Increasing Access to a Four–Year College: Impacts of a California State University Guaranteed Admission Program on College Enrollment Rates

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ABSTRACT
Guaranteed admission programs are a type of college access program that provide students who meet certain criteria (*e.g.*, a minimum GPA) with guaranteed admission to one or more colleges. This paper studies guaranteed admission agreements between California State University San Marcos (CSUSM) and its local school districts to evaluate if smaller-scale, local guaranteed admission programs have comparable impacts on college enrollment rates to previously studied state-wide programs. Employing a regression discontinuity (RD) design around the program's GPA cutoff conditional on students satisfying other program requirements, this paper finds that the program significantly increased enrollment at CSUSM and at any California State University (CSU) and increased (not significantly) the likelihood of students enrolling at four-year institutions compared to two-year alternatives. In addition, the program disproportionally affected students from underrepresented backgrounds (*e.g.*, first-generation, nonwhite, and low-income backgrounds), suggesting that local guaranteed admission programs also have the potential to increase representation at four-year public institutions and encourage underrepresented students to enroll at higher-quality postsecondary institutions.

KEYWORDS
Guaranteed Admission; College Enrollment; College Admissions; College Access; Higher Education; California State University; Education Policy; Local Policy

INTRODUCTION

Obtaining a college degree typically opens the door to numerous benefits, including a wider selection of occupational choices and more economic stability. Aside from being able to access over 160 different types of occupations that require a bachelor's degree,[1] American college graduates experience, on average, lower unemployment rates and higher hourly wages compared to Americans whose highest level of educational attainment is a high school diploma.[2–4] Yet the benefits of having a college degree are distributed unequally in the United States. Students who identify as an underrepresented racial minority, come from a low-income background, or whose parents do not have a college degree are significantly less likely to pursue and obtain a college degree.[4–6]

Consequently, policymakers have experimented with different approaches to increase college enrollment, especially among underserved community members, such as implementing financial aid and guaranteed admission programs. Financial aid policies, such as the national need-based Pell Grant and state-based programs like the Cal Grant and Maryland's Educational Assistance Grant, directly address issues surrounding the cost of college and commonly target low-income students.[7] On the other hand, guaranteed admission policies grew in popularity as multiple states in the U.S. banned the use of affirmative action (the consideration of race and ethnicity in college admissions). States like Texas

and California began providing students who graduate near the top of their high school class with guaranteed admission to in-state public universities after the ban of affirmative action in their state as an attempt to maintain diversity in public higher education.[8, 9] As of 2021, 13 states have implemented a state-wide guaranteed admission program.[10]

This paper focuses on the second type of policy: guaranteed admission programs. Existing research finds that the Texas and California guaranteed admission programs significantly increased enrollment and graduation rates at high-quality, in-state public universities among historically underrepresented students in higher education, such as those from lower-income backgrounds.[8, 11] In contrast, a guaranteed admission program in Idaho involving a mixture of two-year and four-year institutions significantly increased two-year college enrollment rates but did not significantly impact the enrollment rates of low-income students.[12]

These previous findings have important implications for addressing inequality as the policies in Texas and California primarily benefitted underrepresented students following the end of affirmative action in those states. However, little is known about how the effects of a locally targeted guaranteed admission program may differ from these previously studied state-wide policies. For instance, some institutions like the California State University (CSU) system studied in this paper have a stronger focus on serving its local communities (*e.g.*, by providing priority admissions to local school districts), potentially making the guaranteed admission option more attractive to local students.[13]

Furthermore, previous papers do not consider how variations in guaranteed admission programs' requirements may result in differing enrollment outcomes. The previous findings mentioned above suggest that policies targeting high-achieving minority students may be more effective in encouraging them to enroll at higher-quality institutions (as seen in the Texas and California policies) whereas policies that expand their scope to include more students may be more effective in increasing the overall college enrollment rate (as seen in the Idaho policy).[8, 11, 12] Additional research can help establish this trend and extend it to local guaranteed admission programs.

This paper provides insight into the effectiveness of local guaranteed admission programs and how program requirements may shape enrollment outcomes by studying a guaranteed admission program between California State University San Marcos (CSUSM) and its surrounding school districts. CSUSM signed Memorandums of Understanding (MOUs) with 10 local school districts between 2009 to 2015,[A] which guarantee students who graduate from a partner school district admission to the university if they satisfy the standard CSU admission requirements (*i.e.*, complete the A-G courses and pass the entry-level math and English exams), graduate with a minimum Grade Point Average (GPA) of 3.0, and take the SAT Reasoning Test (SAT I) or ACT exam. This CSUSM program differs from previously studied guaranteed admission programs since it focuses on encouraging students from a small, local community to enroll at a certain college compared to state-wide programs that usually involve multiple public universities. Additionally, compared to other four-year institutions, CSU schools like CSUSM serve a larger proportion of minority and low-income students, potentially making them more effective at targeting underrepresented students through the MOUs.[14] Moreover, during the years studied in this paper (2017 to 2019), CSUSM did not require students to provide personal statements or background on their extracurricular involvement in their application, simplifying the application process and possibly encouraging more students to take advantage of the guaranteed admission program.[15–17]

The author collects novel data directly from two school districts that have signed MOUs with CSUSM. The data consists of 21,191 graduates between 2016 to 2022 and describes their high school performance (*e.g.*, GPA, SAT/ACT completion status, and A-G course completion status), demographic information (*e.g.*, race, gender, and parents' highest level of education attainment), and the first postsecondary institution in the U.S. enrolled at after high school (if any). This information is combined with data from the Integrated Postsecondary Education Data System (IPEDS) to classify each postsecondary as a four-year or two-year institution. The analysis sample is restricted to 4,502[B] students who graduated between 2017 to 2019 and satisfied the CSU A-G course requirement and the SAT I/ACT requirement for guaranteed admission.

Using a regression discontinuity (RD) analysis around the 3.0 GPA cutoff for the CSUSM MOUs, this paper finds that the CSUSM MOUs do not affect overall enrollment rates at any postsecondary. However, students just above the GPA cutoff are significantly more likely to enroll at CSUSM or any CSU in lieu of two-year institutions. Furthermore, these results are driven mostly by students whose parents did not attain a college degree, nonwhite students, and low-income students, closing the college enrollment gaps between students whose parents did/did not attain a college degree and the CSUSM and CSU enrollment gaps by income. These results indicate that the CSUSM MOUs are encouraging underrepresented students to shift away from enrolling at two-year institutions towards enrolling at four-year institutions, particularly towards the CSUs. Hence, the CSUSM MOUs are increasing underrepresented student enrollment at higher-quality institutions and closing historic gaps in enrollment in the CSU system. These results hold even when including the graduating class of 2020 in the analysis sample or when doubling the RD bandwidth sizes. The author also validates these findings using a placebo sample of 1,882 graduates from 2016 and finds no significant increases in any postsecondary, any four-year, CSUSM, or CSU enrollment and no significant decreases in two-year enrollment for this sample above the GPA cutoff.

This paper contributes new findings on the effectiveness of guaranteed admission programs and presents insight into how the effectiveness of local programs may differ from state-wide programs. The CSUSM MOUs target a much smaller community (10 school districts) compared to state-wide programs. Therefore, the CSUSM MOUs may be especially appealing to students considering a local two-year alternative or could potentially incentivize students on the brink of attending college to enroll in a local, guaranteed four-year option. Since CSUSM shares a common application with other CSU campuses,[16] this paper provides insight into how the MOUs may expand enrollment at other CSUs by incentivizing students to complete the CSU application process. In addition, due to local guaranteed admission programs being much smaller-scale compared to state-wide programs, they may be less likely to displace other qualified students.

This paper also contributes more broadly to the literature studying inequality in higher education access and enrollment. The restrictiveness of the conditions for being eligible for the CSUSM MOUs is situated between the top percent policies (*i.e.*, the Texas and California policies) and the Idaho direct admissions program. The CSUSM MOUs do not restrict access to the most qualified students like in the top percent policies but still require students to meet a 3.0 GPA requirement. Hence, this paper could provide further insight into how a program's requirements accessibility could impact the effectiveness of the program or the group(s) of students the program targets.

Prior Literature on Guaranteed Admission Programs

Guaranteed admission programs rose in popularity with the ban on affirmative action in several states. As a result, guaranteed admission programs can be an important facilitator in increasing the college enrollment rates of historically underrepresented students and their social mobility. On the other hand, existing concerns about affirmative action programs "displacing" other qualified students or leading to a "mismatch" of underrepresented students at higher-quality institutions compared to the institutions they would have enrolled at otherwise carry over to guaranteed admissions.[8, 11, 18] Therefore, previous literature on guaranteed admission programs studies not only the programs' effects on college enrollment, graduation rates, and future earnings but also which demographics in particular are benefiting, or potentially harmed, the most under such policies.

The most studied guaranteed admission program is the Texas Top Ten Percent Program (TTP). After the University of Texas's consideration of race in college admission decisions was deemed unconstitutional in 1996, Texas lawmakers introduced the TTP as an attempt to maintain diversity in higher education, providing guaranteed admission to any Texas public university to Texan students who rank in the top 10 percent of their high school class beginning with the class of 1998.[8, C] Since the inception of the TTP, students who graduate from high schools with historically low representation in the University of Texas (UT) schools, such as high schools with large proportions of students who live under the poverty line, receive free or reduced lunch, or identify as an underrepresented minority, have seen an increase in enrollment in the UT system.[19] Past research also finds that students respond to the TTP as public universities like the

University of Texas at Austin (UT Austin) and Texas A&M University saw an increase in applications while competing private institutions like Rice University and Southern Methodist University saw a decline in applications after the implementation of the TTP.[20]

Black *et al.* (2023) expand upon these previous findings by exploring the "displacement" and "mismatch" questions using the Texas public flagship university, UT Austin.[8] They find that not only were underrepresented students more likely to enroll at UT Austin, but they were also more likely to graduate from UT Austin and earn higher earnings under the TTP. This provides evidence against concerns of a potential "mismatch" of underrepresented minorities at high-quality institutions and suggests that the TTP has positive impacts on income mobility. Although they did find that this policy displaced students who attended high schools with historically high enrollment rates at UT Austin but did not qualify for the TTP, the displaced students' eventual college graduation rates and post-graduate earnings were not negatively impacted.

California introduced a similar policy, Eligibility in the Local Context (ELC), in 2001, guaranteeing students who graduate in the top four percent of a California high school admission to at least one University of California (UC) institution.[11,D] Bleemer (2021) found that the ELC affected enrollment at four UC campuses in particular, henceforth referred to as the "Absorbing" UCs: Davis, Irvine, Santa Barbara, and San Diego.[11] Students who graduated from the bottom half of Californian high schools by SAT score were more likely to enroll at and graduate from Absorbing UCs and less likely to enroll at less selective UCs, a CSU, or a California community college. These students were also more likely to identify as Black or Hispanic and more likely to come from families with below-median incomes, providing further evidence against the "mismatch" theory.

While the TTP and ELC target high-achieving students through their minimum class rank requirement, Idaho established a direct admissions system in 2015 that determined admissions using a student's ACT or SAT completion status and GPA instead.[12] All Idaho high school graduates were either guaranteed admission to a group of six colleges or a group of eight colleges (both of which consisted of a mixture of two-year and four-year institutions) depending on their ACT/SAT completion status, number of high school credits, and GPA.[12] As a result of this policy, college enrollment rates increased significantly for first-time in-state undergraduates, concentrating primarily among two-year, open-access institutions with no significant effects on the enrollment of Pell-eligible students.[12] This finding presents a new perspective where guaranteed admission policies that expand their focus beyond high-achieving students may be more effective in encouraging students to consider pursuing a guaranteed postsecondary education (*i.e.*, a guaranteed two-year institution in this case) and thus increasing the overall college enrollment rate, whereas top percent policies like the TTP and ELC may be more effective in improving the type of institution high-achieving underrepresented students enroll at.

