

# 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, in part the result of expanded applicant recruiting. However, broadening the applicant pool while also maintaining diversity may require encouraging applications from individuals who have little to no chance of admission. We shed new light on this behavior using detailed data on Harvard University that was made public 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 28-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](#)). 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, 2022](#)), 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 standardized test score reports), and the time of the admissions officers reading files.

High application rates result in part from colleges actively recruiting applicants. Students who take exams such as the PSAT are often flooded with brochures from various colleges ([Rivard, 2013b](#); [Strauss, 2017](#)). For example, [Smith, Howell, and Hurwitz \(2020\)](#) 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.

There are many reasons why colleges, including the most elite, actively recruit students. First, colleges are interested in finding the most productive matches while maximizing the number of full-paying students ([Rivard, 2013b](#)).<sup>1</sup> Second, recruiting provides a mechanism for schools to attract a diverse applicant pool, which may lead to both better matches and an enhanced learning environment. For example, the College Board allows schools to recruit

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<sup>1</sup>[Salazar, Jaquette, and Han \(2021\)](#) document that public universities’ recruiting efforts tend to focus on out-of-state and higher-income whites.

applicants according to factors such as students’ test scores, high school GPA, intended college major, gender, race, and geography.<sup>2</sup> Finally, successful recruiting implies an increased number of applications and lower admissions rates, which can enhance a school’s prestige (Blair and Smetters, 2018).<sup>3</sup> This last motivation can lead to perverse incentives for a college: recruiting applicants with little to no chance of admission. This phenomenon, dubbed ‘recruit to deny’ by the popular press (Strauss, 2015; Colarusso, 2015), may be especially costly for those with limited access to information about their admissions prospects.

Because universities closely guard their recruiting strategies and admissions decisions, much of what we know about ‘recruit to deny’ and its effect on admissions is based on anecdotal evidence. We shed new light on this practice by examining recruiting strategies and how these strategies affect the applicant pool and eventual admissions outcomes using data from Harvard made public in the recent *SFFA v. Harvard* lawsuit. We show that these recruiting practices especially impact African Americans. As we illustrate in the following sections, the data indicate four facts: (i) Harvard recruits African American students significantly more aggressively than their white and Asian American counterparts; (ii) many African American applicants have essentially no chance of admission; (iii) aggressive recruiting of African American students accelerated dramatically after 2003; and (iv) as a byproduct, admissions rates across racial groups have converged over the past twenty years.

For the Class of 2018, Harvard sent out over 114,000 recruitment letters to admit 2,047 students.<sup>4</sup> In determining which students to recruit, Harvard implemented substantially different test-score cutoffs based on the race or ethnicity of the applicant. For example, to be eligible for a recruitment letter based on the SAT, African American and Hispanic students needed to score an 1170 on a 1600 point scale, a score at roughly the 78th percentile.<sup>5</sup> By way

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<sup>2</sup>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.

<sup>3</sup>Popular college rankings often depend directly on the selectivity of the school. Prior to 2019, one of the factors that influenced U.S. News & World Report’s college rankings was the acceptance rate of the college (Morse, Brooks, and Mason, 2018). 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).

<sup>4</sup>Class refers to when they would graduate from Harvard if they did so in four years.

<sup>5</sup>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.

of comparison, the 25th percentile SAT score among Harvard matriculants in Fall 2017 was 1460.<sup>6</sup> All told, almost 50% of those qualifying for a recruiting letter were underrepresented minorities.

Casting a wide net for underrepresented groups is important for maintaining a diverse applicant pool. However, this recruiting strategy will only result in a diverse admitted class if the applicants have some hope of being admitted. Using individual-level applicant data for the Classes of 2014–2019, we show that a substantial fraction of African American applicants are effectively ruled out by their test scores and grades. To do this, we examine the link 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. Among typical applicants to Harvard, 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.<sup>7</sup> The admit rate for African Americans in the bottom decile was 0.03%, meaning that essentially none of the 5,921 applicants in this decile were admitted over the six year period.<sup>8</sup>

Although there are a number of potential reasons why we see this striking pattern for African Americans, historical data tell us when these patterns emerge. 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%. For the 28-year period between the classes of 1980 and 2008, the minimum and maximum African American applicant share were 4.5% and 6.4%, respectively. Despite the run up in applicants beginning in 2008, the share of admits who were African American remained unchanged, implying that the sharp increase in applications from African Americans did not diversify the admitted pool. At the same time, the average SAT score of African American applicants fell by 33 points (on an 800-point scale) or roughly one-third of a standard deviation over this four-year period. Additional data indicate that the rise in applications came from those with

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<sup>6</sup>The source for this is the Integrated Postsecondary Education Data System (IPEDS).

<sup>7</sup>Typical applicants are those who do not belong to one of the following groups: recruited athletes, legacies, those on the dean’s interest list, and children of faculty and staff (ALDC). These special applicants receive large admissions preferences and are likely recruited through other channels.

<sup>8</sup>For all other races, no typical applicants in the bottom decile were admitted over these six years.

scores on the SAT subsections below 550; scores for which virtually no Harvard applicant is admitted. For the class of 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.<sup>9</sup>

The sharp rise in the number of low-scoring African American applicants led to a significant decline in the African American admit rate. Between the classes of 2009 and 2016, the African American admit rate fell from 12.9% to 6.2%.<sup>10</sup> This drop also precipitated a convergence in unconditional admit rates across racial groups. For the class of 2009, African American applicants were admitted at a 67% higher rate than Asian Americans, but by 2016 the African American admit rate was just 3% higher than the Asian American admit rate.<sup>11</sup> Yet, the convergence in unconditional admit rates across racial groups masks consistently large admit rate differences conditional on academic preparation. An African American applicant who scored above a 740 on the SAT math was 4.46 times as likely to be admitted as a similar-scoring Asian American applicant for the class of 2009 and was 4.65 times as likely to be admitted for the class of 2016.

While recruiting non-competitive applicants may result in a more diverse applicant pool or lower admission rates for Harvard, the broader market likely suffers. In recent work, [Mulhern \(2021\)](#) shows that personalized admissions information alters application behavior, and that students prefer to apply to schools where they have a reasonable probability of admission. These findings are consistent with both incomplete information about admissions prospects and costly applications.<sup>12</sup> In this environment, if institutions inundate the market with misinformation, parents and students will have a difficult time deciphering sources that are reliable and accurate, ultimately leading to suboptimal application behavior and

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<sup>9</sup>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 was always larger than 2.8.

<sup>10</sup>See [Trial Exhibit DX 030](#).

<sup>11</sup>The admission rate for Asian Americans was 7.7% in 2009 and 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%. See [Trial Exhibit DX 030](#) and [Trial Exhibit DX 033](#).

<sup>12</sup>As further evidence that applications are costly, [Pallais \(2015\)](#) shows that changing the number of free ACT score sends from three to four increased applications and attendance at selective schools for low-income students.

possibly mismatch. Importantly, Harvard’s recruitment behavior is not unique. Other elite colleges and universities have seen enormous growth in applications and declining admissions rates. Additionally, a 2020 Department of Justice investigation of Yale University reveals patterns in admissions that are remarkably similar to Harvard. Namely, African Americans are substantially over-represented in the bottom 10% of the academic index where admission rates are minuscule.

The rest of the paper proceeds as follows. In Section 2, we describe Harvard’s recruitment methods, paying particular attention to the role of race. 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 shows our findings are corroborated using data from other schools and Section 6 concludes.

## 2 Harvard’s Recruiting Strategies

In this section, we provide background on methods Harvard uses to recruit applicants.<sup>13</sup> These consist of the following: purchasing student information from the College Board and ACT to create search lists; financial aid programs; and direct outreach to potential applicants.<sup>14</sup>

### 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.<sup>15</sup> Information consists of each student’s name

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

<sup>14</sup>These strategies and others are also discussed in [Hoxby and Avery \(2013\)](#). Additional strategies therein 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).

<sup>15</sup>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 letters for the Class of 2018 ([Trial Exhibit P002](#)), of which roughly 70% came from the PSAT.<sup>16</sup> While the term “letters” conjures an image of postal mail, 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.<sup>17</sup>

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](#)).<sup>18</sup> 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.<sup>19</sup> 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.<sup>20</sup> 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.<sup>21</sup>

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<sup>16</sup>Approximately one quarter comes from the SAT or ACT, while the remaining roughly 5% comes from AP exams.

<sup>17</sup>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.”

<sup>18</sup>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.

<sup>19</sup>The SAT-equivalent PSAT scores in the table are as computed by Harvard in [Trial Exhibit P002](#). The exact correlation between PSAT and SAT scores is not publicly reported by the College Board, but [Bond et al. \(2018\)](#) document that a regression of SAT score on PSAT score alone has an  $R^2$  of 0.86, suggesting a high amount of correlation between the two tests (see their footnote 8). They conclude that “the PSAT score appears to be the most important predictor of a student’s SAT score for the researcher and perhaps for the student as well.”

<sup>20</sup>See [College Board \(2018\)](#) for exact percentiles used to compute these.

