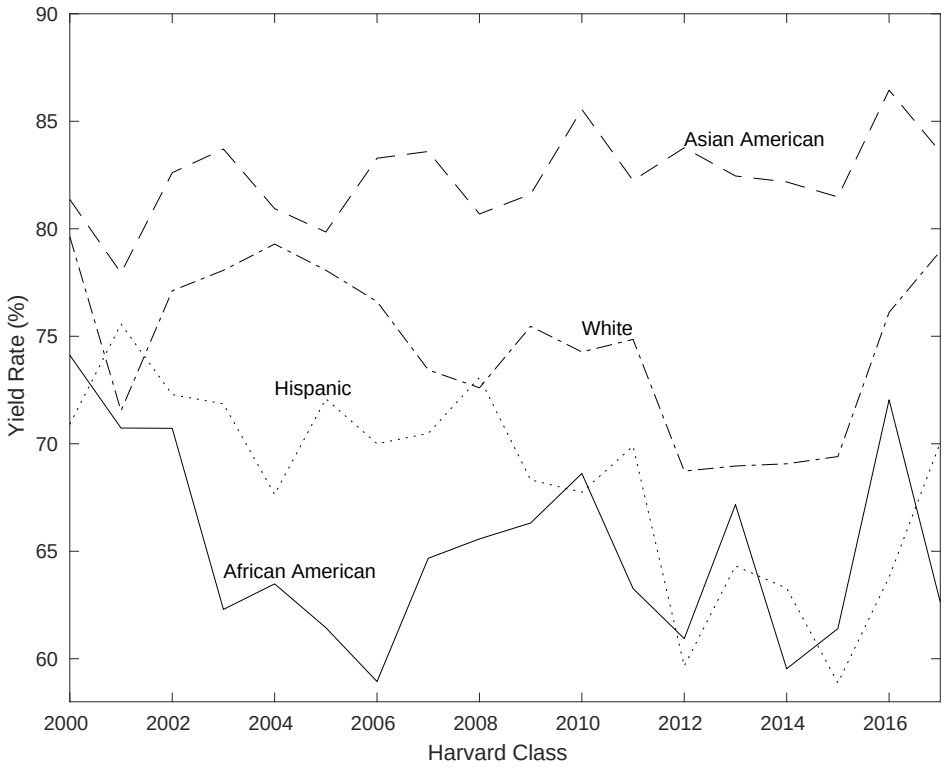


(b) Admits



Source: Authors' calculations from Trial Exhibit DX 042.

Figure A3: Yield Rates by Race

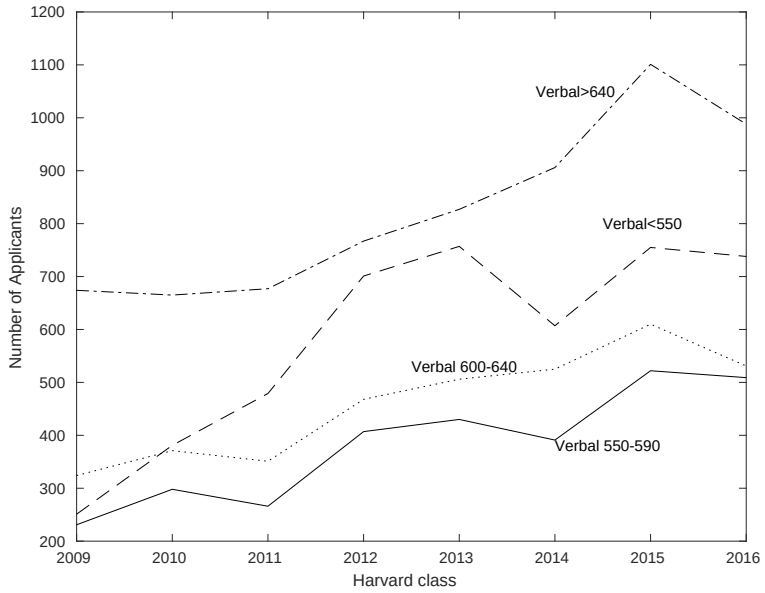


Note: Excludes legacies and recruited athletes.