The CSU System and the CSUSM MOUs

CSUSM is one of 23 campuses in the larger California State University (CSU) system, one of two public university systems in California (the other being the University of California). As of Fall 2020, CSUSM had an enrollment of 16,367 students, representing 3.27 percent of the total CSU enrollment.[E] Among them, 15,040 (91.9 percent) were undergraduate students, 10,145 (62 percent) identified as female, and 9,162 (56 percent) identified as an underrepresented minority,[F] which all occurred in higher proportions than the overall CSU population. Remarkably, the CSU system as a whole has a higher enrollment of underrepresented and low-income students compared to other four-year colleges.[14]

To apply to the CSU and the UC systems, students must complete 15 yearlong high school courses, known as the A-G courses, with a letter grade of "C" or above.[15, 16, 21] The CSU campuses share one application, in which admission is determined by students' high school courses and grades and SAT or ACT exam scores.[15, 16, G] Notably, the CSUs do not require any personal statements or essays or inquire about extracurricular involvement in their application,[15–17, H] streamlining the application process.

Between the two California public university systems, the CSU system has a stronger focus on serving its local communities by providing priority admission to their surrounding school districts and counties.[13] In particular, CSUSM's local admission area covers 23 high school districts in the counties of Orange, Riverside, and San Diego in Southern California.[23,I] Students from these local area school districts have priority placement in CSUSM's impacted majors (which change annually) if they meet the general CSUSM admission requirements.[24]

In addition to providing priority admission to its local school districts, as of 2022, CSUSM has also signed Memorandums of Understanding with 10 school districts in its local admission area, known as their partner districts or "The Alliance".[25] Starting between the classes of 2009 to 2019, high school students who graduate from a CSUSM partner school district are guaranteed admission to CSUSM if they[J]

- complete the A-G courses with a grade of "C" or higher;
- achieve a passing score on the English Placement Test (EPT) and Entry Level Math (ELM);[K]
- take the SAT Reasoning Test (SAT I) or ACT exam (no minimum score required); and
- graduate with a minimum cumulative GPA of 3.0.[27–36,L]

Table 1 compares the 10 school districts that have signed MOUs with CSUSM. Notably, the school districts in the Alliance require students to complete most of the A-G courses as a graduation requirement,[37–46] assisting students with meeting the CSUSM MOU requirements. This paper focuses on two of the 10 school districts where the author could obtain data: Murrieta Valley Unified School District (MVUSD) and Vista Unified School District (VUSD).

METHODS AND PROCEDURES

Data

The author observes individual-level student data obtained directly from the two districts studied in this paper, which consist of 14,246 graduates between 2016 to 2022 from Murrieta Valley Unified School District (MVUSD) and 6,945 graduates between 2018[M] to 2022 from Vista Unified School District (VUSD). The two districts used a combination of data from the National Student Clearinghouse (NSC) to obtain college enrollment information along with the California Longitudinal Pupil Achievement Data System (CALPADS) and district records of student surveys and performance to obtain student high school performance and demographic information. The classes of 2020 to 2022 are omitted from the analysis due to extremely low SAT/ACT completion rates during the COVID-19 pandemic.[N] In addition, the uncertainty surrounding online learning may have affected students' decisions to pursue higher education. The MVUSD class of 2016 is also omitted from the main analysis since they graduated before the CSUSM MOUs went into effect for that district.

The restricted data (to classes of 2017 to 2019 for MVUSD and 2018 to 2019 for VUSD) contains information on 9,032 (6,112 from MVUSD and 2,920 from VUSD) students' high school performance (cumulative GPA at the time of graduation and standardized tests taken), the first postsecondary institution in the U.S. enrolled at after high school (if any), and demographic information (race, gender, and parents' highest level of educational attainment) (See **Table 2**). The data also includes free and reduced lunch status for MVUSD and whether a student is considered socioeconomically disadvantaged for VUSD. These two variables are used to create a general low-income variable for students who are on free and reduced lunch status or are considered socioeconomically disadvantaged. Lastly, this data is combined with classifications of each postsecondary institution as a two-year or four-year institution from the Integrated Postsecondary Education Data System (IPEDS).

School District	County	First Graduating Class Impacted by MOU	A-G Course Requirements Included in District Graduation Requirements						
			A. History (2 years)	B. English (4 years)	C. Math (3 years)	D. Science (2 years)	E. Language other than English (2 years)	F. Visual and performing arts (1 year)	G. College-preparatory elective (1 year)
Carlsbad Unified	San Diego	2017	✓	✓	✓	✓	✓	✓	✓
Escondido Union	San Diego	2011	✓	✓		✓			✓
Fallbrook Union High	San Diego	2015	✓	✓	✓	✓			✓
Lake Elsinore Unified	Riverside	2019	✓	✓	✓	✓			✓
Murrieta Valley Unified	Riverside	2017	✓	✓	✓	✓		✓	✓
Oceanside Unified	San Diego	2017	✓	✓	✓	✓	✓	✓	✓
San Marcos Unified	San Diego	2009	✓	✓	✓	✓	✓	✓	✓
Temecula Valley Unified	Riverside	2014-15	✓	✓	✓	✓			✓
Valley Center-Pauma Unified	San Diego	2011	✓	✓	✓	✓			✓
Vista Unified	San Diego	2017	✓	✓	✓	✓			✓

Table 1. Comparisons of Districts in the CSUSM Alliance. This table lists the ten school districts who have signed a guaranteed admission MOU with CSUSM along with the county they are located in, the first graduating class eligible for the MOU, and the A-G courses that students satisfy in order to graduate from each district. The graduation requirements reflect current graduation requirements. Some requirements may have changed since the introduction of the MOUs. Some districts require students to take one year of any fine art, which could satisfy either one year of visual/performing arts or one year of world language. The author considers these situations as not required to satisfy both the language other than English requirement and the visual and performing arts requirement. The paper uses a binary variable of whether or not a student satisfied the A-G courses given directly by VUSD to determine a student's eligibility for the CSUSM MOUs.[37–46]

Notably, the dataset does not include whether students completed the A-G course requirements for MVUSD students. However, MVUSD's graduation requirements are only a one-year-long course difference away from the A-G course requirements,[42] and the majority of MVUSD graduates (65.1 percent for the class of 2020) satisfy the A-G requirement.[47] In addition, students who complete the A-G requirements are likely more interested in attending a four-year institution, especially a UC or CSU institution, suggesting that the analysis using all MVUSD students rather than the sample of MVUSD students who completed the A-G requirements is likely an underestimate of the true effect of the CSUSM MOUs.[O]

The dataset also does not include whether students obtained a passing score on the EPT and ELM exams or satisfied one of the exemptions for both school districts. Students can fulfill the EPT and ELM requirements through many other means, including but not limited to

- obtaining a minimum cumulative GPA of 3.7;
- obtaining a minimum cumulative GPA of 3.0 and enrolling in a year-long senior English class (for EPT);
- obtaining a minimum cumulative math GPA of 3.0 and enrolling in a year-long senior math class (for ELM); or
- achieving a sufficiently high SAT I critical reading score, ACT English score, Advanced Placement (AP) English (Language and Composition or Literature and Composition), AP Statistics, or AP Calculus (AB or BC) exam scores.[26]

Students also have the opportunity to complete additional coursework to prepare them for the curriculum at CSUSM.[26] Therefore, this paper assumes most students are exempt from the EPT/ELM requirement or have the opportunity to fulfill the requirement through additional coursework.

Summary Statistics of Full and RD Samples

Table 2 describes summary statistics for the 9,032 high school graduates from MVUSD and VUSD between 2017 to 2019. The first column presents the summary statistics for the full sample of high school graduates from the two districts, and columns two and three present the values broken down by district. 71 percent of all graduates enrolled at a postsecondary institution, 34 percent enrolled at a four-year college, and 6.5 percent enrolled at CSUSM after high school. 50 percent of all graduates are female, 41 percent identify as Hispanic, 39 percent identify as white, nine percent identify as Asian or Pacific Islander, five percent identify as Black, and less than one percent identify as American Indian or Alaskan Native. 48 percent of all graduates are first-generation college students[P] and 38 percent come from a low-income background. VUSD has a higher proportion of Hispanic students (57 percent), first-generation college students (55 percent), and low-income students (63 percent) compared to MVUSD (33, 45, and 26 percent respectively), and a lower percentage of students who enrolled at any postsecondary institution (62 percent) or any four-year college (27 percent) compared to MVUSD (75 and 38 percent respectively).

Column four of **Table 2** displays the summary statistics for the RD Sample, and columns five and six present the summary statistics for the RD sample broken down by district. In this paper, the RD sample refers to graduates from 2017 to 2019 for MVUSD and 2018 to 2019 for VUSD who satisfied the A-G course requirements (VUSD only), took the SAT I or ACT exam, and graduated with a GPA between 2.73 to 3.43, which is the data-driven selected bandwidth (described in the next section). The overall RD sample is less likely to be first-generation or low-income, but otherwise demographically very similar to the overall sample of students. Because the sample of students near the 3.0 GPA is positively selected in their ability and in their interest in pursuing higher education (demonstrated through completing the SAT I or ACT exam) relative to the average student, the RD sample also has much higher college enrollment rates compared to the general sample of high school graduates from MVUSD and VUSD, with 88 percent enrolling at any postsecondary institution, 52 percent enrolling at a four-year institution, and 18 percent enrolling at CSUSM after high school. Similar to the overall sample, MVUSD students in the RD sample have higher enrollment rates at two-year and four-year colleges compared to VUSD.

	All Graduates			RD Sample		
	Overall *(N = 9032)*	MVUSD *(N = 6112)*	VUSD *(N = 2920)*	Overall *(N = 1616)*	MVUSD *(N = 1325)*	VUSD (N = 291)
	(1)	(2)	(3)	(4)	(5)	(6)
Demographic Variables						
% Female	50.32	48.51	54.11	51.42	50.34	56.36
% American Indian or Alaskan Native	0.29	0.29	0.27	0.25	0.30	0.00
% Asian or Pacific Islander	9.23	10.31	6.99	9.96	10.57	7.22
% Black	5.12	6.32	2.60	7.05	7.77	3.78
% Hispanic	40.77	33.12	56.78	37.31	33.81	53.26
% White	39.19	43.82	29.52	38.68	40.00	32.65
% First-Generation College Students	48.33	45.12	55.03	45.30	44.00	51.20
% Low-Income	38.04	25.93	63.39	30.20	24.83	54.64
High School Performance						
Average GPA	3.03	3.08	2.92	3.13	3.13	3.15
% Took SAT Reasoning Test or ACT	53.41	56.22	47.53	100.00	100.00	100.00
% Satisfied A-G Requirement	*NA*	*NA*	44.35	*NA*	*NA*	100.00
% Satisfied EPT/ELM Requirement	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
% Eligible for Guaranteed Admission	40.00	43.49	32.71	72.59	72.38	73.54
College Enrollment Rates						
% Any Postsecondary	71.08	75.44	61.95	88.12	90.34	78.01
% Any Four-year	34.32	37.75	27.16	52.10	53.74	44.67
% Any Two-year	36.76	37.70	34.79	36.01	36.60	33.33
% CSUSM	6.53	6.54	6.51	18.07	18.04	18.21
% Any CSU	12.75	13.47	11.27	28.40	28.15	29.55
% Any UC	6.71	6.92	6.27	1.42	1.36	1.72

Table 2. Descriptive Statistics of Alliance Students. This table presents the summary statistics for the full sample of MVUSD graduates from 2017 to 2019 and VUSD graduates from 2018 to 2019 along with the summary statistics for the RD sample only. The RD sample consists of students who satisfied the A-G requirement (VUSD only), took the SAT I or ACT exam, and have a GPA between 2.73 to 3.43.