<sup>21</sup>Asian American applicants from “sparse country” do not benefit from the lower cutoff. The following

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 for recruitment 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.<sup>22</sup> 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.<sup>23</sup> For a broader pool of universities, [Smith, Howell, and Hurwitz \(2020\)](#) 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

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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.

<sup>22</sup>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](#)).

<sup>23</sup>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.



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 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.<sup>24</sup>

## 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 a search list purchased from College Board or ACT (*ibid.*, p. 130). Members of the Schools Committee are encouraged to invite these students to attend any public recruiting events that may be held (*ibid.*). Once the application process has started, members of the Schools Committee interview applicants.<sup>25</sup> 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

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<sup>24</sup>See [Trial Exhibit DX 005](#), p. 14

<sup>25</sup>For complete details on Harvard's application process, see [Arcidiacono, Kinsler, and Ransom \(2022\)](#).

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 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 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). For example, UMRP members rate the quality of phone conversations with prospective students and provide a write-up to admissions and financial aid officers. This information is then included in the prospective student’s application ([Trial Exhibit P001](#), p. 16).

### 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.<sup>26</sup>

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 \(2022\)](#). 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

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<sup>26</sup>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](#).

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 grade point average (or class rank).<sup>27</sup> It is used primarily by Ivy League institutions and was designed specifically to regulate athletic recruitment.<sup>28</sup> 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.<sup>29</sup> 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. These values imply that the bottom 20% of applicants according to the academic index would all be deemed

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<sup>27</sup>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 II 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.

<sup>28</sup>See <https://www.toptieradmissions.com/resources/college-calculator/> for additional information.

<sup>29</sup>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 (2022) 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.

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 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.<sup>30</sup> 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

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<sup>30</sup>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.

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.<sup>31</sup> 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 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%.<sup>32</sup>

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.<sup>33</sup> 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.<sup>34</sup> In other words, Harvard is actively sending recruiting materials to prospective students who effectively have no chance of being admitted.<sup>35</sup> Thus, any costs incurred in applying to

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<sup>31</sup>See [Document 419-1](#), pp. 158–160 for more detail on the rating. See [Arcidiacono, Kinsler, and Ransom \(2022\)](#) for an overview of Harvard's non-academic ratings.

<sup>32</sup>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.

<sup>33</sup>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.

<sup>34</sup>Even if this hypothetical applicant had perfect grades (a converted GPA of 80), this would only put her in the second decile of the academic index, which for African Americans has an admit rate of 1.03%.

<sup>35</sup>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

Harvard such as time spent writing essays, paying for SAT score sends, or direct application costs are essentially wasted as there are no direct benefits. Moreover, students may be less willing to apply to additional schools to keep total application costs down.<sup>36</sup>

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, or 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 to their extracurricular activities, personal qualities, or teacher recommendations.<sup>37</sup> 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.<sup>38</sup> But this is still much smaller than the rate for African Americans.<sup>39</sup> 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

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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%.

<sup>36</sup>Recent evidence suggests that students prefer to apply to colleges where they are likely to be admitted (Mulhern, 2021). This is consistent with the existence of relevant application costs and suggests that if applicants knew their probability of admissions were zero they would likely not apply.

<sup>37</sup>Other Harvard ratings, such as Teacher 2, School Counselor, and Alumni interview ratings, show similar patterns.

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

<sup>39</sup>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.

consistent with African Americans and Hispanics having had different cutoffs prior to 2014.

## 4 Historical Trends in Applications and Admissions 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. The 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 1996–2013).<sup>40</sup> 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 and Admissions Trends at Harvard

As documented in [Arcidiacono, Kinsler, and Ransom \(Forthcoming\)](#), 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

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<sup>40</sup>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.



changes in Harvard’s admissions policies.<sup>41</sup> Applications grew considerably over the Classes 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 applicants.<sup>42</sup> 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.<sup>43</sup>

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

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<sup>41</sup>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 HFAL. 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 HFAL. 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.

<sup>42</sup>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.

<sup>43</sup>For comparison purposes, Online Appendix Figure A1(a) 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. Online Appendix Figure A1(b) shows no sudden growth in the share of applicants or admits who were Asian American.



applicants over this period.<sup>44</sup> 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 Online 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 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.<sup>45</sup> Between 2009 and 2013, the number of African American

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<sup>44</sup>We focus on SAT scores because this is the only measure of applicant strength we can observe over the duration of this time period. We cannot rule out the possibility that other measures such as high school grades or extracurricular activities did not drop by as much (or remained constant), but this seems unlikely given the positive correlation among these three measures. For example, among Harvard applicants, the ordering of racial groups by average SAT math scores is identical to the ordering by average HS GPA. Additionally, SAT scores and HS GPA are strongly correlated with extracurricular strengths. See Tables B.3.1R and B.5.3R in [Document 415-9](#) respectively.

<sup>45</sup>In 2008, a 540 on the math SAT would correspond to the 56th percentile; a

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.<sup>46</sup> These patterns are not present in other racial groups.<sup>47</sup> 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.<sup>48</sup>

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.<sup>49</sup>

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 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 docu-

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650 would correspond to the 86th percentile. See <https://blog.prepscholar.com/sat-historical-percentiles-for-2010-2009-2008>.

<sup>46</sup>In Online Appendix Figure A4, we show similar graphs for the SAT verbal and writing scores. The results look remarkably similar.

<sup>47</sup>Online Appendix Figure A5 shows the applicant and admit totals across SAT math score ranges for Hispanics. The growth in Hispanic applicants with sub-550 SAT math scores is similar to the overall growth in Hispanic applications, a stark contrast with the pattern for African Americans. For completeness, Online Appendix Figure A6 shows Hispanic applicant totals across SAT score ranges for the verbal and writing sections. Again, growth in the sub-550 range mirrors the broader growth in Hispanic applications.

<sup>48</sup>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).

<sup>49</sup>Online Appendix Figure A7 displays the same numbers for the SAT verbal and writing scores, with very similar results.

mentation 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.<sup>50</sup> 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 Online Appendix Figure A4).<sup>51</sup> 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.<sup>52</sup> 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.

## 4.2 Admit Rate Convergence

The dramatic increase in the number of low-scoring African American applicants led to a significant decline in the African American admit rate. Between the classes of 2008 and 2016, the African American admit rate fell from 16.7% to 6.2%.<sup>53</sup> This drop is part of a broader pattern of convergence in unconditional admit rates across racial groups.

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 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

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<sup>50</sup>See [Trial Exhibit P050](#) for documentation on test score search parameters for the Classes of 2014–2017.

<sup>51</sup>This drop is not present for Hispanic applicants, consistent with Harvard having had lower test score cutoffs for African Americans prior to the Class of 2014.

<sup>52</sup>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 \(2022\)](#) 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.

<sup>53</sup>See [Trial Exhibit DX 030](#).

and Asian Americans shrunk dramatically, with the two groups having virtually identical admission rates in 2012.<sup>54</sup>

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.

## 5 External Validity

A natural question to ask is whether the recruiting strategies and admissions trends we document at Harvard are likely to hold at other elite universities in the United States. We contend that they are, for four reasons. First, the level and growth rate of applications at the so-called Ivy Plus institutions mirror those of Harvard (see Online Appendix Figures A9 and A10). Second, the trend in selectivity (measured by the overall admissions rate) at Ivy Plus institutions closely matches that of Harvard. For example, according to the College Scorecard, the admissions rate at Ivy Plus institutions was between 4% and 11% in 2018. In 2010, admissions rates ranged between 7% and 19%. It is remarkable how quickly all of these schools have managed to increase their application numbers, and these aggregate statistics point to the likely scenario that the recruiting practices we document in this paper are being used at other elite universities. Third, we can compare the share of the student body that is African American across all Ivy Plus institutions. The trend is much flatter than the application totals and admissions rates. In 2010, the single-race African American share was between 5% and 9%; in 2018, the corresponding range was 5% to 10.2%.

The fourth reason is perhaps the most compelling. Namely, admissions data from Yale shows striking similarities with the application and admit patterns at Harvard. In October

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<sup>54</sup>Online Appendix Figure A8(a) shows the ratio of admit rates for each race relative to the overall admit rate, going back to the Class of 1980.

of 2020, the US Department of Justice filed a complaint that Yale was discriminating on the basis of race in undergraduate admissions ([Document 1 \(2020\)](#)). The complaint includes information on the distribution of domestic applicants and admissions rates across academic index deciles for non-recruited athletes in the Yale classes of 2021 and 2022. Similar data is available for domestic non-recruited athletes at Harvard for the Classes of 2014–2019. Figures 6 and 7 illustrate the remarkable similarities between Harvard and Yale along these two dimensions of admissions.

As Figure 6 indicates, African Americans are vastly overrepresented in the bottom academic index deciles at both Yale and Harvard. For the Yale Classes of 2020 and 2021, 32% of African American applicants are in the bottom decile, while 54% are in the bottom two deciles. The corresponding percentages for applicants to the Classes of 2014–2019 at Harvard are 38% and 61% respectively.<sup>55</sup> Figure 7 shows that at both schools, applicants in the bottom decile of the academic index are essentially never admitted and applicants in the second decile have very low admissions rates as well. Since Figure 7 includes legacy, dean’s list, and faculty/staff applicants for both Harvard and Yale, the admit rates for typical applicants in the bottom deciles will be even lower. Like Harvard, Yale’s racial distribution of applicants by academic strength and corresponding admit rates are consistent with a policy of actively recruiting African American candidates who essentially have no chance of admission.