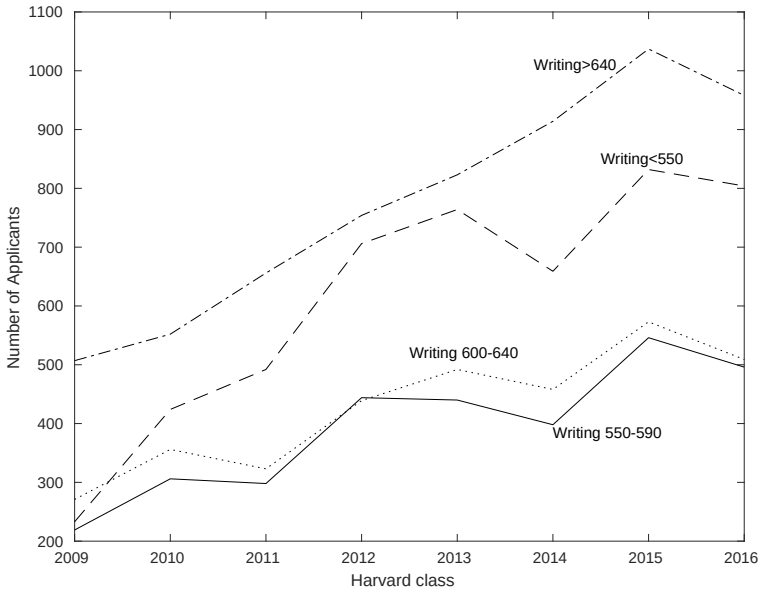
Source: Authors' calculations from Trial Exhibit DX 042.

Figure A4: African American Applications by SAT Verbal and Writing Score, Classes of 2009–2016

