Exploring the Relationship Between Test-Optional Admissions and Selectivity and Enrollment Outcomes During the Pandemic

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Most selective colleges implemented test-optional admissions during the pandemic, making college entrance exam scores optional for applicants. We draw on descriptive, two-way fixed effects, and event study methods to examine variation in test-optional implementation during the pandemic and how implementation relates to selectivity and enrollment. For "test-optional" colleges during the pandemic, we found substantial variation in policy type (e.g., test optional, test free) and whether the policy extended to all applicants and scholarship consideration. Findings suggest test-optional implementation related to increases in Black student enrollment, mostly at moderately selective colleges and when policies extended to all applicants and scholarships. At highly selective colleges, findings suggest test-optional implementation related to an increase in applications but not consistent gains in enrollment.

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Outcomes During the Pandemic

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Abstract

Most selective colleges implemented test-optional admissions during the pandemic, making college entrance exam scores optional for applicants. We draw on descriptive, two-way fixed effects, and event study methods to examine variation in test-optional implementation during the pandemic and how implementation relates to selectivity and enrollment. For "test-optional" colleges during the pandemic, we found substantial variation in policy type (e.g., test optional, test free) and whether the policy extended to all applicants and scholarship consideration. Findings suggest test-optional implementation related to increases in Black student enrollment, mostly at moderately selective colleges and when policies extended to all applicants and scholarships. At highly selective colleges, findings suggest test-optional implementation related to an increase in applications but not consistent gains in enrollment.

Keywords: college admissions, test-optional admissions, college access, racial equity

U.S. higher education is stratified by race and income with Black, Latinx, and low-income students less likely than their similarly achieving peers to attend a selective college (Astin & Oseguera, 2004; Baker et al., 2018). Recent research and policy attention has focused on how selective college admissions practices serve to interrupt or reproduce inequities (Bastedo et al., 2018, 2019; Rosinger et al., 2021). College entrance exam scores are perhaps one of the most contested features of selective college admissions. Concerns that racially minoritized and low-income students on average score lower on standardized tests than their peers (Korbin et al., 2006) coupled with research indicating test scores offer little insight beyond high school GPA (Allensworth & Clark, 2020) raise questions about their role in the admissions process.

In response, a growing number of selective colleges have adopted test-optional admissions policies that allow applicants to choose whether to submit SAT or ACT scores. The test-optional movement began with a handful of selective liberal arts colleges—starting in the late 1960s and gaining momentum in the late 1990s and early 2000s—and has since expanded to include some of the most selective institutions, including research and public universities (Rosinger, 2020). In spring 2020, the COVID-19 pandemic led to the cancellation of college entrance exams and spurred hundreds of four-year colleges to enact test-optional policies for the upcoming year. The National Center for Fair & Open Testing reported that most of the nation's four-year colleges were test optional or test free in the wake of testing disruptions. This included several state systems: the University of California and the California State University systems, the State University of New York, Oregon's public colleges, and others.

Prior research examines the outcomes of test-optional policies, offering somewhat mixed evidence regarding their effectiveness at expanding access (e.g., Belasco et al., 2015; Bennett, 2022). However, we have little systematic evidence regarding how the test-optional movement

has evolved over time nor what the exponential growth in participating institutions during the pandemic means for enrollment in selective colleges among racially minoritized and low-income students. Nor do prior studies consider the extent to which test-optional policies vary in their implementation. Indeed, our study highlights how vague and ill-defined the term "test-optional" is as a phrase. As our study will illuminate, "test-optional" policies vary in the extent to which college entrance exam scores are optional for all applicants (versus being required for international students, homeschooled students, students below some specified GPA), the extent to which they are optional for other college processes (versus being required for merit scholarships and/or matriculation), and whether scores are optional (versus test-flexible policies where colleges require alternate assessments or materials in place of the SAT or ACT, or test-free policies in which test scores are not considered for any applicant). Variations in test-optional implementation are likely to shape how effective these policies are at expanding access and reducing racial and economic inequities. Understanding variation in test-optional policies, and incorporating that variation into research designs, is critical to improving institutional policymakers' ability to make decisions. Without understanding variation in policy and their ensuing relationship with outcomes, it is impossible to understand the mechanisms through which test-optional policies expand (or restrict) college access for different student populations.