## 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 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 URM applicants differently than white

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<sup>55</sup>The values for Harvard are essentially identical to the ones reported in Table 3, where legacy, dean’s list, and faculty/staff applicants are also excluded. This reflects the fact that African American applicants constitute a very small share of these groups.

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 suggestive evidence that this was not always the case, and that beginning with the Class of 2009, Harvard dramatically expanded its recruitment of low-scoring African American applicants.

While there are benefits to casting a wide net by recruiting applicants who have little chance of getting in, this strategy is not without costs. One cost is that a significant number of African American high school students have a 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-starved, especially 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.<sup>56</sup>

There is suggestive evidence that the patterns in African American recruiting at Harvard are replicated at other elite colleges and universities.<sup>57</sup> Recently released admissions statistics suggest that Yale University pursues similar recruiting strategies, with African Americans substantially overrepresented at the bottom of the distribution of academic credentials where virtually no one is admitted. But more transparency is needed to understand the extent of this phenomenon. 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

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<sup>56</sup>See [Bettinger et al. \(2012\)](#); [Hoxby and Avery \(2013\)](#); [Carrell and Sacerdote \(2017\)](#); [Dynarski et al. \(2018\)](#); and [Gurantz et al. \(2020, 2021\)](#).

<sup>57</sup>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.

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.

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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). SAT equivalence is as computed by Harvard in the original source document. [Bond et al. \(2018\)](#) report a high correlation between PSAT and SAT scores (bivariate regression  $R^2 = 0.86$ ).

“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 \(2022\)](#).

*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 \(2022\)](#) 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

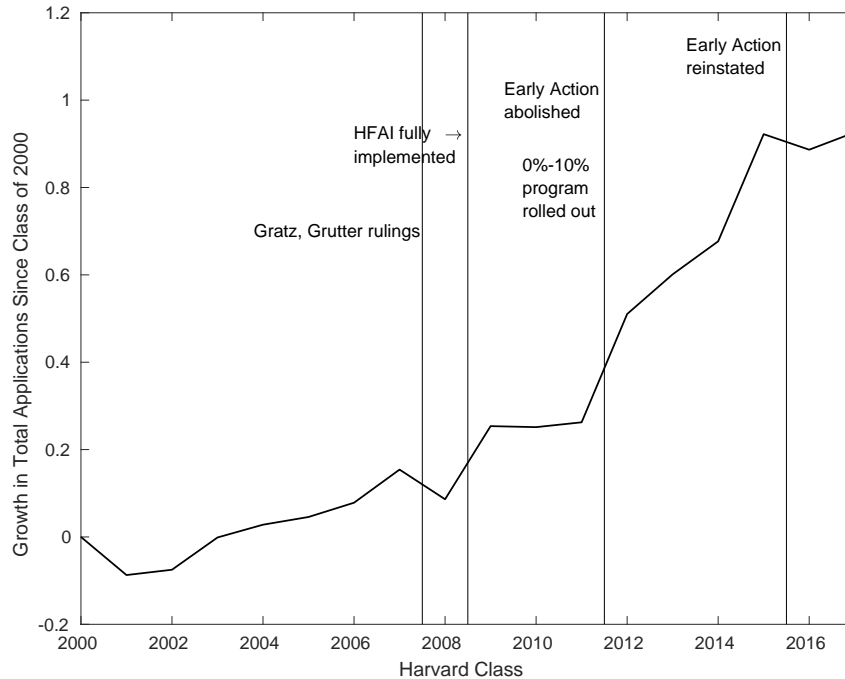
*Source:* Authors' calculations from data presented in Tables 5.1R and 5.2R of [Document 415-9](#). Rows sum to 100. Data restricted to non-ALDC applicants from the Classes of 2014–2019.

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

Decile	White	African American	Hispanic	Asian American
<i>Panel A: Academic Rating</i>				
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
<i>Panel B: Extracurricular Rating</i>				
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
<i>Panel C: Personal Rating</i>				
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
<i>Panel D: Teacher 1 Rating</i>				
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.*).

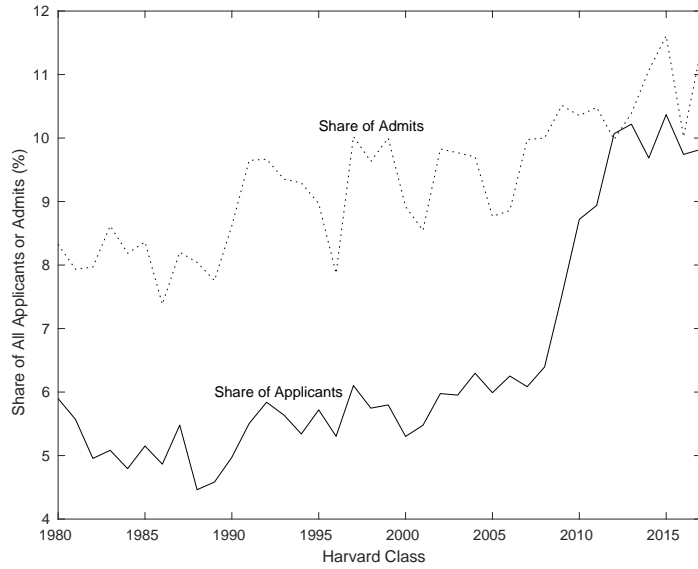
The 0%–10% program was announced just before the application deadline for the Class of 2012 cycle ([The Harvard Gazette, 2007](#)). The program increased financial aid for families with incomes below \$180,000. For families with incomes of between \$60,000 and \$120,000, families would be required to 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 to the Class of 2012 admissions cycle ([Finder and Arenson, 2006](#)), and reinstated at the end of the Class of 2015 cycle ([Lewin, 2011](#)).

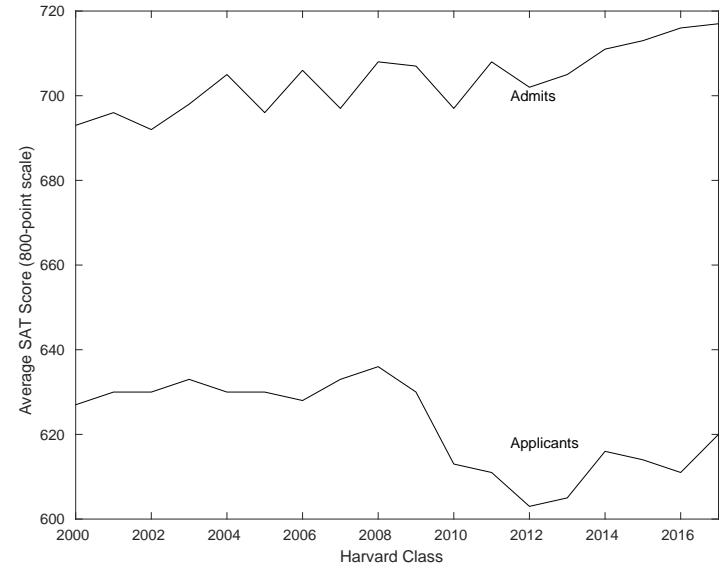
*Source:* Authors’ calculations from *SFFA v. Harvard* Trial Exhibit DX 030 and Trial Exhibit DX 042.

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



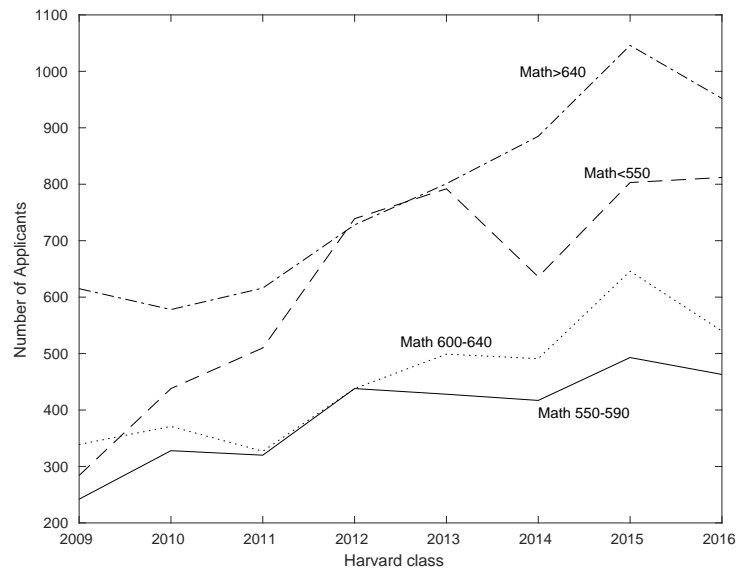
(b) SAT Scores of Applicants and Admits, Classes of 2000–2017