(a) Verbal



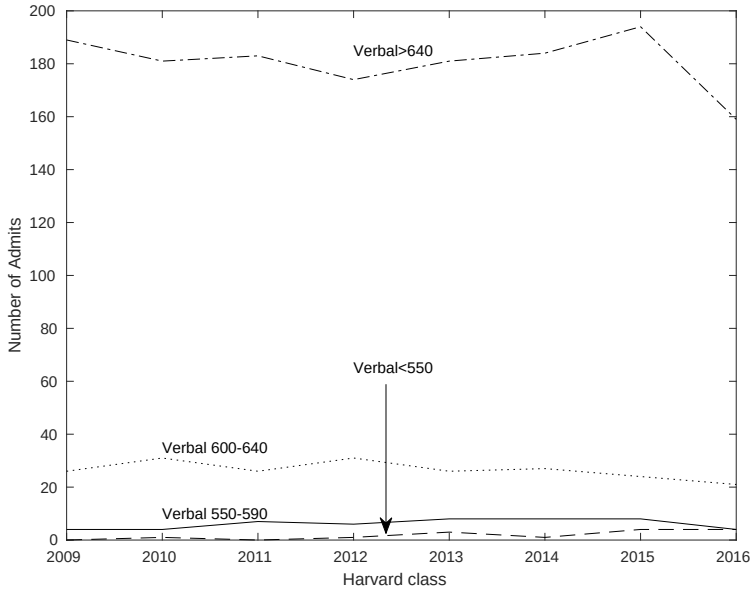
(b) Writing



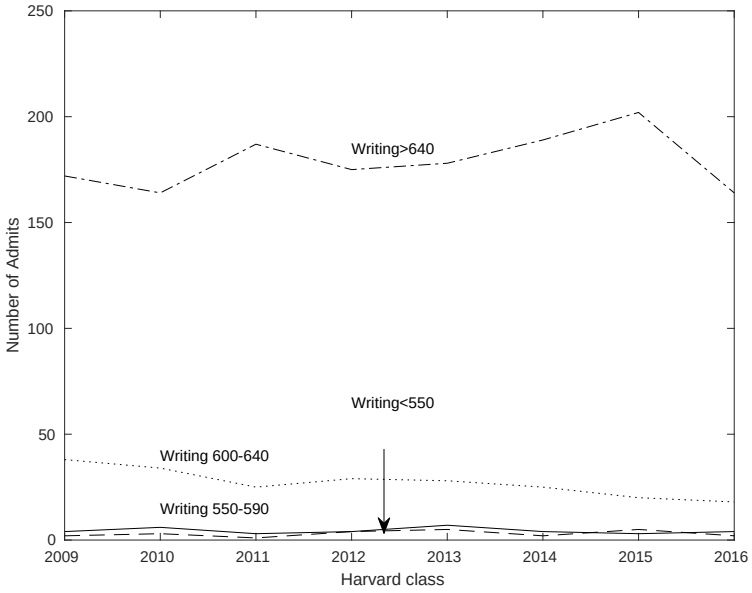
Source: Authors' calculations from Trial Exhibit P044.

Figure A5: African American Admits by SAT Verbal and Writing Score, Classes of 2009–2016

(a) Verbal



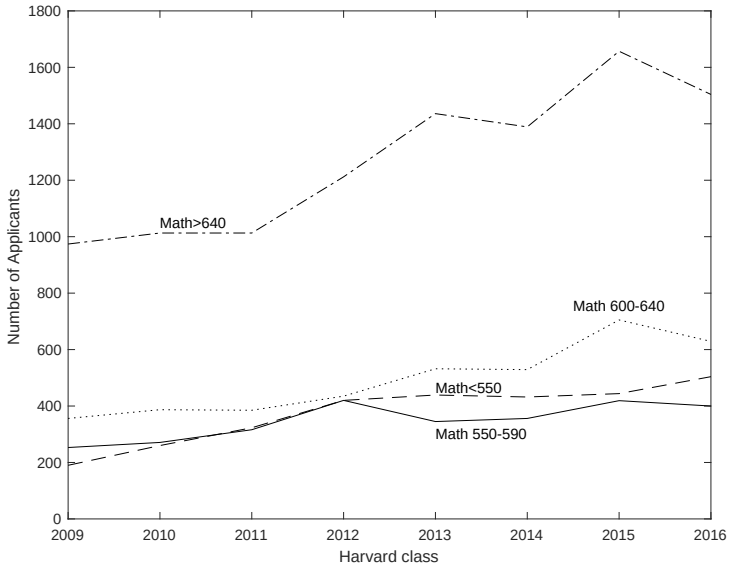
(b) Writing



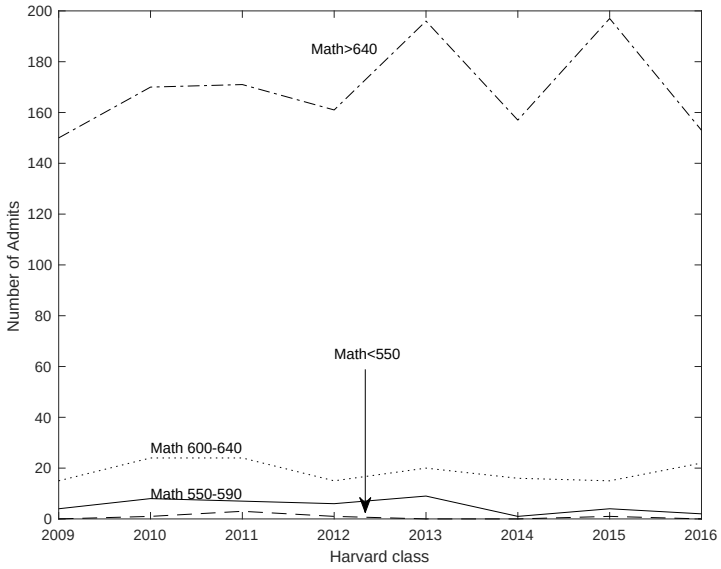
Source: Authors' calculations from Trial Exhibit P044.