This paper describes the growth of test-optional admissions in selective colleges, illuminates variations in test-optional policy implementation, and examines the relationship between test-optional policies and selectivity and enrollment outcomes. In particular, we ask:

1. To what extent did selective colleges go "test-optional" during the pandemic?

2. To what extent did selective colleges vary in how they implemented "test-optional" policies?

3. To what extent do "test-optional" policies relate to selectivity and enrollment outcomes among low-income and racially minoritized students?

4. To what extent do variations in "test-optional" policy implementation relate to selectivity and enrollment outcomes among low-income and racially minoritized students?

To answer these questions, our research team created a detailed dataset drawn from a review of more than 1,000 historical webpages and test-optional policy announcements for 186 selective, not-for-profit four-year colleges. We found that in 2021, after the onset of the COVID-19 pandemic, nearly 10% of institutions continued to require tests for admissions, while approximately 76% were test optional, 4% allowed applicants to substitute other forms of standardized tests or materials to replace the more typical ones (i.e., substituting an Advanced Placement test for the SAT or ACT), and 10% removed standardized tests from their admissions process entirely. At colleges with any type of "test-optional" policy, 14% continued to college entrance exam scores some applicants, 15% for scholarship consideration, and 6% for enrollment.

When we examined how selectivity and enrollment shifted, contemporaneous to "test-optional" policy adoption, we found suggestive evidence that Black student enrollment was higher at institutions with test-optional policies, especially policies that were less restrictive and used for both admissions and scholarship access. We found this result across model specifications, but it was most pronounced at moderately selective colleges. Findings suggest that at highly selective colleges, test-optional policies were associated with increased applications, but we did not find consistent evidence of concurrent increases in enrollment. We found some evidence that test-free policies, relative to test-requiring policies, were associated with increased numbers of applicants as well as increased enrollment among Pell Grant recipient,

Black, and Latinx students, though the latter findings were not stable across model specifications. Meanwhile, any relationship between the type of test-optional policy and outcomes tended to be primarily at colleges that extended test-optional policies to all applicants and scholarship consideration.

While our findings are not causal, this bifurcation in findings by institutional selectivity highlight the importance in attending to the variation in how "test-optional" policies are implemented by individual institutions. Often, quantitative research on college admissions treats each institution as interchangeable. We recognize that our work primarily provides evidence on average relationships across large groups of institutions. Still, in this paper, we seek to contextualize our findings by noting that two institutions can both be test-optional yet have a host of differences in the role that standardized tests play in admissions, scholarship access, matriculation, and to whom those policies apply.

Related Literature

A central mechanism in the stratification of society is unequal access to educational attainment (Stevens et al., 2008). Scholars have documented a connection between higher educational attainment and social mobility thereafter (Torche, 2011). However, access to higher education remains inequitable for students of minoritized backgrounds (Bastedo & Bowman, 2011; Posselt et al., 2012). One factor contributing to unequal access in higher education is selective admissions policies (Karabel, 2005; Soares, 2007). Specifically, scholars have highlighted the use of college admissions tests as one source of inequality in admissions (Soares, 2012, 2020). Given the history of standardized testing being one deeply imbued in racial bias and eugenics, the replication of social inequality given the decontextualized usage of standardized tests should be no surprise.

Brief Overview of Standardized Testing and College Admissions

College entrance exam scores are used in a variety of ways in the admissions process (Bastedo et al., 2018; Taylor et al., 2024), often depending on the selectivity of the institution. Frequently, the popular press, state and federal policymakers, the public, and even some scholars treat the college admissions process as a monolithic one, where college entrance exams—the SAT and the ACT—are used in a similar way at all institutions. However, the reality is that different groups of institutions use standardized tests in different ways, with different thresholds, and for different outcomes. The most frequently discussed uses of standardized tests are for admission to selective colleges. In general, this is within a holistic admissions system where admissions professionals assess applicants' standardized test scores within the context of the students' schooling environment (Bastedo et al., 2018). Less selective colleges often use test scores in a more mechanized fashion, where students with a certain test score and GPA are automatically considered admissible. Beyond admission, institutions can and do use standardized tests to provide scholarships or, especially at open-access institutions, to assess whether students are ready to enroll in credit-bearing courses.