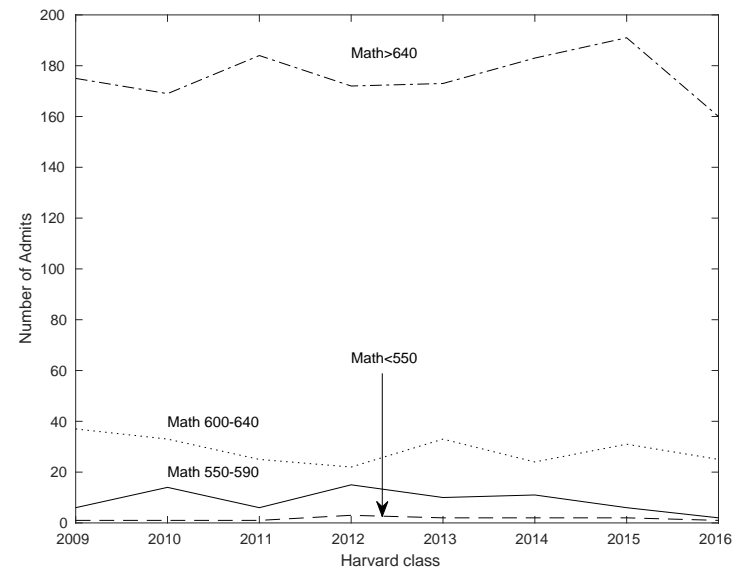
Source: Authors' calculations from [Trial Exhibit DX 030](#) and [Trial Exhibit DX 042](#).

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

(a) Number of Applicants



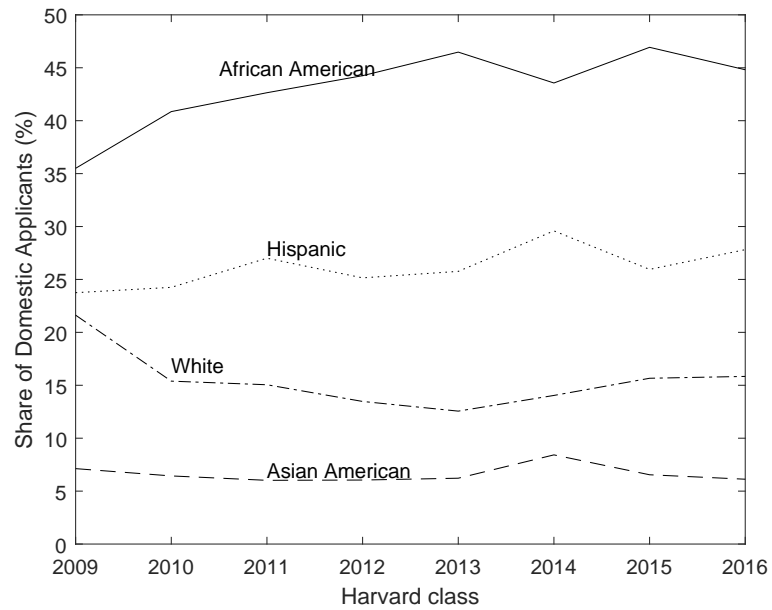
(b) Number of Admits



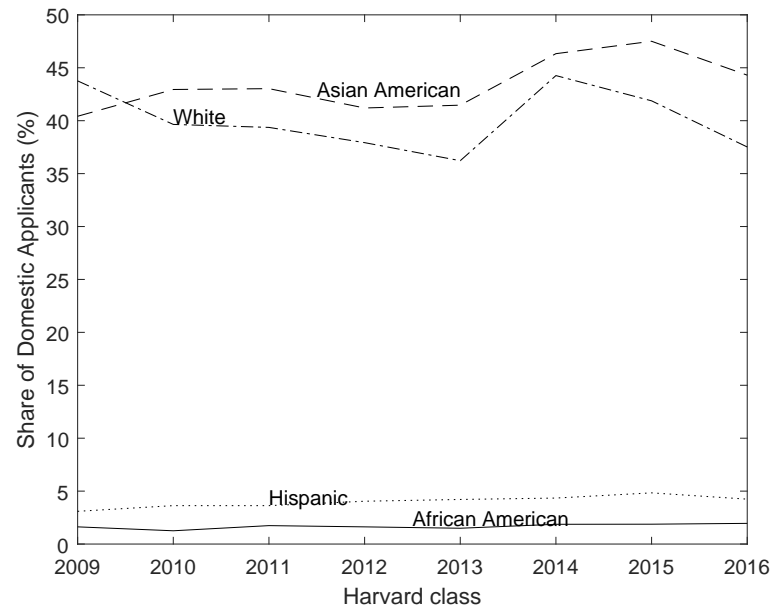
Source: Authors' calculations from [Trial Exhibit P044](#).

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

(a) SAT Math < 550

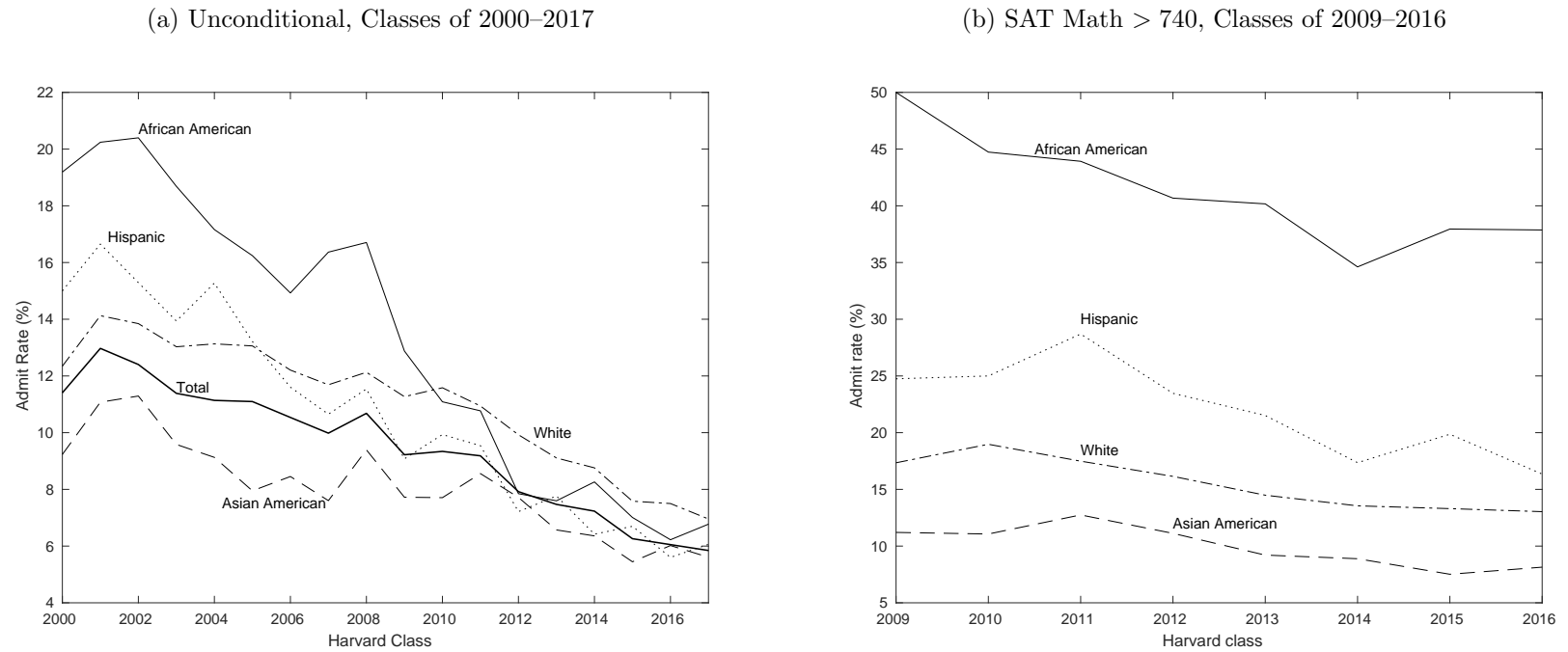


(b) SAT Math > 740



Source: Authors' calculations from [Trial Exhibit P044](#).

