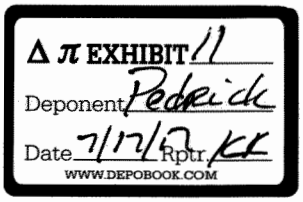
EXHIBIT 200

Title: Quantifying the Asian Penalty in College Admissions

By: [redacted]

Class: Statistics



Abstract

In today's educational climate, it is almost taken for granted that race matters in college admissions. Institutionally, African Americans, Hispanics, and other minority groups are favored by affirmative action policies. Such policies are justified on the basis of promoting diversity, which is considered to be a "compelling state interest[1]." Students, academics, and teachers, however, suspect that colleges practice overt discrimination against Asian students – systemically disadvantaging them over peers of all races. Though widely accepted to be true, such claims have seldom been empirically tested and never been quantified from the perspective of an applicant. Meanwhile, colleges continue to deny the existence of an "Asian penalty." This paper addresses this dearth of data. Using multivariate regression, we provide compelling evidence that the Asian penalty not only exists, but is highly significant. Holding SAT scores, GPA, gender, socio-economic status, and rigor of curriculum constant, we find that, on average, an Asian student will be admitted to a school that is 8.4 rankings lower than the school to which s/he would have been admitted had s/he not been Asian.

Introduction:

Despite being frequently covered in mainstream periodicals, the empirical literature on Asian discrimination during the college admissions process is sparse. The most well-cited study (and indeed, the only major one) on the topic was conducted by Thomas J. Espenshade, a Professor of Sociology at Princeton University. By analyzing data from the National Study of College Experience (NSCE) survey, which included hundreds of thousands of students who applied to 10 selective colleges between the early 1980s and late 1990s, he found that, on average, Asian

[1] Regents of the University of California vs. Bakke. Supreme Court. 26 June 1978. Print.

students accepted to these universities scored 140 points higher on their SATs than did their white peers and 450 points higher than African American students.[2] Espenshade's mean-driven analysis was enough to raise red flags regarding Asian discrimination, because it proved that "something was up," but did not causally link self-reporting an Asian ethnicity to college admission decisions. Espenshade himself cautions against drawing the conclusion of overt discrimination, given the fact that his study does not control for outside variables, including gender, socio-economic status, GPA, extra-curricular participation, rigor of high school curriculum, among other factors. A study conducted by the Center for Equal Opportunity at the University of Wisconsin, Madison[3] found a similar, but less extreme result: Asians at the university had median math and reading SAT scores of 1370 out of 1600, compared with 1340 for white students, 1250 for students of Hispanic descent and 1190 for black students. A number of authors have suggested that Asian American students may have higher mean SAT scores because, as a group, they perform more weakly when it comes to other admission criteria.[4]

Critics of the Asian penalty are also likely to cite a 17% "Asian quota." Ron Unz for the *New York Times* explains that the percentage of Asians among the student bodies of Ivy League schools has remained at 17 percent for the past 20 years, despite "a huge rise in the number of Asians winning top academic awards in our high schools or being named National Merit

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[2] Espenshade, Thomas J., Alexandria Walton Radford, and Chang Young. Chung. *No Longer Separate, Not Yet Equal: Race and Class in Elite College Admission and Campus Life.* Princeton, NJ: Princeton UP, 2009. Print.
[3] Slotnik, Daniel. "Do Asian-Americans Face Bias in Admissions at Elite Colleges?" *New York Times*, 8 Feb. 2012. Web. 16 June 2014.
[4] *Ibid*

Scholarship semifinalists.[5]" While this statistical trend is suspicious, it does not conclusively demonstrate that an overt anti-Asian bias exists. Indeed, Ivy League schools vehemently deny the existence of such quotas. Jeff Neal, director of university communications for Harvard recently asserted that, "the admissions committee does not use quotas of any kind."

This study builds on the available literature in three major ways. First, we will control for exogenous variables through multivariate regression, allowing us to draw causal and decisive conclusions. Second, we use college rank as our dependent variable in order to effectively measure the height of the "bamboo ceiling.[6]" Finally, our study uses data from 2007, which is significantly more current than either Espenshade or the Center for Equal Opportunity, both of whom rely on decades old data. As a result, our study has stronger statistical robustness than does the current literature and presents novel findings.

Methods

Stuyvesant High School is an elite New York City high school whose students compete for spots at America's top universities. Its student body is comprised of almost exclusively of Caucasian and Asian students, with Hispanics and African Americans representing less than 5% of the school's population. Comparing college admissions results between Asian students and their non-Asian peers allows us to quantify the effect of the purported Asian penalty. We used the official college admissions data for the Class of 2007 to model the level of Asian discrimination at Stuyvesant. This cluster sample is representative of the greater Stuyvesant population (it was

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[5] Utz, Run. " Statistics Indicate an Ivy League Asian Quota." *New York Times*, 3 Dec. 2013. Web. 16 June 2014.

[6] Chen, Carolyn. "Affirmative Action and Breaking the 'Bamboo Ceiling' for Asian Americans." *Los Angeles Times*. 13 June 2013. Web. 16 June 2014.

selected at random from a dataset that included all students who have graduated since 2003). Stuyvesant High School is representative of a highly competitive ivy-league feeder high school. Its high-proportion Asian/White population makes it especially effective at modeling the differences in college admission between Asians and Caucasians.