This may seem like a clear demarcation, that more selective colleges use college entrance exam scores as one factor among many while less selective colleges use the same scores with hard cutoffs, but it seldom is. For example, if we considered any selective college to be one with an admit rate below 50% (so the institution admits less than half the students who apply, which comprise colleges in the present study), this category would include institutions like Harvard University, the University of California-Davis, and Spelman College. These institutions have different stakeholder groups (two being private and one public, one a Historically Black College or University (HBCU), wide variation in admission rates (5%, 43%, and 40% respectively in

2017), undergraduate full-time enrollment (7,147, 2,086, and 29,284 respectively in 2017), and institutional aid per student ($51,259, $10,279, and $10,792 respectively in 2017)). It is logical the institutions also use test scores in different ways. Beyond that, the use of standardized tests in external rankings of institutions have added a dilution of whatever signaling ability these scores originally held. As Goodhart's axiom states, when a metric becomes used to evaluate an institution, it ceases being useful. We do not go quite this far, but it is undeniable that *U.S. News & World Report* and other rankings have created an environment where colleges may choose how to incorporate standardized test scores into their admissions process based less on their applicant pool and mission and more on desired status within the higher education ecosystem. This desire to incorporate standardized tests to ensure maintenance or achievement of higher status likely differs based on an institutions mission, stakeholders, and pre-existing status.

Since its inception, the use of standardized testing in tandem with a meritocratic system of schooling has been a mechanism serving to reproduce social inequality (Alon & Tienda, 2007; Au, 2013; Grodsky et al., 2008). Scholars have documented inequitable standardized test scores outcomes based on race, ethnicity, and class (Grodsky et al., 2008). Access to test preparation services also differs notably between demographic groups, and not all groups benefit equally from participation (Avery, 2013; Byun & Kim, 2012). These inequitable outcomes have persisted across both K12 (Fryer Jr. & Levitt, 2004; Hedges & Nowell, 1999; KewalRamani et al., 2007) and higher education contexts (Camara & Schmidt, 1999; Soares, 2012, 2020). Though not to the same extent, gender differences in standardized test scores have also been documented (Buchmann et al., 2008; Fryer Jr. & Levitt, 2004; Grodsky et al., 2008; Hedges & Nowell, 1999).

These inequitable outcomes should come as no surprise given the foundations of standardized testing stemming from eugenicist desires to document a racial hierarchy (Au, 2020;

Zuberi, 2001). Furthermore, the use of standardized testing in college admissions similarly has its foundations in racial exclusion (Karabel, 2005). According to Karabel (2005), the SAT became a prominent part of the college admissions process in the early 1930s with the creation of Harvard's National Scholars program. The use of the SAT in Harvard's admissions process was carefully crafted to ensure greater geographic diversity of applicants. However, the initial processes intimately considered the stratification of educational opportunity at the K12 level and an "extreme differentiation of school programs" and "discriminating guidance" from colleges to ensure those who were historically othered in college admissions processes continued to be (Karabel, 2005, p. 156).

While the SAT was originally only used for scholarship consideration, it was "extreme[ly] success[ful] in identifying high-performing students" (Karabel, 2005, p. 140) and influenced Harvard to incorporate the SAT as part of a broader individualized/holistic review process to gain admission to the institution (Bastedo et al., 2018; Karabel, 2005). Given that testing outcomes directly correlate with students' backgrounds, the "high-performing students" identified by Harvard's SAT were largely, if not exclusively, affluent white men relying on a segregated system of K12 education to stratify achievement outcomes (Karabel, 2005). Colleges throughout the nation began to mimic (DiMaggio & Powell, 1983) Harvard's admissions process, marking an institutionalized process of using standardized college admissions testing with the SAT and ACT (Karabel, 2005).

The racist foundations of college admissions testing—paired with a well-documented pattern of inequality of educational achievement and attainment outcomes—has pushed institutions of higher education to reconsider the use of standardized testing as part of the admissions process (Furuta, 2017). While the earliest adopters of test-optional admissions were

selective liberal arts institutions, by the 2010s the implementation of test-optional policies expanded into other institutional types (Bennett, 2022). Of note, this growth in policy implementation was experienced largely within the private sector (Bennett, 2022). Prior to the pandemic, test-optional policies were slowly implemented across institutions, with most policies being implemented in the early 2000s (Rosinger, 2020). However, given the nearly insurmountable challenges in accessing testing as a result of the pandemic, a large-scale increase in the number of institutions adopting a test-optional policy occurred (Rosinger, 2020). At present, more than 1,800 institutions have a test-optional or test-free policy as part of their admissions practices (FairTest, 2024).