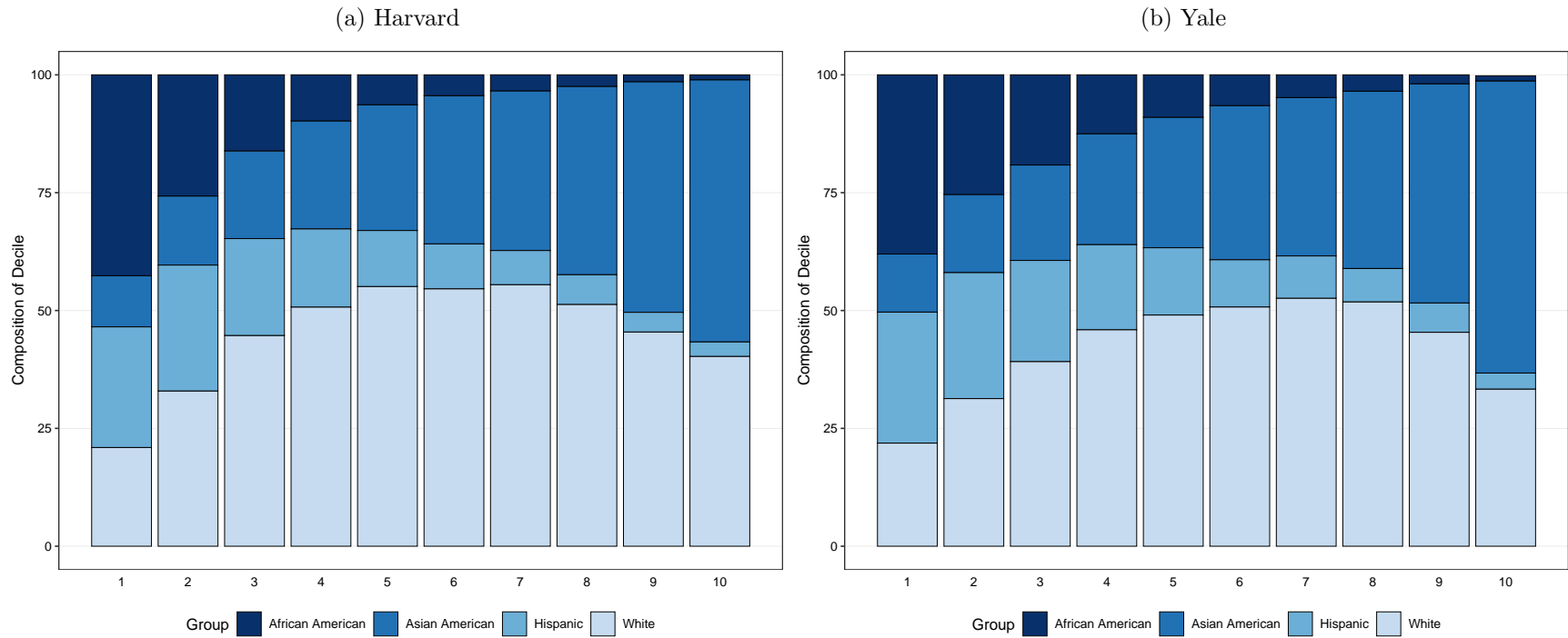
Figure 5: Admit Rates by Race



Source: Authors' calculations from [Trial Exhibit DX 042](#) and [Trial Exhibit P044](#).

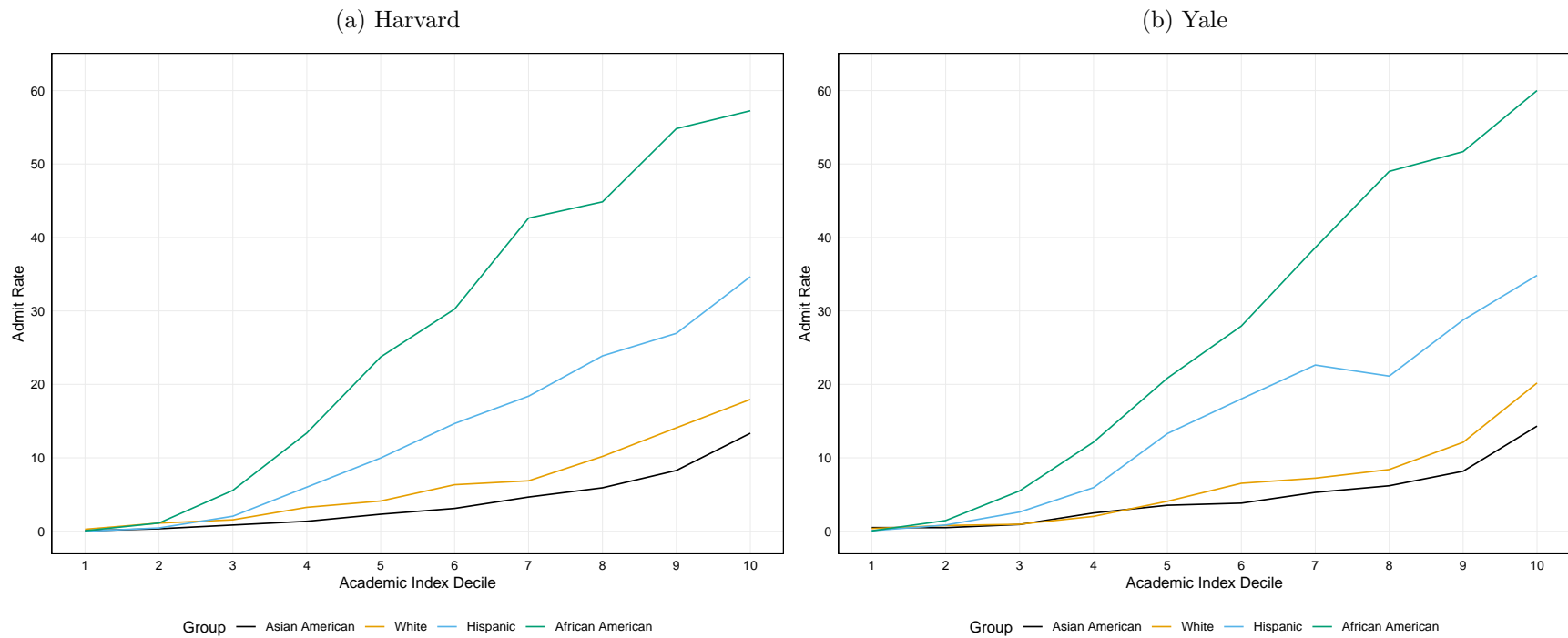


Figure 6: Racial Distribution of Academic Index Deciles at Harvard and Yale



Source: Authors' calculations from Table B.5.1R of Document 415-9 and page 23 of Document 1.

Figure 7: Admit Rates by Race and Academic Index Decile at Harvard and Yale



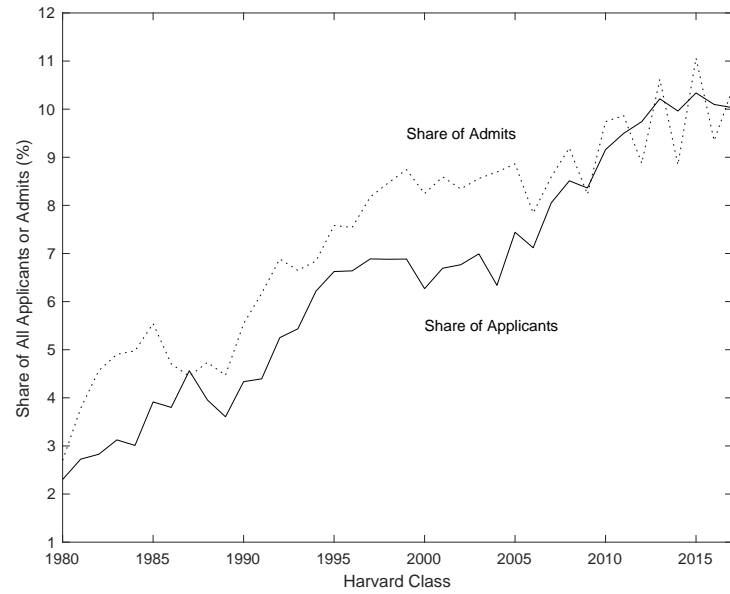
Source: Authors' calculations from Table B.5.2R of [Document 415-9](#) and page 23 of [Document 1](#).