Figure A6: Hispanic Applications and Admits by SAT Math Score, Classes of 2009–2016

(a) Number of Applicants



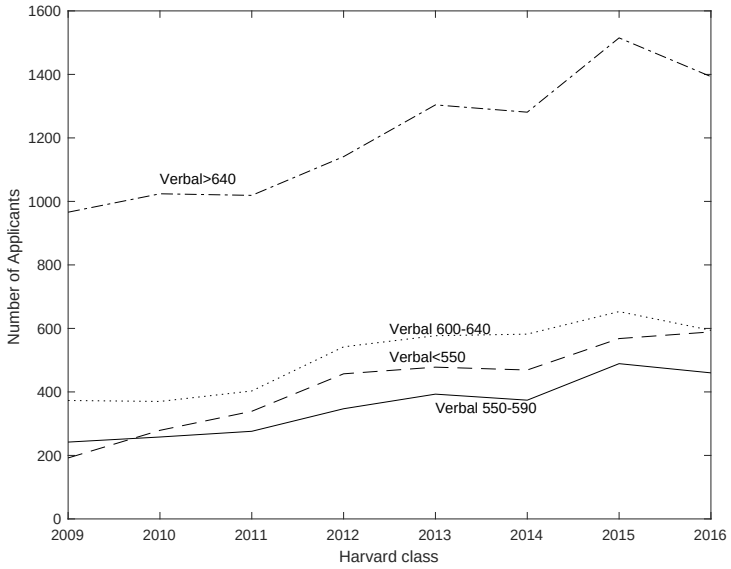
(b) Number of Admits



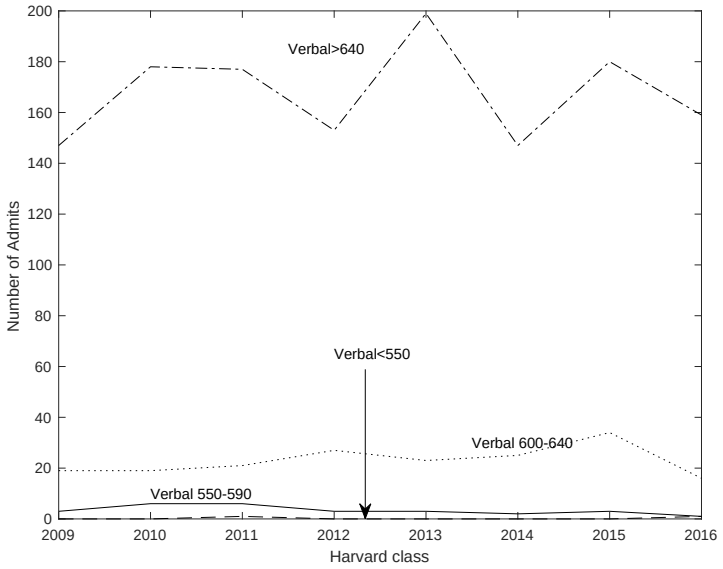
Source: Authors' calculations from Trial Exhibit P044.

Figure A7: Hispanic Applications and Admits by SAT Verbal Score, Classes of 2009–2016