Regression Discontinuity Design

This paper evaluates the effect of the CSUSM MOUs on postsecondary enrollment rates using a regression discontinuity design around the 3.0 GPA cutoff conditioned on students who completed the A-G course requirements (VUSD only) and the SAT I or ACT exam. The effect is estimated through β_1 from a linear regression model:

$$y_i = \beta_0 + \beta_1 \cdot \mathbb{1}(GPA_i \geq 3) + \beta_2 \cdot GPA_i + \epsilon_i \qquad \textbf{Equation 1.}$$

where y_i represents the outcome variable of interest, $\mathbb{1}(GPA_i \geq 3)$ is a binary variable that returns true if a student has a GPA above the cutoff of 3.0, and GPA_i is the student's GPA.

This paper focuses on five outcome measures of college enrollment rates between different types of institutions: any postsecondary, four-year institutions only, two-year institutions only, CSUSM only, and any CSU. Although the CSUSM MOUs only directly impact admission to CSUSM, the author considers if the program increased the proportion of students who pursue a postsecondary in general and if it changes the type of institution students enroll at (*i.e.*, a shift from two-year institutions to four-year institutions). In addition, since the CSUs all share one application, this paper evaluates if the program may have encouraged students to apply to and enroll at other CSU campuses. The author then explores heterogeneity in the enrollment outcomes by parents' education level, gender, race, and income status using separate estimates of **Equation 1** for each group of students.

The analysis follows the data-driven bandwidth selection strategy described in Calonico *et al.* (2014),[48] which recommends a bandwidth (BW) ranging from 2.73 to 3.43 when the outcome variable is any postsecondary. Therefore, the analysis focuses on the sample of graduates from 2017 to 2019 for MVUSD and 2018 to 2019 for VUSD who satisfied

the A-G course requirements (VUSD only), took the SAT I or ACT exam, and graduated with a GPA between 2.73 to 3.43 (the "RD sample").

Validity of the RD Model

A key assumption of the RD model is that students cannot manipulate their grades to be just above the GPA cutoff. This assumption is checked in **Figure 1**, which plots the distribution of student GPAs for those who are eligible for the CSUSM MOUs (completed the A-G requirement for VUSD and completed the SAT/ACT requirement for both districts) compared to those who are ineligible. Following the McCrary (2008) test of distributional discontinuity,[49] there are no significant changes ($p=0.18$) in the density of eligible students just above the 3.0 GPA cutoff, validating the RD model.

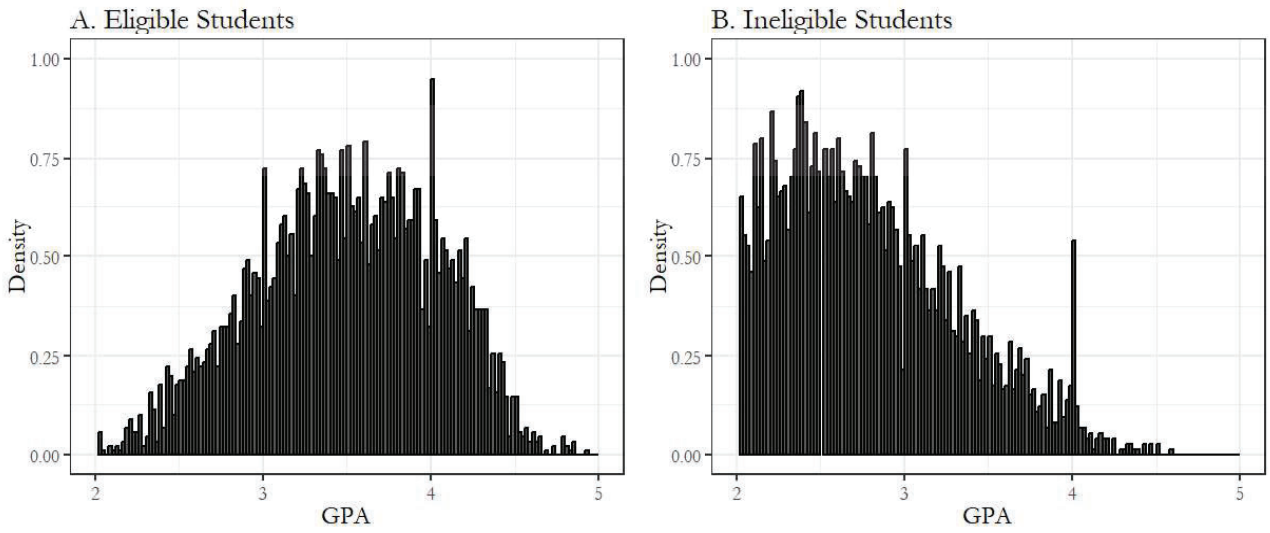

Figure 1. Distribution of Student GPAs. This figure presents histograms of the distribution of student GPAs using a bin size of 0.02. Eligible students is restricted to graduates from 2017 to 2019 for MVUSD and 2018 to 2019 for VUSD who have satisfied the A-G course requirement (VUSD only) and took the SAT I or ACT exams. Ineligible students is restricted to the remaining graduates from 2017 to 2019 for MVUSD and 2018 to 2019 for VUSD who have not taken the SAT I or ACT exams or have not satisfied the A-G course requirement (VUSD only), thereby making them ineligible for the CSUSM MOUs. Students with a GPA less than 2.0 are not depicted in the graph.

However, the histogram distribution in **Figure 1** visually suggests a slight bunching just above the 3.0 GPA cutoff for both eligible (insignificant) and ineligible (significant at the one percent level) students. As Zimmerman (2014) argues,[50] bunching at the 3.0 GPA cutoff may be traced to other factors, making the standard test of distributional discontinuity unhelpful. For instance, a GPA of 3.0 corresponds to an average, unweighted grade of "B", which is a benchmark grade level that teachers may be more likely to assign or students may be more likely to strive for. The jumps in the density at other non-cutoff GPA points (*e.g.*, at a GPA of 4.0), especially for students who are ineligible for the CSUSM MOUs, suggest that these other factors may be important. Therefore, the author conducts an additional visual test following Zimmerman (2014),[50] which examines the continuity in the density ratios of the conditional densities to the unconditional density. The density ratios are presented in **Figure 2** for four different conditioning groups: first-generation, white, female, and low-income students. Consistent with a valid RD, there are no discontinuous jumps in density ratios around the 3.0 GPA cutoff.

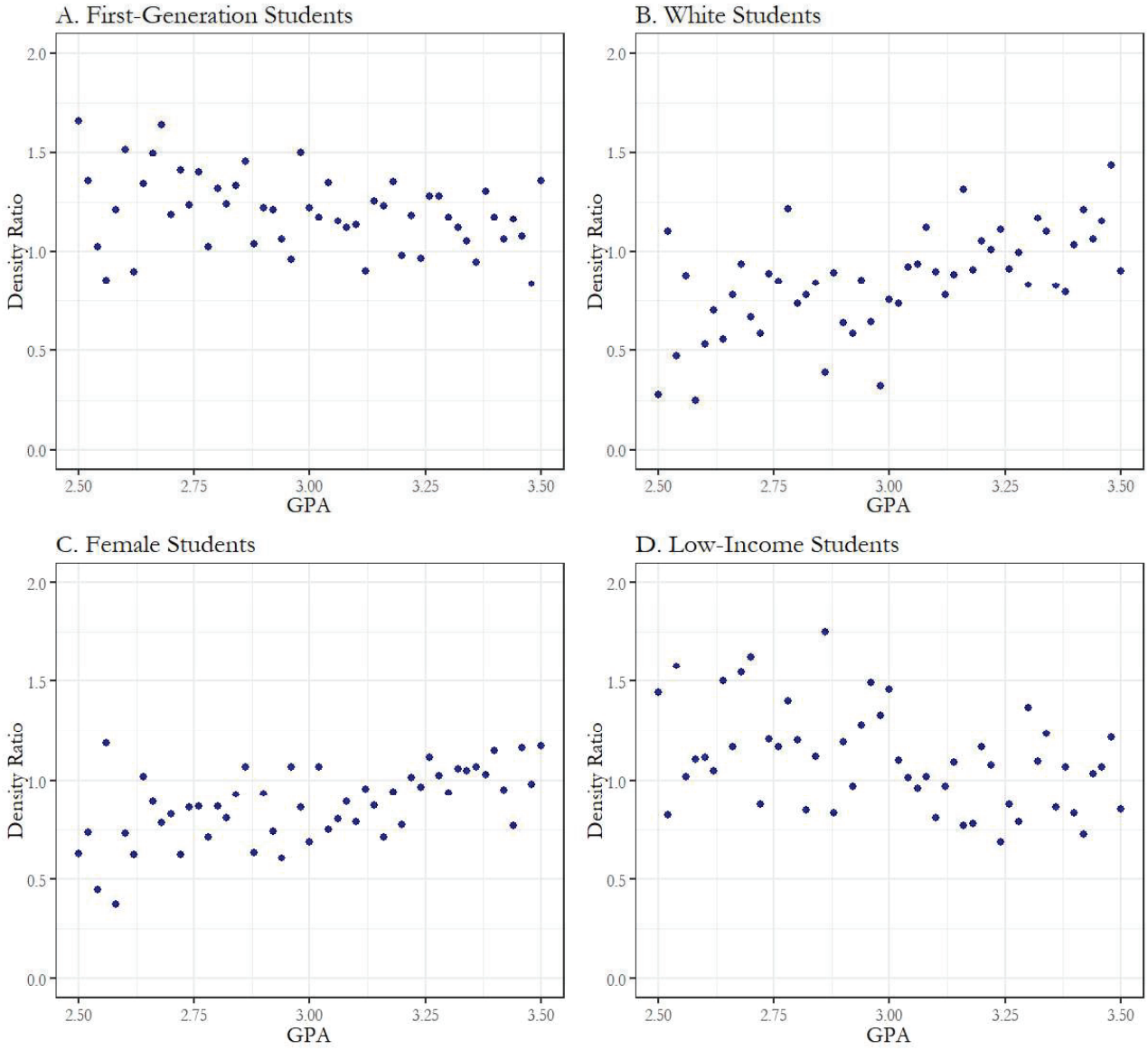

Figure 2. Density Ratios of Student GPAs. This figure presents ratios of the conditional to unconditional densities of student GPAs using a bin size of 0.02. Four different conditioning variables are used: first-generation, white, female, and low-income students. The sample is restricted to graduates from 2017 to 2019 for MVUSD and 2018 to 2019 for VUSD who have satisfied the A-G course requirement (VUSD only) and took the SAT I or ACT exams.