Evidence on the Effects of Test-Optional Policies

Early evidence on test-optional admissions indicated they did little to expand enrollment among racially minoritized and low-income students at liberal arts colleges (Belasco et al., 2015), a larger group of institutions (Saboe & Terrizzi, 2019), and a public research university (Rubin & Canché, 2019). In some cases, test-optional policies may enhance institutional selectivity through increased numbers of students applying and higher reported SAT scores (Belasco et al., 2015). However, recent evidence that draws on updated data across a wider range of institutions shows test-optional admissions leads to a marginal increase in enrollment among racially minoritized and low-income students, primarily at moderately selective institutions as compared to highly selective ones (Bennett, 2022). This research contrasts a recent working paper that argues that test scores can be used to identify underrepresented students (Chetty et al., 2023). We note here that the sample of institutions included in the latter study would be considered highly selective and institutions that enroll a minority share of undergraduate students in the United States. Therefore, when we consider Bennett (2022) and Chetty et al. (2023), it

may be that moderately selective institutions execute their admissions process in a different way than highly selective institutions. This reality could be one of the reasons that test-optional policies continue to be appealing for their potential to expand applications, acceptances, and enrollment among underrepresented students.

A more delayed but similar movement, also heightened by the pandemic, has emerged in graduate and professional education. Research on this movement highlights the limitations of test-optional policies as a single policy to reduce educational disparities: for instance, the movement among law schools to accept the GRE instead of the LSAT did not increase enrollment among racially minoritized students; rather, additional sustained efforts are needed (Rosinger et al., 2022).

While some research examines the outcomes of test-optional admissions, we have little systematic evidence regarding how these policies have developed over time and, in particular, what the implications of the current surge in test-optional implementation means for college admissions in the long run. Prior research also has not considered variations in test-optional implementation that are likely to shape enrollment patterns in different ways. Thus, policy design and implementation may mediate the extent to which student enrollment changes after a test-optional policy is introduced. This study seeks to offer insight into test-optional policy implementation across selective colleges, variations in how colleges implement these policies, and their relationship with selectivity and enrollment outcomes.

Data and Methods

Sample and Data

Our final sample included 186 selective four-year, not-for-profit colleges, defined as colleges that admitted fewer than 50% of applicants, averaged over three consecutive years

(2018, 2019, 2020[1]). This set of institutions includes the most selective private institutions (e.g., Harvard University, Vanderbilt University, California Institute of Technology); liberal arts colleges (e.g., Davidson College, Swarthmore College); public research institutions (e.g., University of Michigan, University of Virginia, Georgia Institute of Technology, several University of California campuses); and the most selective regional publics (e.g., California State University, Long Beach, several City University of New York campuses).

Our primary data came from a unique dataset with detailed information on each sample college's admissions testing policy for applicants applying to enroll in fall 2021 (the first class to go through a complete admissions cycle during the pandemic). We used all not-for-profit, four-year institutions that met the admissions threshold, while excluding special focus institutions (such as art institutes) that frequently have unique admissions processes. Therefore, our initial sample included 190 institutions. We collected data using the Internet Archive: Wayback Machine, a digital library of webpages, to capture historical websites from the 2020-2021 admissions cycle. Three members of the research team split the 190 institutions and reviewed documentation from more than 1,000 webpages, including test-optional policy announcements and admissions, scholarships, honors programs, and admitted student sites. The research team members found information for all institutions except two (Texas A&M Commerce and Point University). For each college, we gathered information on the type of testing policy:

- Test free (in which applicants did not submit SAT or ACT test scores and the college did not review scores),
- Test optional (in which applicants could choose to submit scores and colleges considered scores as part of the application for students who chose to submit),

- Test flexible (in which applicants who chose to apply without SAT or ACT scores were required to submit an alternate test or other materials for admissions considerations), or

- Test required (in which applicants were required to submit SAT or ACT scores).

We also captured information on whether colleges with any type of test-optional policy (that is, test free, test optional, or test flexible) placed restrictions on who could apply under the policy. For example, colleges may have required international students, homeschooled students, or students with grades below some threshold to submit scores. Related, we collected information on whether colleges extended their test-optional policy to other processes, such as for honors program admission, merit scholarship consideration, or for eventual matriculation at the institution. We also captured whether testing policies implemented during the pandemic were announced as temporary or pilot programs or as a permanent change to admissions. Finally, we collected information on whether each college had a prior test-optional policy, what type of test-optional policy it was, and the year it was enacted. If we were unable to locate a prior policy adoption year, we drew on adoption years collected by Bennett (2022). Table 1 provides a complete list of data elements and a description of each. The research team met bi-weekly to discuss questions and to ensure consistent data entry occurred. After data collection, the lead author reviewed data coding decisions and documentation for all sample colleges for accuracy and consistency in coding across research team members.