(a) Number of Applicants



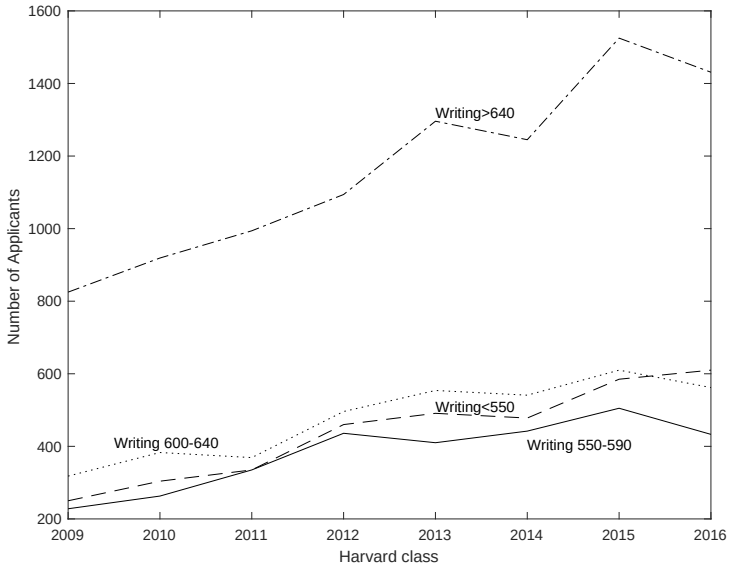
(b) Number of Admits



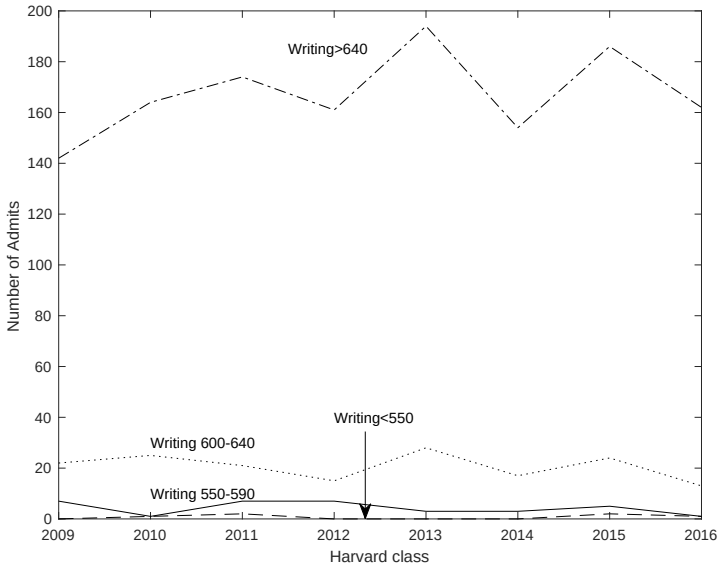
Source: Authors' calculations from Trial Exhibit P044.

Figure A8: Hispanic Applications and Admits by SAT Writing Score, Classes of 2009–2016