In addition, the author checks if observable covariates are balanced across the 3.0 GPA cutoff. **Figure 3** plots the proportion of students under each covariate across the 3.0 GPA cutoff and **Table 3** presents the corresponding linear regression estimates. There are no significant differences in first-generation and low-income status across the GPA cutoff, but there are higher proportions of white students and lower proportions of female students just above the GPA cutoff, suggesting that white and male students may be more likely to bargain for a 3.0 GPA in lieu of a slightly lower GPA.Q

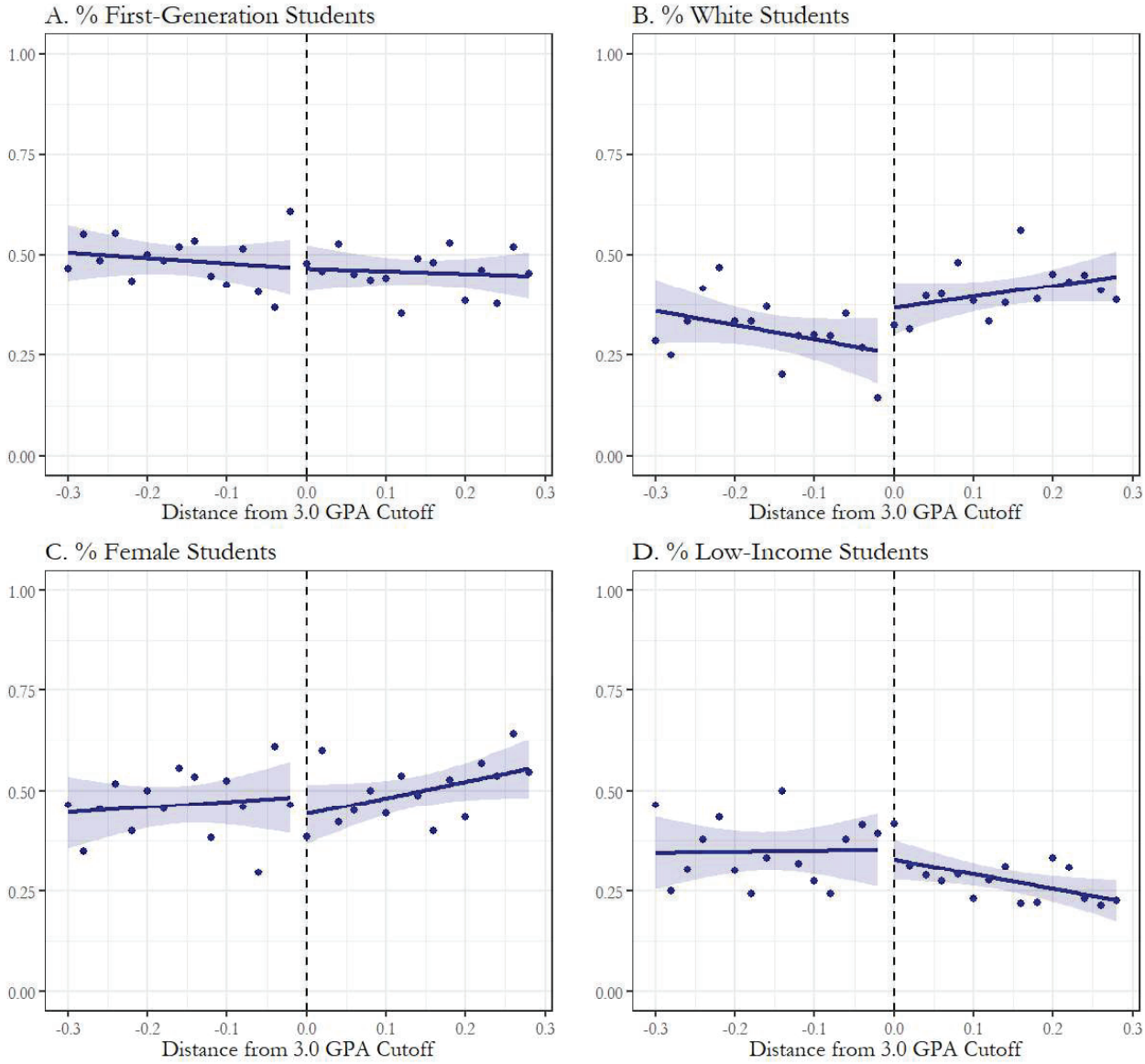

Figure 3. Covariate Balance. This figure presents binned scatterplots and linear best-fit lines of the proportions of demographic variables of MVUSD and VUSD graduates by their GPA distance to the 3.0 GPA cutoff using a bin size of 0.02. The sample is restricted to graduates from 2017 to 2019 for MVUSD and 2018 to 2019 for VUSD who have satisfied the A-G course requirement (VUSD only), took the SAT I or ACT exams, and have a GPA within 0.3 of the GPA cutoff.

	% First-Generation	% White	% Female	% Low-Income
	(1)	(2)	(3)	(4)
Above 3.0 GPA Cutoff	0.004107	0.081321*	-0.08074*	-0.02792
	(0.047872)	(0.046659)	(0.047838)	(0.044102)
Control Mean	0.464209	0.31947176	0.51305048	0.3346032

Table 3. Covariate Balance (BW: [2.73, 3.43]). This table presents the estimated difference in the proportion of a demographic variable just above the 3.0 GPA cutoff using a linear regression. The sample is restricted to the RD sample (graduates from 2017 to 2019 for MVUSD and 2018 to 2019 for VUSD who have satisfied the A-G course requirement (VUSD only), took the SAT I or ACT exam, and have a GPA between 2.73 to 3.43. *: p-value < .1; **: p-value < .05; ***: p-value < .01.

Lastly, the author conducts a placebo exercise using data from the graduating class of 2016 for MVUSD. Since the first MVUSD graduating class eligible for the CSUSM MOU was the graduating class of 2017, the class of 2016 should have experienced no discontinuous jumps in college enrollment around the 3.0 GPA cutoff. As expected, there are no significant increases in enrollment at any postsecondary, any four-year institution, CSUSM, or any CSU nor any significant decreases in enrollment at any two-year institutions for the placebo sample. Instead, prior to the implementation of the CSUSM MOUs, there is a slight (but insignificant) decrease in four-year and CSUSM enrollment and an increase in two-year enrollment across the 3.0 GPA cutoff (See **Appendix Table A1** and **Appendix Figure A2**).[R] In contrast, the MVUSD graduating classes of 2017 to 2019 have similar enrollment trends compared to the full sample of MVUSD and VUSD graduates that will be outlined in **Table 4** (See **Appendix Table A2**).[S]

RESULTS

Figure 4 plots each outcome variable with the distance from the 3.0 GPA cutoff as the running variable for the full RD sample. As expected, there does not appear to be a noticeable change in postsecondary enrollment rates around the 3.0 GPA cutoff in Panel A, due to the already high baseline college enrollment rate of 87 percent. Despite the little change in college enrollment, Panels B and C reveal a slight change in the type of institution students enrolled at. Above the 3.0 GPA cutoff, there is a 6.8 percentage point increase in four-year college enrollment, which is a 15 percent gain from the control mean, and a 5.9 percentage point decrease (14 percent from the control mean) in two-year enrollment, but both estimates are not statistically significant at conventional levels (See **Table 4**). These trends suggest that the MOUs encouraged students who were already enrolling in postsecondary institutions to shift away from two-year institutions towards four-year institutions. Panels D and E show that this increase in four-year enrollment is driven by increased enrollment at CSUSM and at the CSU system in general, where attendance increased by 6.1 percentage points at CSUSM (from a base of 15 percent) and by 7.7 percentage points at any CSU (from a base of 23 percent).[T]

Heterogeneity by Baseline Sociodemographic Characteristics

Next, the paper analyzes if the baseline results differed by sociodemographic characteristics as guaranteed admission programs traditionally benefited underrepresented students the most after the banning of affirmative action in college admissions. Furthermore, nonwhite (in particular, Black and Hispanic) students, low-income students, and first-generation college students are more likely to enroll at two-year institutions compared to their counterparts, so they may be more likely to shift from two-year to four-year institutions under the CSUSM MOUs.[14, 52] Moreover, the CSU system serves a more diverse community of underrepresented and low-income students compared to other four-year colleges, potentially making guaranteed admission to CSUSM more appealing to these groups of students.[14]

Breaking down the effects by baseline sociodemographic characteristics reveals that the significant increases in enrollment at CSUSM and at any CSU are driven mostly by first-generation, nonwhite, and low-income students. The results, summarized in columns two through nine of **Table 4**, are also presented in **Figures 5 – 8**. Similar to the main baseline results, first-generation, nonwhite, and low-income students see higher, but insignificant, four-year enrollment rates and lower, but insignificant (with the exception of first-generation students), two-year enrollment rates driven mostly by significant increases in CSUSM and CSU enrollment rates.

Figure 5 plots each enrollment outcome by first-generation status and columns two and three of **Table 4** present the corresponding regression estimates. While non-first-generation students see little impact on enrollment across all categories, first-generation students drive the results from the full sample. Below the 3.0 GPA cutoff, first-generation students are less likely to enroll at a four-year institution or at any CSU and more likely to enroll at a two-year compared to their non-first-generation peers. However, first-generation students just above the cutoff are 10.3 percentage points (21 percent gain from the control mean) more likely to enroll at a four-year institution (not statistically significant), 12.1 percentage points (56 percent) more likely to enroll at any CSU, and 12.2 percentage points (27 percent) less likely to enroll at any two-year institution. Thus, above the 3.0 GPA cutoff, the CSUSM MOUs closed the gap between first-generation and non-first-generation four-year college enrollment rates.

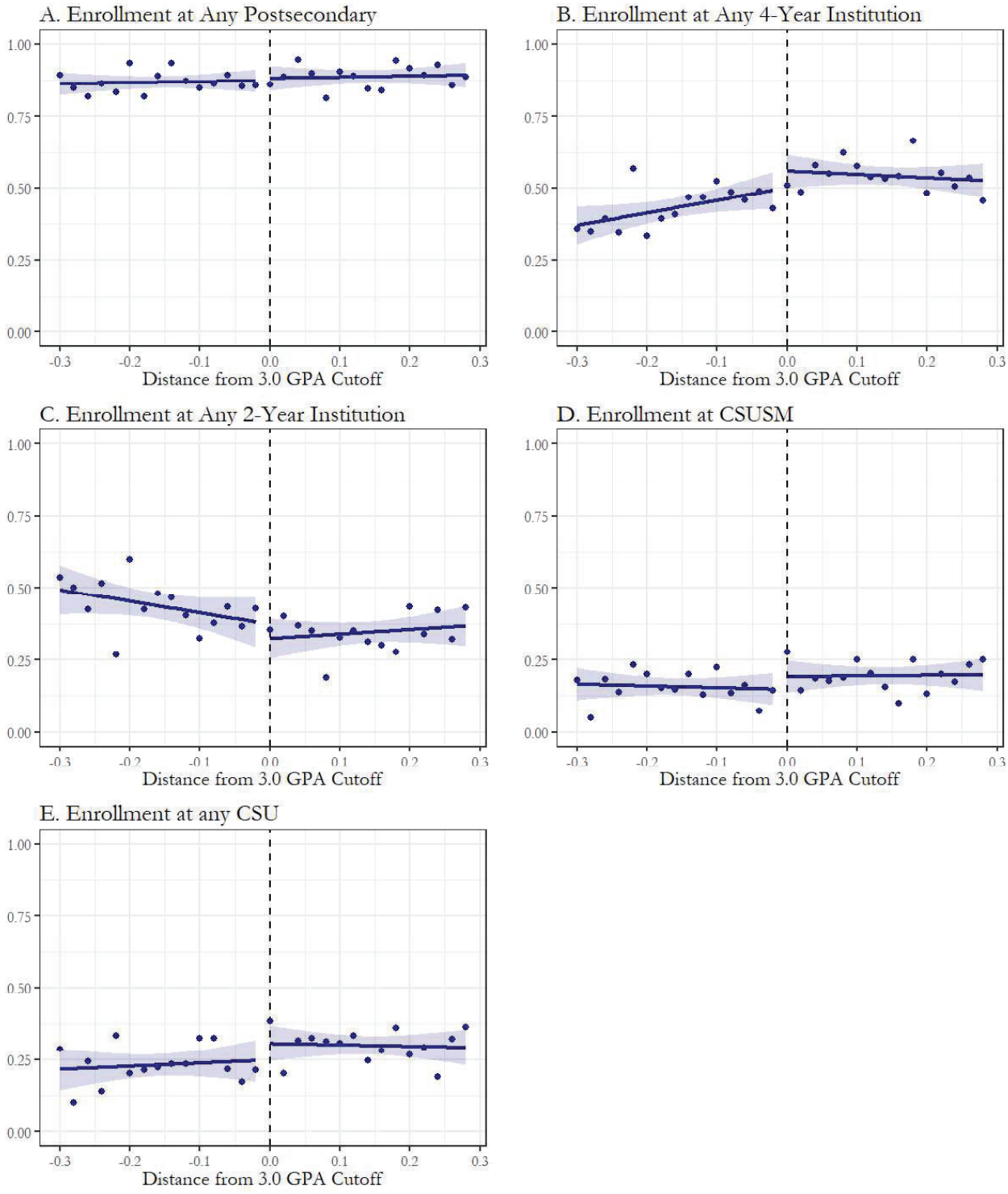

Figure 4. Enrollment Rates of the Full Sample. This figure presents binned scatterplots and linear best-fit lines of the enrollment outcomes of MVUSD and VUSD graduates by their GPA distance to the 3.0 GPA cutoff using a bin size of 0.02. The sample is restricted to graduates from 2017 to 2019 for MVUSD and 2018 to 2019 for VUSD who have satisfied the A-G course requirement (VUSD only), took the SAT I or ACT exams, and have a GPA within 0.3 of the GPA cutoff.