# Online Appendix

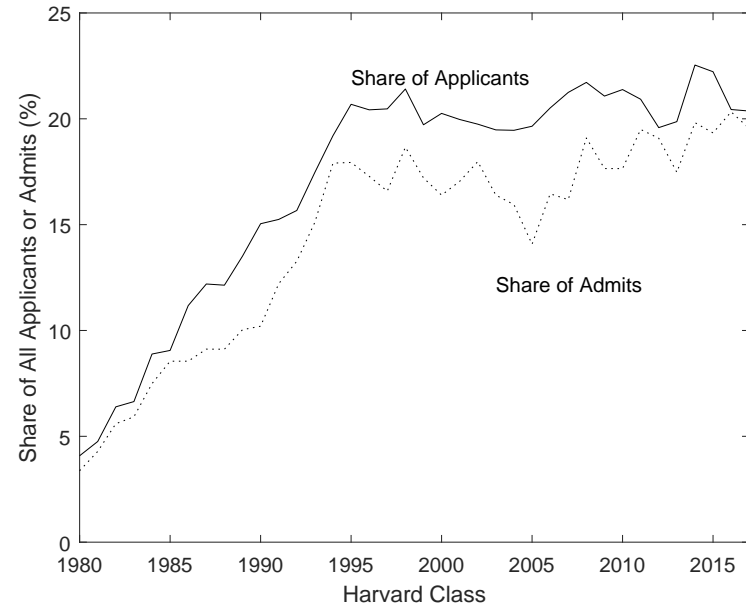
# A Supporting Figures

Figure A1: Hispanic and Asian American Shares of Applicants and Admits

(a) Hispanics



(b) Asian Americans

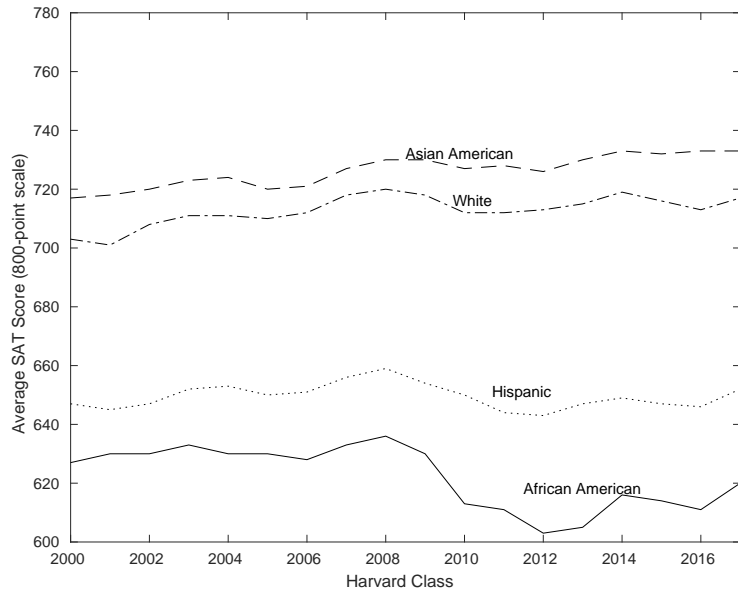


A2

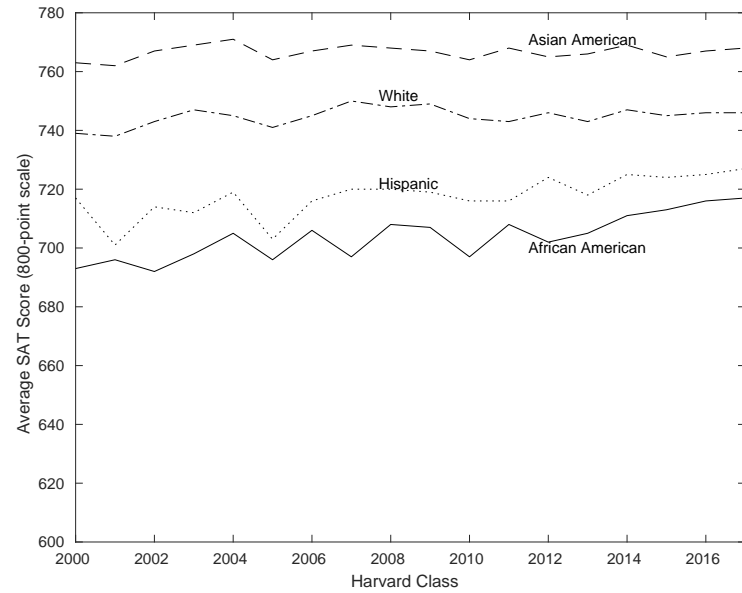
Source: Authors' calculations from [Trial Exhibit DX 030](#), [Trial Exhibit DX 033](#) and [Trial Exhibit DX 042](#).

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

(a) Applicants



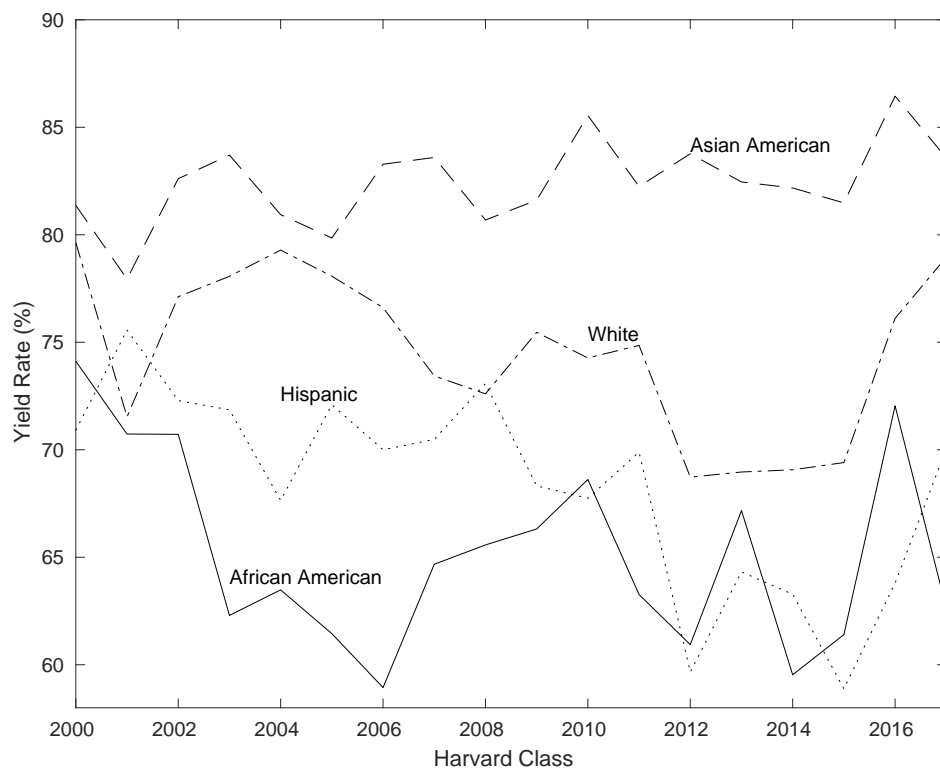
(b) Admits



A3

Source: Authors' calculations from [Trial Exhibit DX 042](#).

Figure A3: Yield Rates by Race

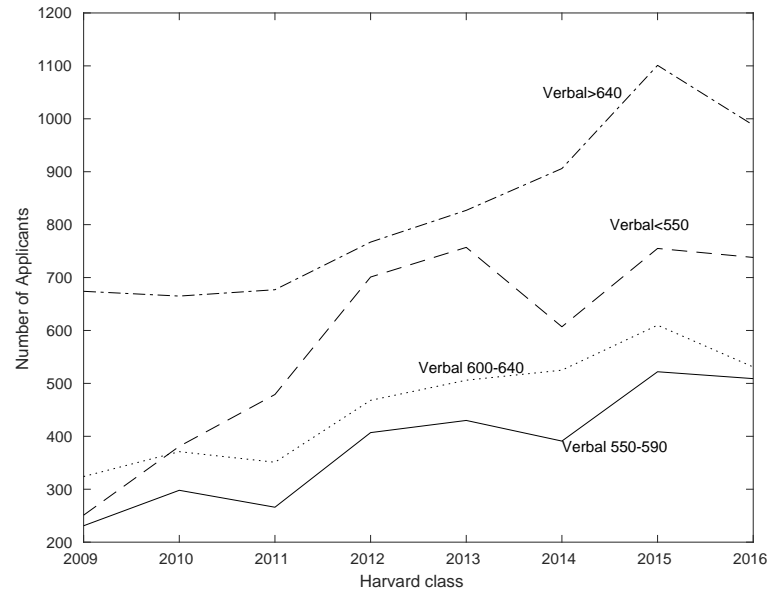


*Note:* Excludes legacies and recruited athletes.

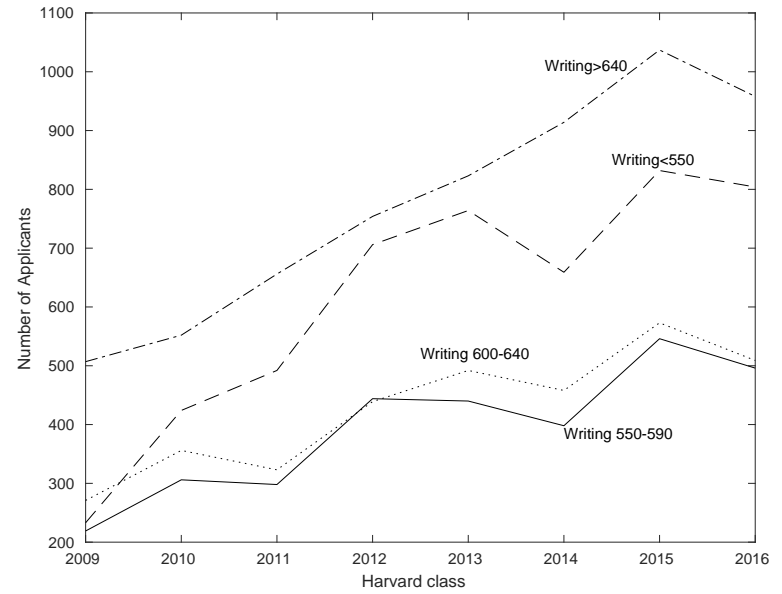
*Source:* Authors' calculations from [Trial Exhibit DX 042](#).