(a) Number of Applicants



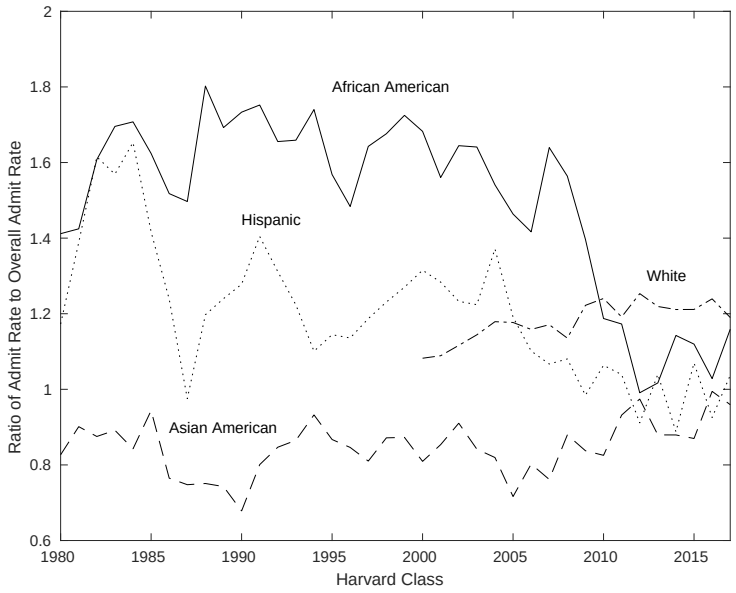
(b) Number of Admits



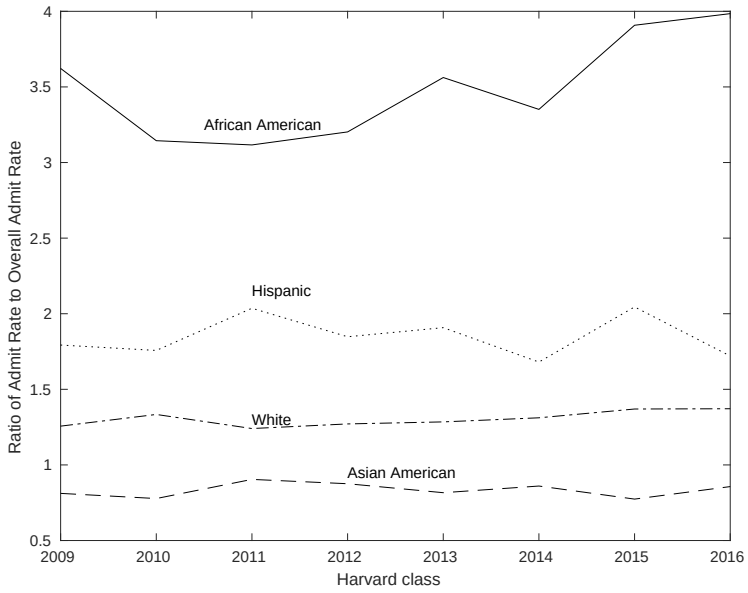
Source: Authors' calculations from Trial Exhibit P044.

Figure A9: Admit Rate Ratios by Race

(a) Unconditional, Classes of 1980–2017



(b) SAT Math > 740, Classes of 2009–2016



Note: Unconditional admit rate of whites is not available prior to the Class of 2000.

Source: Authors' calculations from Trial Exhibit DX 030, Trial Exhibit DX 031, Trial Exhibit DX 033, Trial Exhibit DX 042, and Trial Exhibit P044.

B Description of Legal Documents Used

We list in Appendix Table B1 all publicly released documents pertaining to the *SFFA v. Harvard* trial that we use in our analysis.

Table B1: List of Legal Documents Used

Document	Description
Document 415-8	Plaintiff's expert witness opening report
Document 419-141	Defendant's expert witness opening report
Document 415-9	Plaintiff's expert witness rebuttal report
Document 419-1	Deposition of Harvard Admissions Director Marlyn McGrath
Document 421-9	Deposition of Harvard Admissions Dean William Fitzsimmons
Document 672	Judge Allison D. Burroughs' Findings of Fact and Conclusion of Law
Day 1 Trial Transcript	Transcript of Day 1 of trial proceedings
Day 3 Trial Transcript	Transcript of Day 3 of trial proceedings
Trial Exhibit DX 005	2013–2014 Harvard alumni interviewer handbook
Trial Exhibit DX 030	African American Applications, Admissions and Matriculations, Classes of 1980–2018
Trial Exhibit DX 031	Hispanic Applications, Admissions and Matriculations, Classes of 1980–2018
Trial Exhibit DX 033	Asian American Applications, Admissions and Matriculations, Classes of 1980–2018
Trial Exhibit DX 042	Demographic Breakdown of Applicants, Admits, and Matriculants, Classes of 2000–2017
Trial Exhibit DX 730	Academic qualifications and profile ratings of transfer applicants
Trial Exhibit P002	Summary of Recruitment Behavior for Classes of 2017–2018
Trial Exhibit P044	SAT Distributions by Race and Applicant/Admit Status, Classes of 2009–2014
Trial Exhibit P050	Summary of Recruitment Behavior for Classes of 2014–2016
Trial Exhibit P055	Recruiting Engagement Report for Class of 2018
Trial Exhibit P057	Summary of Recruitment Behavior for Class of 2019
Trial Exhibit P316	Report of Harvard's Committee to Study Race-Neutral Alternatives
Trial Exhibit P617	Academic index values by academic index decile
Trial Exhibit P618	Admit rates for ALDCs and non-ALDCs by academic rating
Trial Exhibit P621	Ratings frequencies for baseline sample