		By First-Gen Status		By Race		By Gender		By Low-Income Status	
	Full Sample *(N = 1616)*	First-Generation *(N = 732)*	Not First-Generation *(N = 884)*	Nonwhite *(N = 991)*	White *(N = 625)*	Female *(N = 831)*	Male *(N = 785)*	Low-Income *(N = 488)*	Not Low-Income *(N = 1128)*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Any Postsecondary									
RD Estimate	0.009261	-0.01873	0.032598	0.011724	0.001572	-0.01418	0.030348	0.034573	-0.00649
	(0.031122)	(0.047284)	(0.041285)	(0.040115)	(0.049594)	(0.043893)	(0.04437)	(0.065405)	(0.033735)
Control Mean	0.86993956	0.8695248	0.8709822	0.86220374	0.88523314	0.89329966	0.84898232	0.7988356	0.90561328
P Identical		0.411437			0.876876	0.475795		0.534084	
Any Four-year									
RD Estimate	0.068212	0.103219	0.038916	0.034722	0.115682	0.074746	0.074994	0.059694	0.068264
	(0.047858)	(0.070697)	(0.064942)	(0.05942)	(0.08143)	(0.068827)	(0.066751)	(0.084008)	(0.058143)
Control Mean	0.45698954	0.41204546	0.49576752	0.45602672	0.46385	0.47305728	0.43617686	0.4036199	0.48442624
P Identical		0.502932			0.421745	0.997935		0.933141	
Any Two-year									
RD Estimate	-0.05895	-0.12195*	-0.00632	-0.023	-0.11411	-0.08893	-0.04465	-0.02512	-0.07476
	(0.046051)	(0.06888)	(0.061853)	(0.057107)	(0.078447)	(0.06536)	(0.065086)	(0.080558)	(0.056201)
Control Mean	0.412953	0.45747834	0.3751978	0.406176	0.4213762	0.4202404	0.41280646	0.3952316	0.421193
P Identical		0.21079			0.347292	0.631321		0.614372	
CSUSM Only									
RD Estimate	0.061472*	0.06899	0.052972	0.108597**	-0.01843	0.074944	0.05312	0.123677*	0.030105
	(0.03699)	(0.057051)	(0.048159)	(0.048458)	(0.056089)	(0.055355)	(0.049402)	(0.067169)	(0.044283)
Control Mean	0.1503784	0.15321706	0.149754	0.1496738	0.155076	0.1662956	0.1343166	0.1238444	0.1653666
P Identical		0.828854			0.101244	0.768596		0.236286	
Any CSU									
RD Estimate	0.077419*	0.120664*	0.039717	0.133593**	-0.01911	0.090178	0.078822	0.147789**	0.04079
	(0.043302)	(0.064431)	(0.058508)	(0.055366)	(0.068772)	(0.064733)	(0.057648)	(0.074913)	(0.053031)
Control Mean	0.2332672	0.2169588	0.2480834	0.2324222	0.23992902	0.2586636	0.2040666	0.1793032	0.2618932
P Identical		0.351837			0.091993	0.89574		0.247736	

Table 4. RD Estimates by Type of College and Demographic (BW: [2.73, 3.43]). This table presents RD estimates of the effect of eligibility for the CSUSM MOUs on college enrollment rates by postsecondary institution type and demographic following **Equation 1**. The sample is restricted to graduates from 2017 to 2019 for MVUSD and 2018 to 2019 for VUSD who have satisfied the A-G course requirement (VUSD only) and the SAT/ACT completion requirement. Control mean reports estimated baseline enrollment rates for the bin (size = 0.02) below the 3.0 GPA cutoff, calculated as $\beta_0 + \beta_1 \cdot 2.98$ derived from **Equation 1**. P Identical represents p-values for the hypothesis that the coefficients between each pair of demographic groups are identical. For instance, the P Identical value in column two represents the hypothesis that first-generation and non-first-generation students have the same RD estimate. The bandwidth is calculated following Calonico *et al* (2014) and fixed from running the regression for the full sample of students and the outcome of enrollment at any postsecondary.[48] *: p-value < .1; **: p-value < .05; ***: p-value < .01.

Plotting the enrollment outcomes by race reveals there is little difference in the enrollment rates at CSUSM and any CSU of nonwhite and white students before the 3.0 GPA cutoff (See **Figure 6**). However, just above the cutoff, nonwhite students are 10.9 percentage points (73 percent) more likely to enroll at CSUSM and 13.4 percentage points (57 percent) more likely to enroll at any CSU (both of which are significant at the five percent level), whereas white students are not significantly affected by the CSUSM MOUs across all enrollment outcomes (See columns four and five of **Table 4**). This result suggests that although the CSUSM MOUs are not increasing the overall postsecondary or four-year enrollment rates of nonwhite students, the program is changing the type of four-year institutions they are enrolling at towards the CSUs, in particular, towards CSUSM.

Breaking down the effects by gender reveals that the CSUSM MOUs did not affect female and male students differently. **Figure 7**, which plots each enrollment outcome by gender, shows that female students are more likely to enroll at any four-year institution, CSUSM, and any CSU than male students and this trend continued above the 3.0 GPA cutoff. In addition, both female and male students see a general increase in enrollment at four-year institutions, CSUSM, and any CSU and a decrease in enrollment at two-year institutions, but neither group experience significant effects (See columns 6 and 7 of **Table 4**).

Lastly, when breaking down the effects by income, low-income students experience greater enrollment impacts compared to students from higher-income backgrounds. **Figure 8**, which plots each enrollment outcome by income, reveals that low-income students are less likely to enroll at any postsecondary, any four-year institution, at CSUSM, and any CSU compared to non-low-income students below the 3.0 GPA cutoff. Just above the cutoff, low-income students are 12.4 percentage points (100 percent) more likely to enroll at CSUSM and 14.8 percentage points (82 percent) more likely to enroll at any CSU (See columns 8 and 9 of **Table 4**). Thus, the CSUSM MOUs doubled the likelihood of low-income students enrolling at CSUSM and nearly doubled the likelihood of low-income students enrolling at any CSU, closing the income enrollment gap at CSUSM and at CSUs. In addition, both low-income and higher-income students experienced a positive, but insignificant increase in four-year enrollment and a negative, but insignificant decrease in two-year enrollment.

Robustness

To verify the robustness of the results, the author runs the analysis with a larger sample of students by increasing the bandwidth size to 0.6 and 0.7 above and below the 3.0 GPA cutoff (roughly twice as large as the data-driven bandwidths) and including the graduating class of 2020. The author also plots each enrollment outcome using a fourth-order polynomial line of best fit (compared to the linear lines of best fits presented above).

When the bandwidth size is increased to 0.6, the estimates all move in the same direction as the main results, though some estimates are insignificant at the 10% level (See **Appendix Table A5**). When the bandwidth size is increased to 0.7, the estimates once again move in the same direction as the main results and more estimates become significant at the 10% level compared to the data-driven bandwidth (See **Appendix Table A6**). Hence, the positive trends in four-year, CSUSM, and CSU enrollment rates and the negative trend in two-year enrollment just above the GPA cutoff are robust to bandwidth size, but the significance levels of the estimates may vary due to the sample size.

When including the graduating class of 2020 in the analysis, the data-driven bandwidth increases slightly to a GPA between 2.74 to 3.44 (a 0.01 increase above and below the 3.0 cutoff). In this new bandwidth, the estimates all move in the same direction as the main results, though estimates for the full sample of students and low-income students become not significant (See **Appendix Table A7**). If the bandwidth is adjusted to 0.6, there are no changes in the direction of the results, but if the bandwidth is increased to 0.7, more estimates become significant compared to the data-driven bandwidths, similar to the effects of changing bandwidths in the original RD sample (See **Appendix Tables A8 – A9**). This suggests that the graduating class of 2020 experienced similar impacts from the CSUSM MOUs as previous

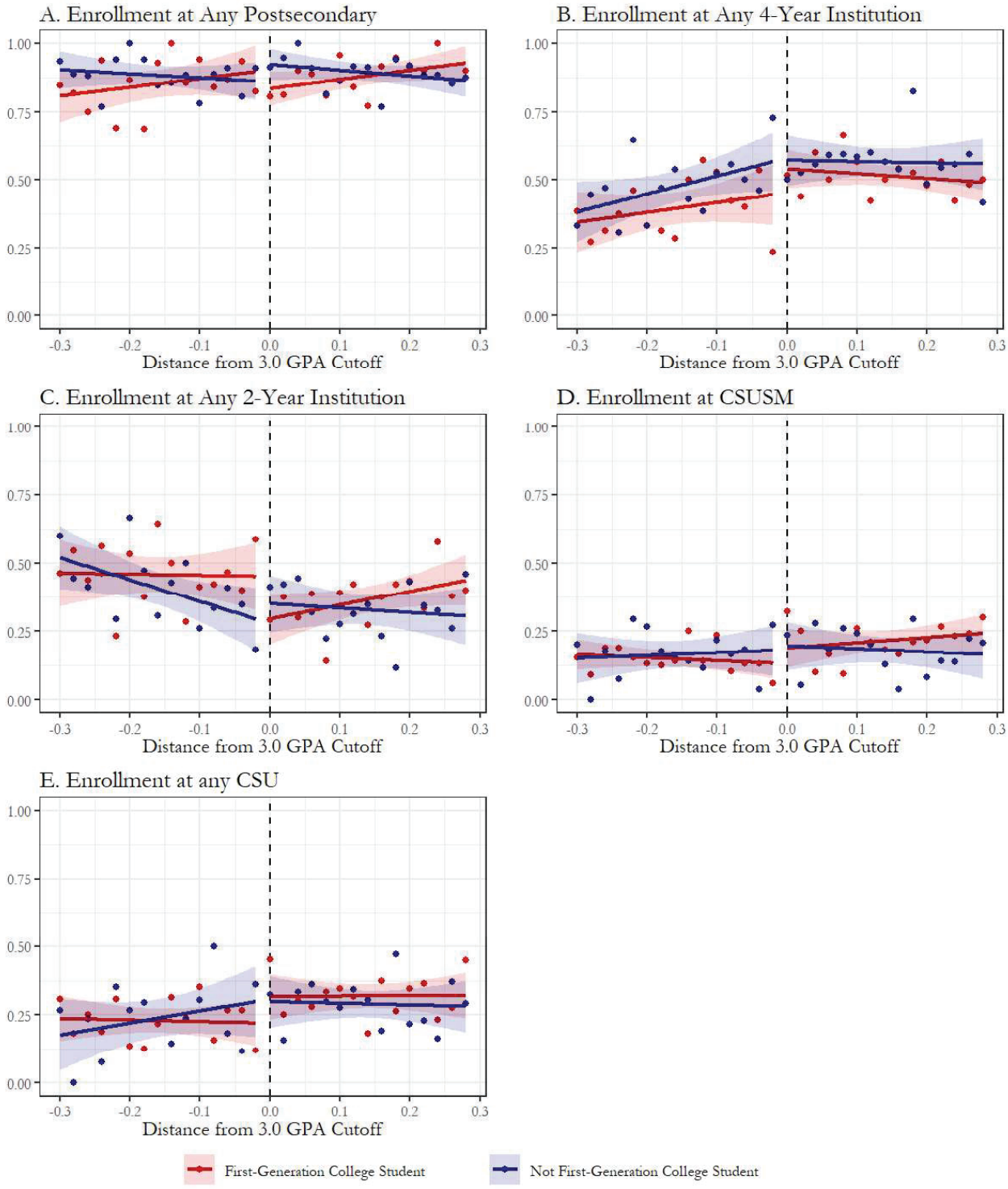

Figure 5. Enrollment Rates by Parents' Educational Attainment. This figure compares binned scatterplots and linear best-fit lines of the enrollment outcomes of first-generation MVUSD and VUSD graduates with non-first-generation graduates by their GPA distance to the 3.0 GPA cutoff using a bin size of 0.02. The sample is restricted to graduates from 2017 to 2019 for MVUSD and 2018 to 2019 for VUSD who have satisfied the A-G course requirement (VUSD only), took the SAT I or ACT exams, and have a GPA within 0.3 of the GPA cutoff.