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

(a) Verbal



(b) Writing



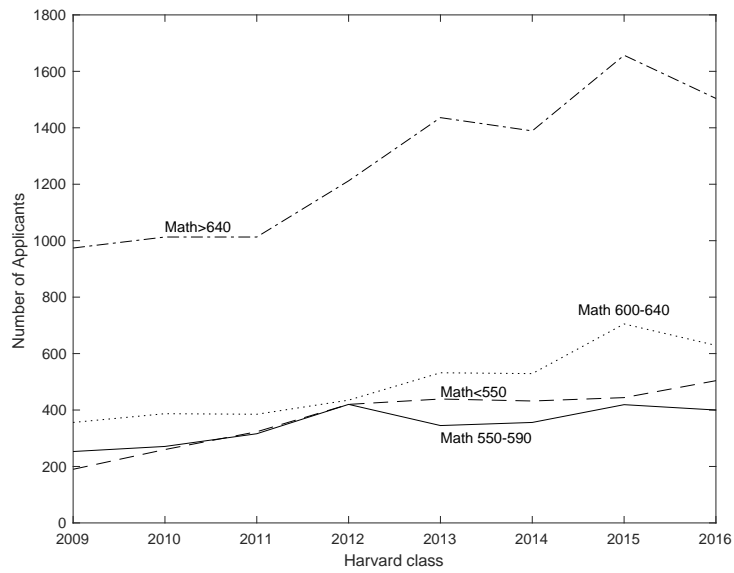
A5

Source: Authors' calculations from [Trial Exhibit P044](#).

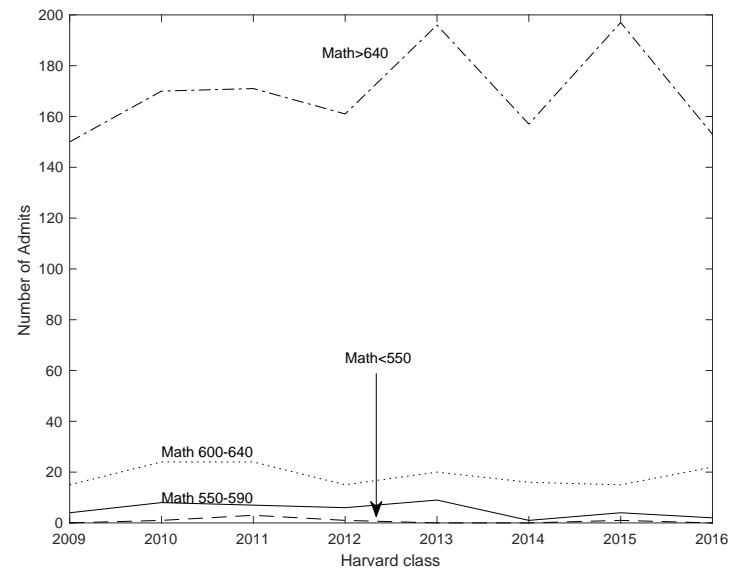


Figure A5: Hispanic Applications and Admits by SAT Math Score, Classes of 2009–2016

(a) Number of Applicants



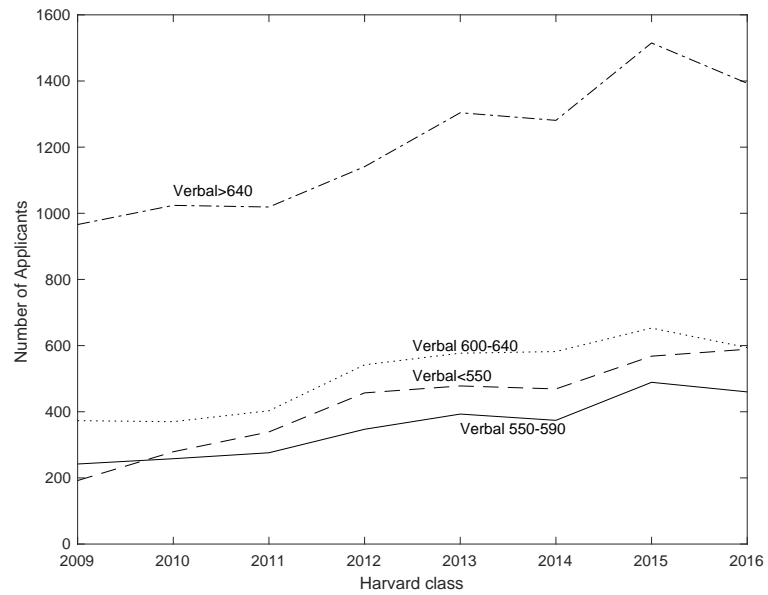
(b) Number of Admits



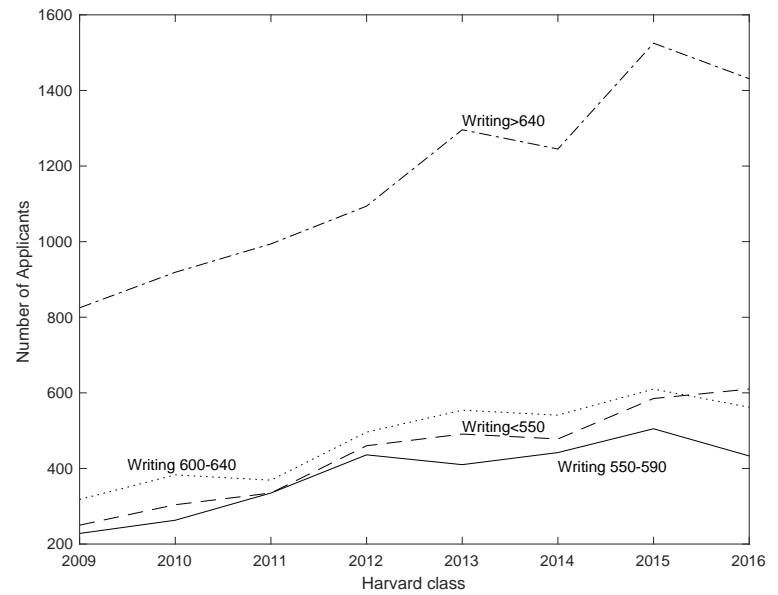
Source: Authors' calculations from Trial Exhibit P044.

Figure A6: Hispanic Applications by SAT Verbal and Writing Score, Classes of 2009–2016

(a) Verbal



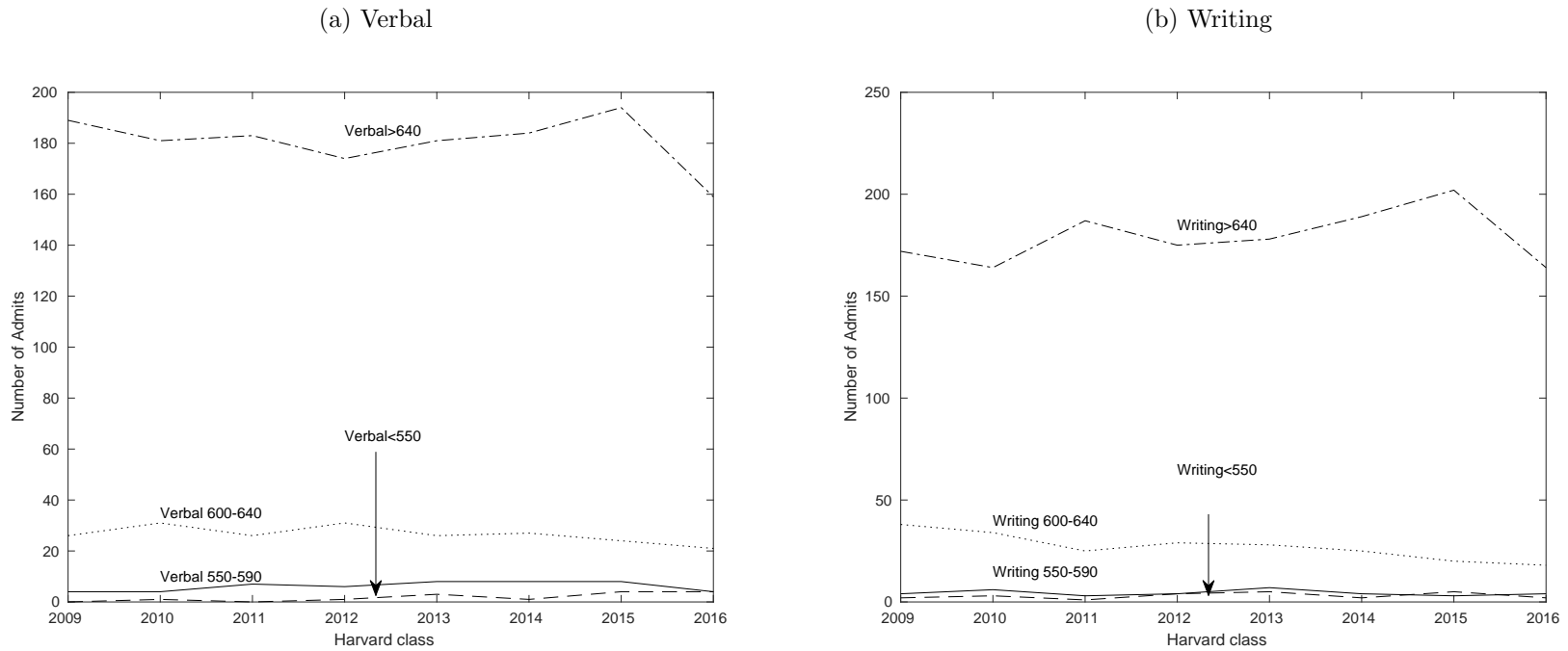
(b) Writing



A7

Source: Authors' calculations from [Trial Exhibit P044](#).