This study relied on a multivariate regression model with the following independent variables:

1. *GPA:* Grade point average, measured on a 100-point scale. GPA is often considered the single-most important factor in college admissions
2. *SAT Score:* Total score on the SAT out of 2400. Another important metric used by colleges in their holistic admissions process.
3. *Meal Code:* Stuyvesant's students are all classified as receiving free, reduced or full price lunches, as a function of their family's socioeconomic status. These meal codes were used to model the effect of income on college admissions, which, although not statedly an important factor in college decisions, is widely considered to have an impact. Socio-economic status also generally predicts students' legacy status. (0 = free lunch, 1 = reduced lunch, 2 = full-paid lunch).
4. *# of AP Classes:* Level of academic rigor throughout one's high school career is heavily weighted by admissions officers when making their decisions.
5. *Ethnicity (binary):* The independent variable of interest in this study. Represents the unique effect of being Asian on the dependent variable (0 = Asian, 1 = Non-Asian)
6. *Gender (binary):* It has been proposed that female students are held to a higher standard than their male peers, given that young women already make up the majority of the

population at many elite universities. To control for this possible effect, we have included gender as an independent variable (0 = Female, 1 = Male).

A significant variable not accounted for in this multivariate regression model is level of participation in extracurricular activities. However, a simple mean-driven analysis of a 2014 survey conducted by the *Stuyvesant Spectator*, Stuyvesant's official school newspaper, showed no systemic difference in extracurricular participation between Asian and non-Asian students, indicating that this is not a confounding variable. (Omitted variable biases can only effect multivariate regression when the omitted variable shares variance with another independent variable being analyzed.) Quality of college essays may be a lurking variable and was not included in this analysis.

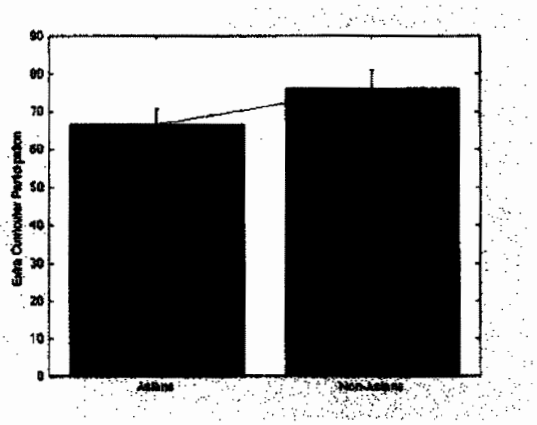

Figure 1: Omission of extracurricular participation will not confound the multivariate regression because there is no systemic relationship between ethnicity and extracurricular participation.

The dependent variable used in this study was the highest ranked college to which a student was accepted. We chose to use the rank of the highest ranked college to which a student was accepted, as opposed to using the school the student chose to attend in order to control for a student selection bias. We did not run the regression on every school to which the student was accepted, because this would have over-weighted students who chose to apply to a greater number of safety schools (or just a greater number of schools, period). Rankings were determined using the Forbes America's Top Colleges ranking scale.[7]

[7] Forbes. "America's Top Colleges." *Forbes Magazine*, July 2013. Web. 16 June 2014.

α: .05

Null hypothesis: $\beta_{ethnic} => 0$.

Alternate hypothesis: $\beta_{ethnic} < 0$

Model: $Rank = \beta + \beta_1 * GPA + \beta_2 * gender + \beta_{ethnic} * ethnic + \beta_4 * SAT\_Total + \beta_5 * mealcode + \beta_6 * AP\_Classes$

See Appendix 1 for all of the data.

Results

Model: *Rank = 941.1495 - 8.1152 * GPA + 0.2958 * gender - 8.4068 * ethnic - 0.0556 * SAT_Total - 0.2044 * mealcode - 1.5678 * AP_Classes*

The multivariate regression yielded a correlation coefficient of -8.40676, for the ethnicity variable, with a p-value of 2.68611E-2. This is a statistically significant finding, with p less than alpha. All else being equal, non-Asian students will be admitted to schools that are ranked 8.4 rankings better (lower, meaning closer to 1) than they would have had they been Asian (see Appendix 2 for full breakdown of the multivariate regression results).

Though not relevant in the context of our hypothesis, we should note that the correlation coefficients for GPA, SAT Score, and # APs taken all came out as significant (which was expected), with p-values of 0.E+0, 1.39712E-3 and 1.6641E-2, respectively. Mealcode and gender were not significant with p-values of 4.70845E-1 and 4.71586E-1, respectively. These

findings would indicate the colleges are indeed gender/need blind when making their admissions decisions, and that academic performance in heavily weighted in the college decision process.

Discussion

Our finding is highly statistically significant and indicates that colleges systemically discriminate against Asian students, with the Asian penalty at Stuyvesant High School being equivalent to 8 rankings on the Forbes America's Top Colleges ranking scale. Discrimination against Asians is not minor, nor is it indirect. The race-conscious process by which students are selected by elite universities is nothing less than racism.