[Table 1 Here]

The research team created an a priori list of data elements to collect, based on prior research and experience (several of the authors, including the two lead authors, have worked previously in college admissions at selective institutions). As data collection began, part of the bi-weekly research meetings included discussion of revisions to the data protocol. The data

elements we collected were also informed by an advisory board of college admissions leaders, high school counselors, and admissions scholars. For example, after a discussion with the advisory board, our research team began to collect data on whether a college required matriculating students to submit test scores because this came up during advisory board discussions as a complexity that students were facing. Once we completed data collection, given the need for data on institutional characteristics for our analysis, we excluded two colleges (University of South Florida campuses in Manatee and St. Petersburg) that did not report separate IPEDS data in 2021 (the key analysis year). These decisions resulted in a final sample of 186 institutions.

We used the detailed admissions testing policy dataset to answer RQ1 and RQ2, describing the rapid and widespread adoption of test-optional policies at selective colleges during the pandemic and highlighting variations in policy implementation across institutions (e.g., the type of college entrance exam policy, restrictions on who could apply under the policy, and the extent to which the policy extended to scholarship consideration).

To answer RQ3 and RQ4, we merged our admissions testing policy data with publicly available data from the National Center for Education Statistics' Integrated Postsecondary Education Data System (IPEDS). The resulting dataset included information on sample colleges observed from the 2017-2018 to the 2021-2022 academic year (i.e., four years prior to the first complete admissions cycle during the pandemic and one year following the first complete admissions cycle after the pandemic began). IPEDS contained data on our outcome variables: the number of applications (logged), admit rate, number of Pell Grant recipients enrolled (logged), number of Black students (logged), number of Latinx students (logged), number of Asian American students (logged), and number of white students (logged). The enrollment outcomes

represent first-time, first-year students, so they reflect the most recent incoming class that we would expect to be affected by changes to admissions policies.

We used the test-optional dataset we constructed to create four independent variables of interest:

1) A binary variable for whether a college had any type of testing policy;

2) a categorical variable for type of testing policy (defined as 0 in years when a college was test requiring, 1 in years when a college was test optional or flexible, and 2 in years when a college was test free);

3) a categorical variable for restrictions on who could apply under the test-optional policy (defined as 0 in years when a college was test requiring, 1 in years when a college was test optional but restricted who could apply under the policy, and 2 in years when a college was test-optional for *all* applicants); and

4) a categorical variable for if a test-optional policy extended to scholarship consideration (defined as 0 in years when a college was test requiring, 1 in years when a college was test optional for admission *only*, and 2 in years when a college was test optional for admission *and* scholarships).

We included several time-varying covariates from IPEDS to adjust our regression estimates for institutional characteristics, such as student enrollment, financial resources, and tuition, pricing, and financial aid. These covariates included: full-time equivalent (FTE) enrollment (logged), instructional expenditures per FTE (logged), student service expenditures per FTE (logged), state appropriations per FTE (logged), tuition and fees (logged), average institutional grant aid per student (logged), percent of students receiving institutional grant aid, average state grant aid per student (logged), percent of students receiving state grant aid, and the

admit rate from the prior academic year. Due to missing IPEDS data for some variables in some years, our analytic sample excludes 1.5% of college-year observations.

Table 2 shows descriptive statistics for outcomes and covariates over the panel period for colleges that were always test requiring (column 1), colleges that ever had any type of test-optional policy (column 2), colleges that were ever test-optional or flexible (column 3), colleges that were ever test free (column 4), colleges with restrictions on who could apply test optional (column 5), colleges with no restrictions on who could apply test optional (column 6), colleges that were test-optional for admissions only (column 7), and colleges that were test-optional for admissions and scholarships (column 8). Only 18 institutions required tests throughout the entire analytic period. Given the extreme pressure to make tests optional in some manner directly after the onset of the pandemic (Wong et al., 2023), these institutions likely did not randomly choose to continue requiring standardized tests. This reality is one of the primary reasons we do not suggest our study produces causal evidence. As we detail further in subsequent sections, most of the selective institutions in our sample first adopted a test-optional admissions policy during the pandemic, making it near impossible to study the causal effects of this era of test-optional implementation and its effects (given that the pandemic is the key omitted variable that directly relates to test-optional policy implementation and any outcome of interest).