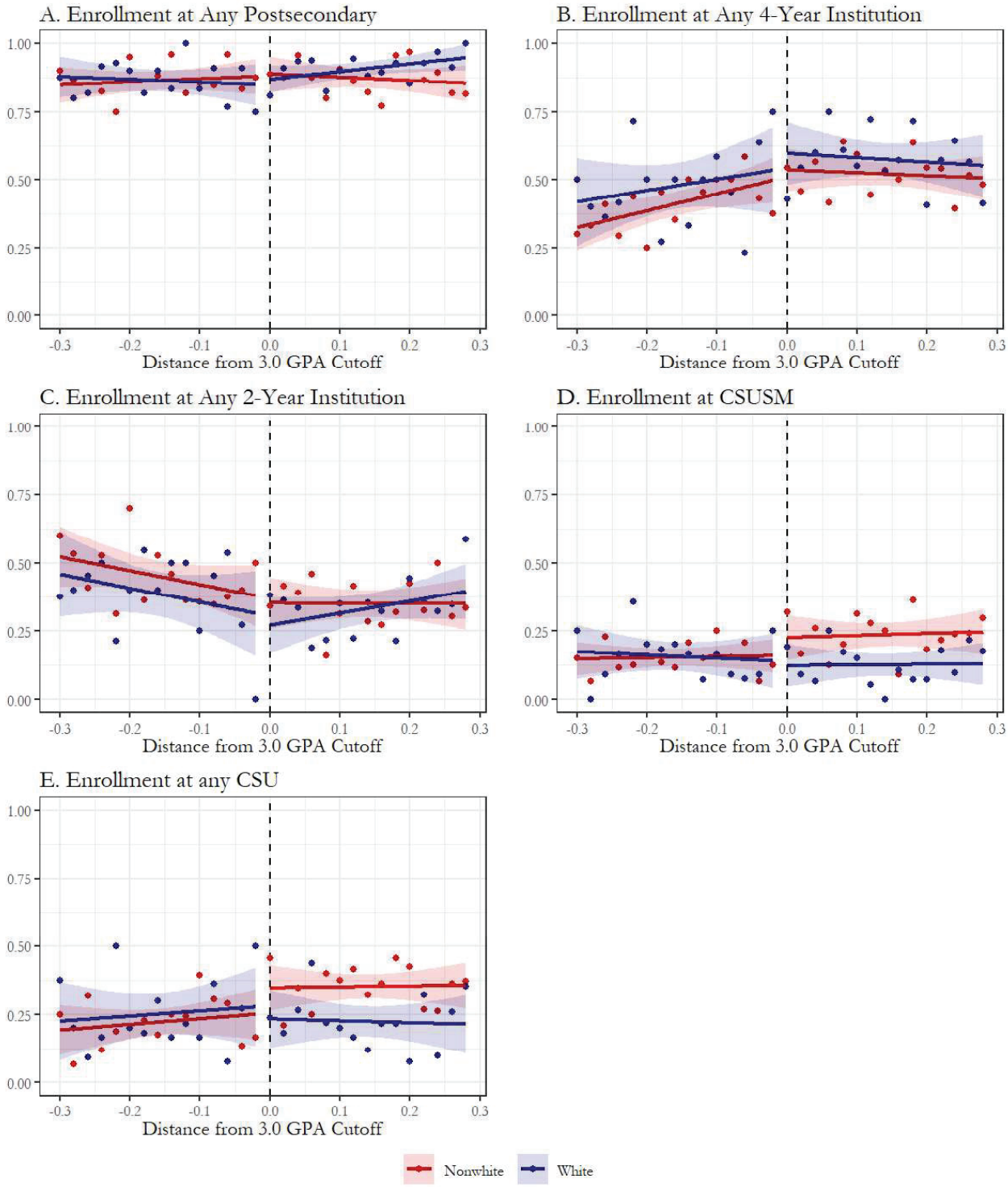

Figure 6. Enrollment Rates by Race. This figure compares binned scatterplots and linear best-fit lines of the enrollment outcomes of nonwhite MVUSD and VUSD graduates with white graduates by their GPA distance to the 3.0 GPA cutoff using a bin size of 0.02. The sample is restricted to graduates from 2017 to 2019 for MVUSD and 2018 to 2019 for VUSD who have satisfied the A-G course requirement (VUSD only), took the SAT I or ACT exams, and have a GPA within 0.3 of the GPA cutoff.

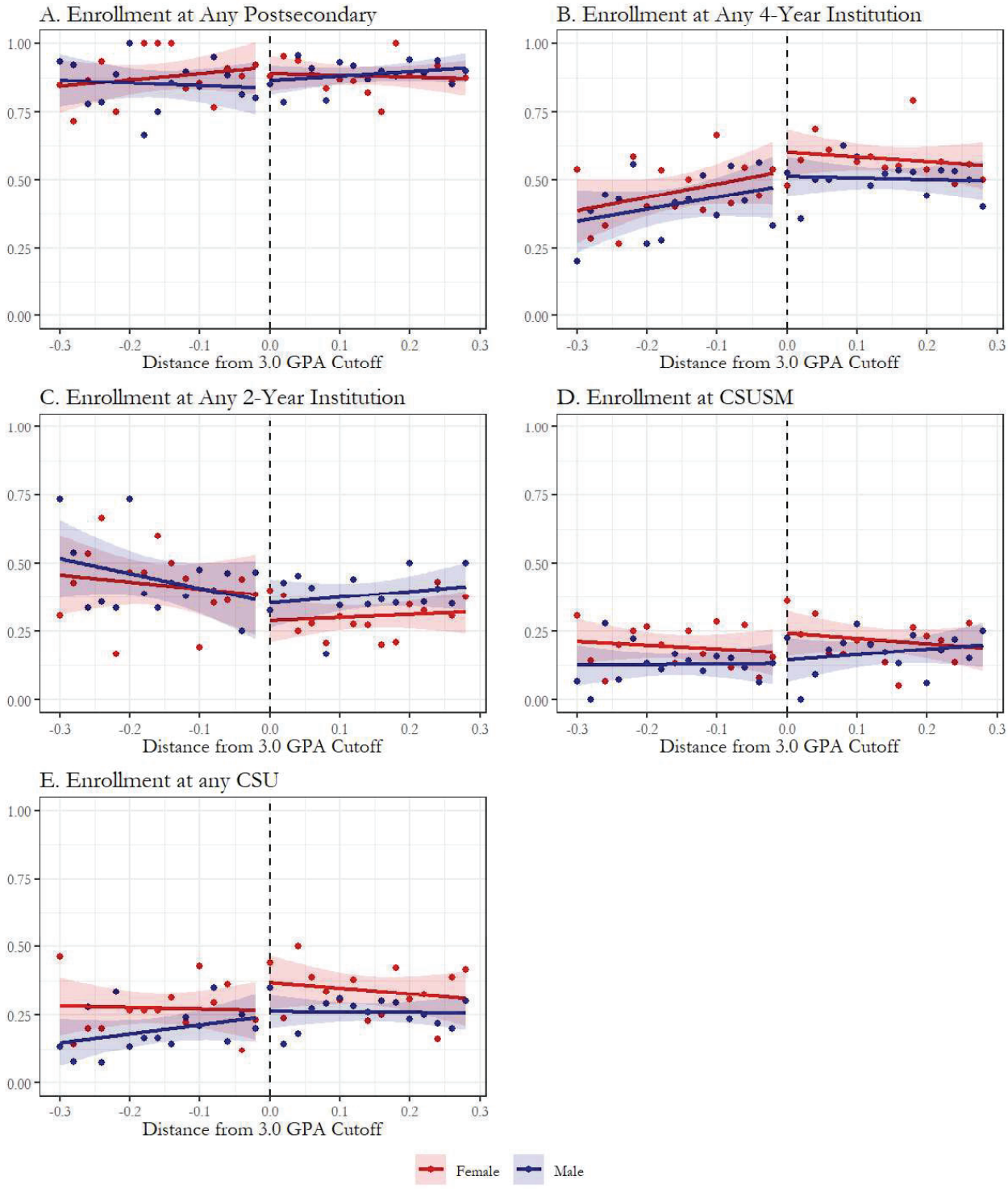

Figure 7. Enrollment Rates by Gender. This figure compares binned scatterplots and linear best-fit lines of the enrollment outcomes of female MVUSD and VUSD graduates with male graduates by their GPA distance to the 3.0 GPA cutoff using a bin size of 0.02. The sample is restricted to graduates from 2017 to 2019 for MVUSD and 2018 to 2019 for VUSD who have satisfied the A-G course requirement (VUSD only), took the SAT I or ACT exams, and have a GPA within 0.3 of the GPA cutoff.