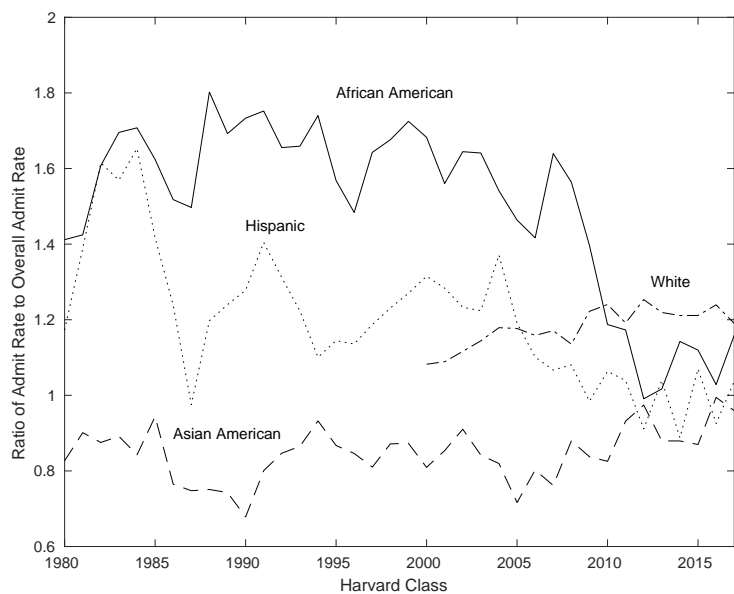
Figure A7: African American Admits by SAT Verbal and Writing Score, Classes of 2009–2016



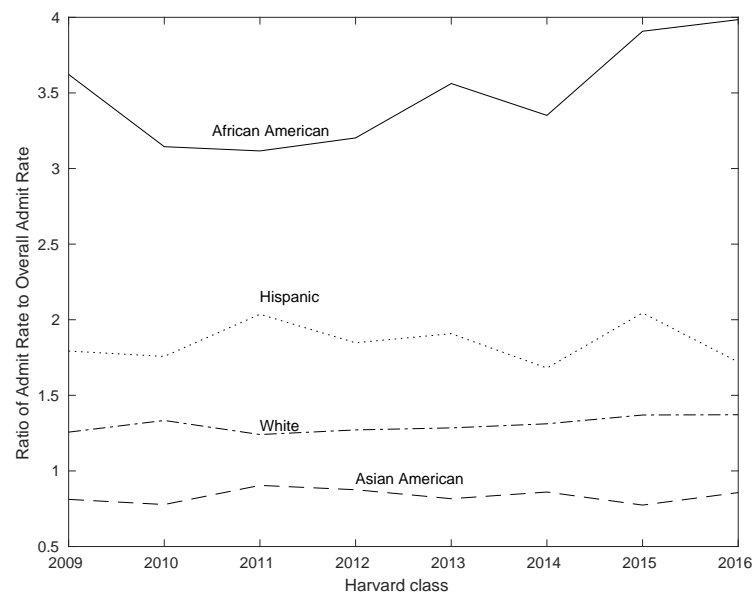
Source: Authors' calculations from [Trial Exhibit P044](#).

Figure A8: Admit Rate Ratios by Race

(a) Unconditional, Classes of 1980–2017



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

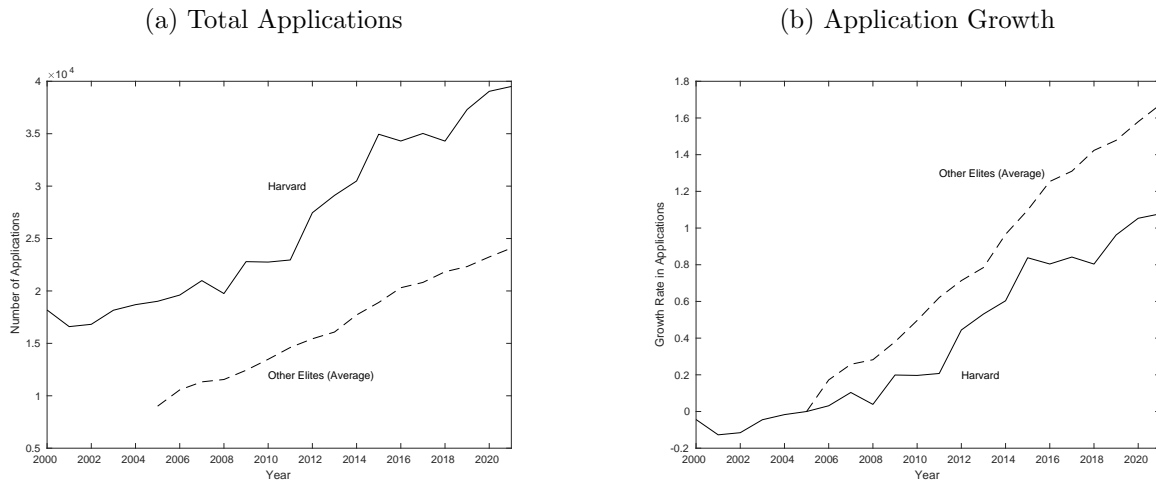


A9

*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](#).

Figure A9: Application Trends at Harvard and Other Elites

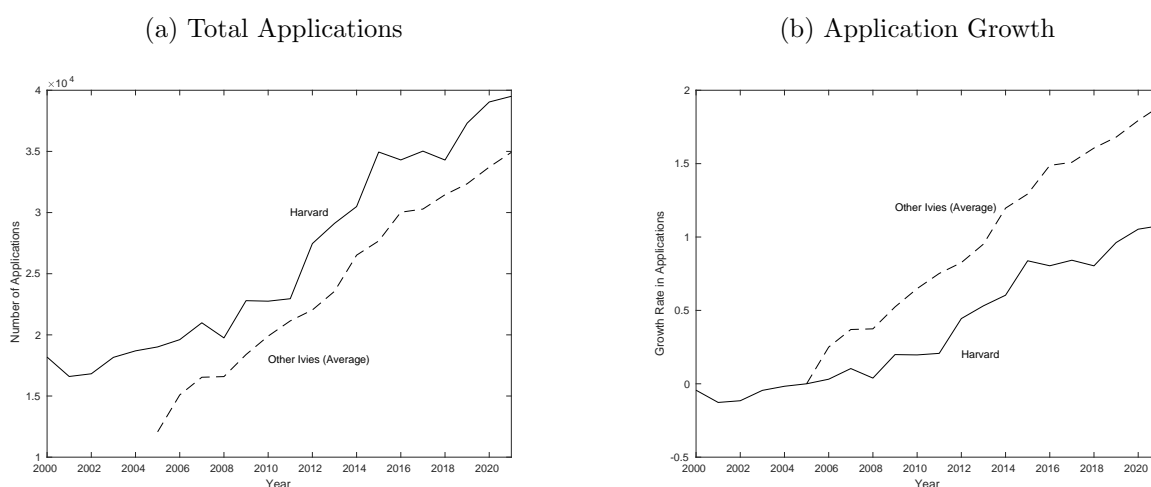


*Notes:* These figures also appear in [Arcidiacono, Kinsler, and Ransom \(Forthcoming\)](#). Panel (a) lists, by year, the total number of applications submitted to Harvard, compared to the total number of applications submitted to Other Elites divided by the number of Other Elite universities. Panel (b) lists growth rates based on the numbers presented in Panel (a).

Other Elites include the following: Amherst College, Caltech, Carnegie Mellon, Columbia, Cornell, Dartmouth, Duke, Harvey Mudd, Johns Hopkins, MIT, Northwestern, Pomona College, Princeton, Rice, Stanford, Swarthmore, Penn, Williams, and Yale. These were chosen because they are 4-year public and private universities that have a 75th percentile math SAT score greater than or equal to 750 between the years of 2001 and 2017, and because they are not missing more than one year of SAT scores or application totals.

*Source:* Authors' calculations from [SFFA v. Harvard Trial Exhibit DX 042](#) and US National Center for Education Statistics' Integrated Postsecondary Education Data System (IPEDS).

Figure A10: Application Trends at Harvard and Other Ivies



*Notes:* These figures also appear in [Arcidiacono, Kinsler, and Ransom \(Forthcoming\)](#). Panel (a) lists, by year, the total number of applications submitted to Harvard, compared to the total number of applications submitted to other Ivy League institutions divided by the number of other Ivies. Panel (b) lists growth rates based on the numbers presented in Panel (a).

Other Ivies include Columbia, Cornell, Dartmouth, Princeton, Penn, and Yale. Brown is excluded due to incomplete data.

*Source:* Authors' calculations from [SFFA v. Harvard Trial Exhibit DX 042](#) and US National Center for Education Statistics' Integrated Postsecondary Education Data System (IPEDS).