[Table 2 Here]

Descriptively, our data highlight some of the characteristics of colleges that enacted (or did not) different types of test-optional policies. On average, colleges in our sample that ever adopted any type of test-optional policy received more applications, admitted a smaller share of students, enrolled fewer students, had greater financial resources (measured through instructional

and student services expenditures per student), and had higher tuition with more institutional aid relative to colleges that always required applicants to submit test scores during the period.

[Table 2 Here]

Analytic Method

We leveraged the test-optional dataset we constructed to descriptively answer RQ1 and RQ2, documenting the widespread adoption of test-optional policies at 186 selective colleges during the pandemic and highlighting variation in policy implementation across institutions (e.g., type of college entrance exam policy, restrictions on who could apply under the policy, and the extension of test-optional policies to scholarship consideration).

To answer RQ3 and RQ4, which ask how test-optional policies and their variations relate to selectivity and enrollment outcomes, we used a generalized difference-in-differences, or two-way fixed effects (TWFE), approach, though we acknowledge that this does not produce causal estimates. The TWFE equation can be formally expressed:

$$y_{it} = \beta_0 + \beta_1 testingpolicy_{it} + \Upsilon X_{it} + \lambda_i + \delta_t + \varepsilon_{it}$$

where y_{it} is the outcome for institution i in time t; $testingpolicy_{it}$ is the testing policy variable of interest; X_{it} are time-varying college characteristics; λ_i are college fixed effects; δ_t are year fixed effects; and ε_{it} is the error term. We adjusted standard errors for clustering at the college level. We estimated this model for each outcome and each treatment variable of interest (indicator for whether a college had any test-optional policy in a given year for RQ3 and categorical variables for type of test-optional policy, whether a college restricted who could apply test-optional, and whether a test-optional policy extended to scholarship consideration for RQ4). To explore whether results differed across institution types, we estimated models for the full set of sample colleges, private colleges, public colleges, highly selective colleges (defined as colleges with an

admit rate less than 30% at the start of the study period), and moderately selective colleges (defined as colleges with an admit rate above 30% at the start of the study period).

Recent econometrics literature highlights the limitations of TWFE when units (colleges, in our case) adopt policies at different times (i.e., differential treatment timing). In a canonical DiD design with two time periods and two groups (one that is treated in the second time period and one that is not), the DiD estimate is calculated as the difference in outcomes over time between the treated versus untreated group. But when treatment timing varies over time (i.e., colleges adopt test-optional policies in different years), the DiD estimate is a weighted average of all the before and after comparisons being made (Goodman-Bacon, 2021; Roth et al., 2023). This includes comparing differences in outcomes before and after treatment between *never treated (always test requiring)* and *test-optional adopters* (regardless of treatment timing), *early adopters* (colleges that adopted test-optional policies before 2021) and *later adopters* (colleges that adopted test-optional policies in 2021) before the adoption period, and *later adopters* to *earlier adopters* after the earlier adopters have gone test optional. If test-optional policy effects vary over time, for instance, if effects grow over time as prospective applicants become more aware of and familiar with test-optional policies, comparing later to earlier adopters can bias the estimates since the treatment effects for earlier adopters are included in the DiD estimate (Goodman-Bacon, 2021).

To reduce bias in TWFE estimates, we excluded 29 colleges that entered the study period in 2017 with a test-optional or flexible policy (no sample college had a test-free policy until 2021). We excluded "always test-optional" colleges in the main models since we only have outcome data for these institutions after they had already adopted a policy, making them an inappropriate comparison group. In the remaining sample of 157 selective colleges, there are six

colleges that adopted a test-optional/flexible policy between 2018 and 2020. The rest of the colleges in the sample either never adopted a test-optional policy (i.e., were always test requiring) or adopted a test-optional policy at the same time in 2021. The six colleges that adopted test-optional policies during the study period (and before the main group of adopters in 2021) could bias TWFE results since they are used as a comparison group for later adopters and their difference in outcomes includes pre- and post-treatment observations. To understand the extent to which these comparisons bias estimates, we conducted a Goodman-Bacon (2021) decomposition analysis, which showed that 9-20% of the weighting in estimates came from comparing later adopters to early adopters. This generally small percentage of total weight is not surprising since only 6 institutions adopted a test-optional policy between 2018 and 2020.