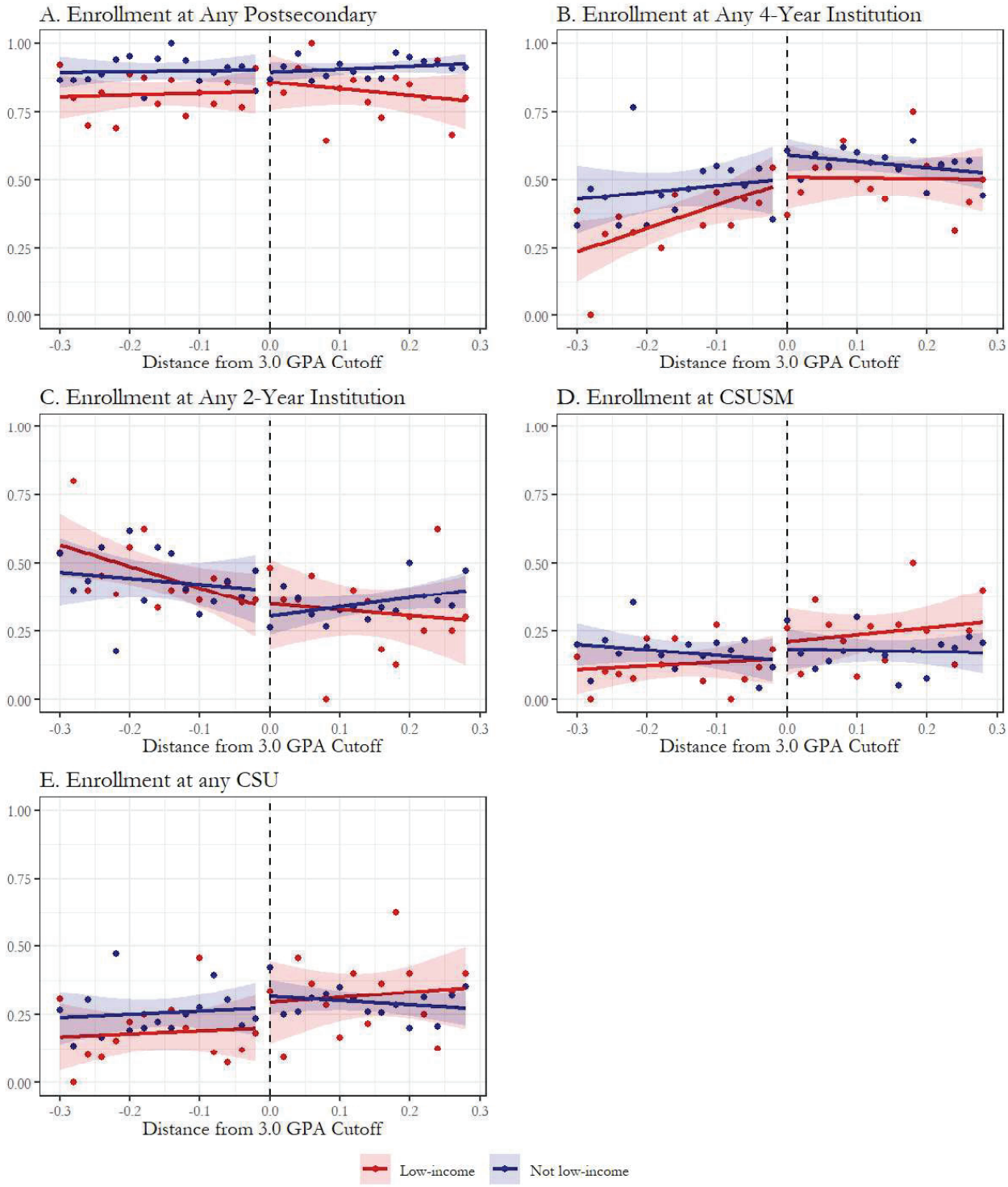

Figure 8. Enrollment Rates by Income. This figure compares binned scatterplots and linear best-fit lines of the enrollment outcomes of low-income MVUSD and VUSD graduates with non-low-income graduates by their GPA distance to the 3.0 GPA cutoff using a bin size of 0.02. The sample is restricted to graduates from 2017 to 2019 for MVUSD and 2018 to 2019 for VUSD who have satisfied the A-G course requirement (VUSD only), took the SAT I or ACT exams, and have a GPA within 0.3 of the GPA cutoff.

graduating classes but potentially at a smaller magnitude due to uncertainty surrounding COVID-19 and online learning.

Lastly, the author provides plots of enrollment outcomes using a fourth-order polynomial line of best fit for the full sample and breakdowns by heterogeneity (See **Appendix Figures A3 – A7**). Similar to the main results, the plots depict significant increases in CSUSM and CSU enrollment rates for the full sample, driven mostly by first-generation, nonwhite, and low-income students. In addition, the figures demonstrate that the CSUSM MOUs close the college enrollment gaps between first-generation and non-first-generation students along with the income enrollment gaps at CSUSM and CSUs.

DISCUSSION AND CONCLUSION

The Memorandums of Understanding between California State University San Marcos and its local school districts differ from previously studied state-wide guaranteed admission programs as they mainly targeted students who were considering two-year options to enroll at a guaranteed, local four-year option instead. This paper finds that the CSUSM MOUs primarily affected underrepresented students, with first-generation, nonwhite, and low-income students experiencing the greatest increase in CSUSM and CSU enrollment along with a shift away from two-year enrollment to four-year enrollment (not statistically significant) under the MOUs. This suggests that local guaranteed admission programs like the CSUSM MOUs can also serve as a force for increasing the enrollment rates of underrepresented students at higher-quality, public four-year institutions like previously studied state-wide guaranteed admission programs.

However, it is important to consider the limitations of the research. This paper focused on the two districts from which the author could obtain data, but CSUSM has signed MOUs with eight other districts. With richer data, it may be possible to gain insight into how proximity to the college could also impact the effectiveness of a local guaranteed admission program and obtain more precise estimates thanks to the greater sample size. In addition, since the CSUSM MOUs are a relatively new guaranteed admission program, the author is unable to observe long-run outcomes such as college graduation rates and earnings after high school for most graduation cohorts. Future research can follow students and observe their long-run outcomes to better understand if the increased enrollment at CSUSM and any CSU resulted in any "mismatch" of underrepresented students.

On the flip side of the mismatch theory, an additional potential concern from these findings is whether students would have continued enrolling at 2-year institutions and transferred to higher-quality 4-year institutions if not for the MOUs. Although the author does not have data on institutions students transferred to (if any) and long-run outcome data, transfer rates remain low on average with only 2-3 percent of California community college students transferring to a 4-year institution within 2 years and 22-24 percent transferring within 4 years.[53] Average U.S. 2-year college graduation rates within 4 years (34 percent) are also lower than average U.S. 4-year college graduation rates within 4 years (64 percent).[54] Thus, the author argues that the CSUSM MOUs as a whole likely help local students gain access to 4-year colleges rather than steer them away from higher-quality options.

Despite the limitations of this research, the analysis provides insight into the effectiveness of guaranteed admission programs and how the requirements of each program may shape its effectiveness. Notably, this paper did not observe any changes to enrollment at any postsecondary as a result of the CSUSM MOUs, likely due to already high baseline college enrollment rates when conditioning on the sample of students who have completed the SAT/ACT exam and the A-G requirements. This indicates that in order for college access programs to be effective in expanding overall college enrollment, not just enrollment at public four-year institutions or higher-quality institutions, they should include students who have not already exhibited an interest in higher education. This implication may be particularly interesting in the post-COVID-19 world, as many colleges are moving away from requiring standardized exam scores like the SAT/ACT, allowing students to more easily apply to colleges and utilize college access programs like guaranteed admission programs. However, one common requirement (which is also affecting future graduating classes under the

CSUSM MOUs) that can continue to restrict students' participation in college access programs and consequently also restrict the programs' gains in college enrollment is for students to complete the Free Application for Federal Student Aid (FAFSA). Thus, future policymakers and researchers may be interested in understanding how to increase college access in conjunction with raising awareness of financial aid opportunities.

ACKNOWLEDGEMENTS

The author thanks the administrative teams at Murrieta Valley Unified School District and Vista Unified School District for the time and effort they put into preparing student data for this research.

NOTES

A. Although the MOUs were signed between 2009 to 2015, the first graduating classes to be affected by this program in each district ranged from 2009 to 2019.

B. 9,032 students graduated from the two school districts between 2017 to 2019, and roughly half satisfied the A-G course requirement and SAT I/ACT requirement.

C. The TTP was adjusted in 2009 to place a cap on the share of first-year in-state students who are guaranteed admission to UT Austin to 75 percent of the incoming class.[19] The findings on TTP mentioned in this paper all refer to impacts before 2009.

D. The ELC was expanded to students graduating in the top nine percent of their California high school class in 2012. As a result, ELC-eligible students no longer experienced admission advantages at selective ("Absorbing") UCs.[11] The impacts described in this paper occurred before 2012.

E. Enrollment numbers are calculated from the Integrated Postsecondary Education Data System (IPEDS), which is provided by the U.S. Department of Education, National Center for Education Statistics.

F. Underrepresented minority is defined in this paper as a student who identifies as Black or African American, Hispanic, Native American or Alaskan Native, Pacific Islander, or as two or more races.

G. CSUs no longer require students to provide SAT or ACT scores as of March 2022, but SAT or ACT scores were still required during the years studied in this paper.[22]

H. Beginning with the 2021-2022 admissions cycle, the CSU application asks some questions about extracurricular involvement. Additionally, California Polytechnic State University, San Luis Obispo asked supplemental questions on students' extracurricular involvement prior to this change.[16, 17]

I. A map of the local area CSUSM serves is provided in the appendix, along with the school districts that signed an MOU with CSUSM and the districts specifically studied in this paper (See **Appendix Figure A1**).

J. CSUSM now requires students to complete the Free Application for Federal Student Aid (FAFSA) to receive guaranteed admission, but the eligibility conditions are based on the most recent edition of each school district's signed MOU with CSUSM at the time of data collection and analysis in 2022.[25]

K. Beginning with the graduating class of 2022, the EPT and ELM testing were eliminated and completed replaced by other placement evaluations like SAT, ACT, and Advanced Placement (AP) exam scores.[26]

L. Students who graduated from San Marcos Unified School District did not need to satisfy the GPA condition to receive guaranteed admission to CSUSM.[28]

M. Although the first VUSD graduating class affected by the CSUSM MOUs was the graduating class of 2017, the first year of data observed starts with the class of 2018.

N. Although the graduating class of 2020 was not impacted by the COVID-19 pandemic until the second half of the school year, they still may have been affected by the uncertainty surrounding online learning. This paper experiments with including the class of 2020 in the analysis in the later "Robustness" section.

O. When running the analysis without conditioning on VUSD students satisfying the A-G requirements, the estimates become larger because the average college enrollment rates below the 3.0 GPA cutoff become lower. However, this is not a perfect indication that not conditioning on MVUSD students satisfying the A-G requirements is overestimating the effect since MVUSD students have higher average GPAs and are more likely to complete the A-G requirements compared to VUSD students. Thus, the distribution of MVUSD students who did not complete the A-G requirements may be more equal on both sides of the GPA cutoff. The results without conditioning on VUSD students satisfying the A-G requirement are available upon request.

P. First-generation college student is defined in this paper as a student whose parents' highest level of educational attainment is some college or less (did not acquire a four-year degree).

Q. This tendency for male students to be more likely than female students to bargain for better grades has been documented at the university level.[51]

R. One exception is that white students see a significant decrease in four-year enrollment and a significant increase in two-year enrollment above the 3.0 cutoff. However, these results move in the opposite direction of the main results presented in the next section, suggesting that white students who are more likely to "manipulate" their GPA to be above 3.0 are also more likely to attend two-year colleges and not four-year colleges.

S. The author experiments with matching bandwidths with the full RD sample (BW: 2.73 to 3.43) along with using data-driven bandwidths outlined by Calonico *et al*. (2014) for the enrollment outcome of any postsecondary for both the placebo and the MVUSD graduating classes of 2017 to 2019 samples.[48] Both approaches yield very similar bandwidths and hence, little difference in estimates (See **Appendix Tables A3** and **A4**).

T. The author also considers if the CSUSM MOUs affect UC enrollment rates, potentially by encouraging students to choose a local option rather than a UC. There are no observed impacts on UC enrollment due to an overall low UC enrollment rate around the 3.0 GPA cutoff. The median GPA of students who enrolled at any UC in the full sample was 4.086, and only 23 students in the RD sample enrolled at a UC.

REFERENCES

1. Torpey, E., Education level and projected openings, 2019-29, *https://www.bls.gov/careeroutlook/2020/article/education-level-and-openings.htm#:~:text=A%20bachelor's%20degree%20is%20typically,average%\protect\T1\textbraceright2C%20from%202019%20to%202029* (accessed May 2023)
2. U.S. Bureau of Labor Statistics, Education pays, 2021, *https://www.bls.gov/careeroutlook/2022/data-on-display/education-pays.htm* (accessed May 2023)
3. U.S. Bureau of Labor Statistics, High school graduates with no college had unemployment rate of 4.5 percent in February 2022, *https://www.bls.gov/opub/ted/2022/high-school-graduates-with-no-college-had-unemployment-rate-of-4-5-percent-in-february-2022.htm* (accessed May 2023)
4. U.S. Department of Education, Office of Planning, Evaluation and Policy Development and Office of the Under Secretary, Advancing Diversity and Inclusion in Higher Education: Key Data Highlights Focusing on Race and Ethnicity and Promising Practices, *https://www2.ed.gov/rschstat/research/pubs/advancing-diversity-inclusion.pdf*

(accessed May 2023)
5. Bailey, M. J., and Dynarski, S. M. (2011) Inequality in Postsecondary Education, in *Whither Opportunity?: Rising Inequality, Schools, and Children's Life Chances* (Duncan G. J., and Murnane, R. J.), 117–132, Russell Sage Foundation, New York.
6. Hoxby, C., and Avery, C. (2013) The Missing "One-Offs": The Hidden Supply of High-Achieving, Low-Income Students, *Brookings Pap Econ Act* 2013 (1), 1–65. *http://doi.org/10.1353/eca.2013.0000*
7. Perna, L. W., Rowan-Kenyon, H., Bell, A., Thomas, S. L., and Li, C. (2008) A Typology of Federal and State Programs Designed to Promote College Enrollment, *J Higher Educ* 79(3), 243–267. *https://doi.org/10.1080/00221546.2008.11772098*
8. Black, S. E., Denning, J. T., and Rothstein, J. (2023) Winners and Losers? The Effect of Gaining and Losing Access to Selective Colleges on Education and Labor Market Outcomes, *Am Econ J: Appl Econ* 15(1), 26–67. *https://doi.org/10.1257/app.20200137*
9. Bleemer, Z. (2019) Diversity in University Admissions: Affirmative Action, Percent Plans, and Holistic Review, CSHE.6.19, *https://escholarship.org/uc/item/1kb1b4cq* (accessed May 2023)
10. Callahan, J., States with Automatic or Guaranteed College Admissions Policies, *https://www.cga.ct.gov/2021/rpt/pdf/2021-R-0077.pdf* (accessed December 2022)
11. Bleemer, Z. (2021) Top Percent Policies and the Return to Postsecondary Selectivity, CSHE.1.21, *https://escholarship.org/uc/item/6qf1888s* (accessed May 2023)
12. Odle, T. K., and Delaney, J. A. (2022) You are Admitted! Early Evidence on Enrollment from Idaho's Direct Admissions System, *Res High Educ* 63(6), 899–932. *https://doi.org/10.1007/s11162-022-09675-x*
13. The California State University, Access and Impaction at the CSU, *https://www.calstate.edu/attend/impaction-at-the-csu#:~:text=CSU%20Local%20Admission%20%26%20Service%20Areas,university%20are%20given%20priority%20admission* (accessed December 2022)
14. Rodriguez, O., Mejia, M. C., and Johnson, H. (2017) Increasing Equity and Diversity, *https://www.ppic.org/wp-content/uploads/r_0917orr.pdf* (accessed May 2023)
15. The Calfornia State University, Freshman: Admission Requirements, *https://www.calstate.edu/apply/freshman/getting_into_the_csu/pages/admission-requirements.aspx* (accessed March 2023)
16. Cal State Apply, Freshman Application Guide 2021-2022 *https://www.calstate.edu/apply/freshman/Documents/freshman-application-guide-21-22.pdf* (accessed May 2023)
17. Silbernagel, M. (2022) Applying to a Cal State University in 2022, *https://www.touchstoneadvising.com/post/applying-to-a-cal-state-university-in-2020* (accessed May 2023)
18. Cortes, K. E., and Lincove, J. A. (2018) Match or Mismatch? Automatic Admissions and College Preferences of Low- and High-Income Students, *Educ Eval Policy Anal* 41(1), 98–123. *https://doi.org/10.3102/0162373718813360*
19. Long, M. C., Saenz, V., and Tienda, M. (2010) Policy Transparency and College Enrollment: Did the Texas Top Ten Percent Law Broaden Access to the Public Flagships?, *Ann Am Acad Pol Soc Sci* 627(1), 82–105. *https://doi.org/10.1177/0002716209348741*
20. Fletcher, J. M., and Mayer, A. (2013) Tracing the Effects of Guaranteed Admission Through the College Process: Evidence from a Policy Discontinuity in the Texas 10% Plan, *Contemp Econ Policy* 32(1), 169–186. *https://doi.org/10.1111/coep.12011*
21. University of California, Subject Requirement (A-G), *https://admission.universityofcalifornia.edu/admission-requirements/freshman-requirements/subject-requirement-a-g.html* (accessed December 2022)
22. The California State University, High School Guidance - First-Time First-Year Students, *https://www.calstate.edu/apply/freshman/Pages/first-time-freshman-guidance.aspx* (accessed December 2022)
23. California State University San Marcos, Local Admission Area School Districts, *https://www.csusm.edu/admissions/how-to-apply/impaction/local-service-area.html* (accessed December 2022)
24. The California State University, Impacted Undergraduate Majors and Universities, 2023-24, *https://www.calstate.edu/attend/degrees-certificates-credentials/Pages/impacted-degrees.aspx* (accessed March 2023)

25. California State University San Marcos, K-12 Partner School Districts and Families, *https://www.csusm.edu/alliance/partners/index.html* (accessed December 2022)
26. California State University San Marcos, Readiness and Success Service: Early Start Exemptions, *https://www.csusm.edu/readiness/earlystart/exempt.html* (accessed March 2023)
27. Haynes, K. S., Boyle, S., Walters, J. and Hargrave, S. (2013) Memorandum of Understanding Between the Escondido Union High School District, Escondido Union School District, San Pasqual Union School District and California State University San Marcos, *https://www.csusm.edu/alliance/documents/a101625-euhsd-eusd-spusd-guaranteed-admission-open-ended.pdf* (accessed December 2022)
28. Haynes, K. S., and Holt, K. D. (2014) Memorandum of Understanding Between the San Marcos Unified School District and California State University San Marcos, *https://www.csusm.edu/alliance/documents/a101646-smusd-mou.pdf* (accessed December 2022)
29. Haynes, K. S., and Kelley, P. (2014) Memorandum of Understanding Between the Murrieta Unified School District and California State University San Marcos, *https://www.csusm.edu/alliance/documents/a101698-signed-mou-5.8.14.pdf* (accessed December 2022)
30. Haynes, K. S., and Kimberly, D. (2015) Memorandum of Understanding Between Lake Elsinore Unified School District and California State University San Marcos, *https://www.csusm.edu/alliance/documents/a102274-lake-elsinore-usd-guaranteed-admisson-open-ended.pdf* (accessed December 2022)
31. Haynes, K. S., and Lovely, S. (2013) Memorandum of Understanding Between the Carlsbad Unified School District and California State University San Marcos, *https://www.csusm.edu/alliance/documents/a101584-carlsbad-usd-guaranteed-admission-6_30_17.pdf* (accessed December 2022)
32. Haynes, K. S., and Obermeyer, L. (2013) Memorandum of Understanding Between the Valley Center-Pauma Unified School District and California State University San Marcos, *https://www.csusm.edu/alliance/documents/a101594-valley-center-pauma-unified-school-district-guaranteed-admission-open-ended.pdf* (accessed December 2022)
33. Haynes, K. S., O'Neal, V., and Ritter, T. (2013) Memorandum of Understanding Between the Temecula Valley Unified School District and California State University San Marcos, *https://www.csusm.edu/alliance/documents/a101604-tvusd-guaranteed-admission-11_15_13.pdf* (accessed December 2022)
34. Haynes, K. S., Pedroza, H. A., Singh, C., Koeppen, M. (2018) Memorandum of Understanding Between the Fallbrook Union High School District, Fallbrook Union Elementary School District, Vallecitos School District and California State University San Marcos, *https://www.csusm.edu/alliance/documents/2018/2018fuhsdamendedmou.pdf* (accessed December 2022)
35. Haynes, K. S., and Perondi, L. (2014) Memorandum of Understanding Between Oceanside Unified School District and California State University San Marcos, *https://www.csusm.edu/alliance/documents/2017/a101617-oceanside-unified-school-district-guaranteed-admission-6_30_17.pdf* (accessed December 2022)
36. Haynes, K. S., and Vodicka, D. (2013) Memorandum of Understanding Between the Vista Unified School District and California State University San Marcos, *https://www.csusm.edu/alliance/documents/a101532-vusd-signed-mou.pdf* (accessed December 2022)
37. Carlsbad High School, CHS Graduation Requirements, *https://carlsbadhs.schoolloop.com/pf4/cms2/view_page?d=x&group_id=1587874782071&vdid=i13vb2hbodpuz677* (accessed May 2023)
38. El Camino High School, Graduation Requirements, *https://www.oside.us/domain/728* (accessed May 2023)
39. Elsinore High School, Graduation Requirements, *https://ehs.leusd.k12.ca.us/apps/pages/index.jsp?uREC_ID=323677&type=d&pREC_ID=731744* (accessed May 2023)
40. Escondido Union High School District, EUHSD Graduation Requirements, *https://www.euhsd.org/apps/pages/index.jsp?uREC_ID=2757991&type=d&pREC_ID=2299361* (accessed May 2023)
41. Fallbrook Union High School, Graduation Requirements, *https://www.fallbrookhs.org/fallbrook/graduation-requirements* (accessed May 2023)
42. Murrieta Valley Unified School District, Graduation Requirements, *https://www.murrieta.k12.ca.us/Page/25321* (accessed May 2023)

43. San Marcos Unified School District, 2020-2021 Course Catalog, *https://sanmarcoshigh.smusd.org/common/pages/UserFile.aspx?fileId=30967620* (accessed May 2023)

44. Temecula Valley Unified School District, High School Graduation Requirements & College Entrance Requirements, *https://www.tvusd.k12.ca.us/Page/22991* (accessed May 2023)

45. Valley Center-Pauma Unified School District, Board Policy, *https://core-docs.s3.amazonaws.com/documents/asset/uploaded_file/2756/VCPUSD/2218493/BP_6146.1_High_School_Graduation_Requirements.docx.pdf* (accessed May 2023)

46. Vista Unified School District, High School Graduation Requirements, *https://www.vistausd.org/common/pages/DisplayFile.aspx?itemId=21140797* (accessed May 2023)

47. Riverside County Office of Education, 2019-2020 Four-Year Cohort Graduation, Cohort Dropout, a-g Completion, and State Seal of Biliteracy Report [PowerPoint slides], *https://www.rcoe.us/home/showpublisheddocument/3802/637581503682670000* (accessed May 2023)

48. Calonico, S., Cattaneo, M. D., and Titiunik, R. (2014) Robust Nonparametric Confidence Intervals for Regression-Discontinuity Designs, *Econometrica* 82(6), 2295–2326. *https://doi.org/10.3982/ECTA11757*

49. McCrary, J. (2008), Manipulation of the running variable in the regression discontinuity design: A density test, *J Econom* 142(2), 698–714. *https://doi.org/10.1016/j.jeconom.2007.05.005*

50. Zimmerman, S. D. (2014) The Returns to College Admission for Academically Marginal Students, *J Labor Econ* 32(4), 711–754. *https://doi.org/10.1086/676661*

51. Li, C. H., and Zafar, B. (2023) Ask and You Shall Receive? Gender Differences in Regrades in College, *Am Econ J: Econ Policy* 15(20), 359–394. *https://doi.org/10.1257/pol.20210053*

52. Cataldi, E. F., Bennett, C. T., and Chen, X., First-Generation Students: College Access, Persistence, and Postbachelor's Outcomes, *https://nces.ed.gov/pubs2018/2018421.pdf* (accessed May 2023)

53. California Community Colleges Chancellor's Office, Management Information Systems Data Mart: Transfer Velocity Cohort [Database], *https://datamart.cccco.edu/Outcomes/Transfer_Velocity.aspx* (accessed October 2023)

54. National Center for Education Statistics. (2022) Undergraduate Retention and Graduation Rates, *https://nces.ed.gov/programs/coe/indicator/ctr/undergrad-retention-graduation* (accessed October 2023)

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PRESS SUMMARY

This paper evaluates the college enrollment impacts of guaranteed admission agreements between California State University San Marcos (CSUSM) and its local school districts. The author finds that the admission agreements encouraged students to shift away from enrolling at two-year institutions towards four-year institutions, particularly at CSUSM and at any California State University (CSU). The program also disproportionally affected students from underrepresented backgrounds (*e.g.*, first-generation, nonwhite, and low-income), suggesting that smaller-scale guaranteed admission programs have the potential to increase representation at four-year public institutions and encourage underrepresented students to consider higher-quality postsecondary institutions.