In addition to TWFE, we used two event study estimators that are robust to differential treatment timing and heterogeneous treatment effects to explore whether results are similar to TWFE results: Sun and Abraham (2021) using the *eventstudyinteract* package in Stata (Sun, 2024), and Gardner (2022) using the *did2s* package in Stata (Butts & Gardner, 2022). Event study approaches in practice do not yet support continuous or categorical treatment variables, although theoretical advances are being made (e.g., Callaway et al., 2024), so we focus event studies on the first policy variable of interest, a binary variable indicating the presence of any type of test-optional policy.

Limitations

Before presenting results, we discuss several limitations of our data and analyses to offer context in interpreting findings. First, we emphasize that our findings cannot be interpreted causally. While we employ a quasi-experimental research design and our estimates adjust for many features of colleges that are likely to shape the outcomes we examine, it is unlikely that

colleges' decisions to adopt test-optional policies and what type of test-optional policy to adopt are exogenously determined. Rather, the decision for a college or a state system of higher education to go test-optional during the pandemic was deeply connected to local, state, regional, and national political contexts. Indeed, interviews of admissions leaders during the pandemic indicate that colleges' decisions to remain test-optional are connected to politics, governance, and competition with other institutions (Wong et al., 2023). If the same factors that led an institution to go test optional or to stay test requiring during the pandemic also related to selectivity or enrollment outcomes, our results will be biased.

At the same time, the pandemic itself dramatically altered enrollment patterns, leading to declines in enrollment overall, especially at community colleges, and, in particular, among Black students (National Student Clearinghouse, 2022). As a result, any analyses examining changes during the pandemic period will reflect not only the impact of a particular policy change but also the impact of the pandemic itself and the social and economic inequities that the pandemic exacerbated. While our findings cannot be interpreted causally, they do offer exploratory evidence regarding how various approaches to test-optional admissions during the pandemic relate to selectivity and enrollment outcomes. In doing so, they point to future areas of research that can generate more specific causal estimates and offer implications for how colleges can design equity-minded college entrance exam policies.

Another concern is that the study focuses on selective colleges and examines selectivity outcomes, specifically the number of applications and admit rate. This may bias our estimates since we select on the dependent variable (i.e., understanding selectivity outcomes at already selective colleges). This sample is appropriate for studying the extent to which admissions policies regarding standardized tests relate to these types of outcomes since they receive far more

applications from qualified students than they have seats available, and therefore use college entrance exams in a generally similar manner. Nonetheless, findings related to selectivity should be interpreted with this in mind.

Another limitation of our study is that we rely on enrollment data since we cannot observe application or admissions data by race/ethnicity or income. Currently, IPEDS does not collect data on the number of applicants or the number of admits by race/ethnicity, so we are not able to observe how test-optional policies relate to prospective students' decisions to submit an application or colleges' decisions about admission. While it would be useful to understand how test-optional policies shape decisions to apply and decisions about who is admitted, our study offers information regarding how these policies relate to students' eventual enrollment patterns. Our study is also limited to how IPEDS categorizes race/ethnic identity and requires colleges to report data. Previous studies have indicated that practices regarding reporting race/ethnicity data varies widely across institution types (Ford et al., 2020). Similarly, our study is limited to examining enrollment among low-income students by using receipt of the federal Pell Grant as a proxy, which is a rough indicator of low-income status (Rosinger & Ford, 2019).

Finally, our study focuses on selective colleges—colleges that admit less than half of applicants—and there are relatively few of these institutions. As a result, when we looked at variations in test-optional approaches by institution type (i.e., private colleges, moderately selective colleges), we had some scenarios where our analysis relied on very small cell sizes. For example, very few highly selective colleges within our sample had test-optional policies with restrictions on who could apply test optional. As a result, we placed these findings in Appendix Tables A5-A7 and discuss the general patterns that emerged from these analyses in the main text while noting that the small sample size means results are noisy and make it impossible to draw

broad conclusions. While these limitations together indicate our results should be interpreted with caution, our study also offers the first and most detailed evidence to date regarding test-optional implementation during the pandemic and its implications for selectivity and enrollment.

Findings

Growth and Variation in Test-Optional Admissions During the Pandemic

In descriptive analyses to answer RQ1 and RQ2, we found a widespread, though not complete, movement toward "test-optional" admissions at selective colleges during the pandemic. Just over 90% of selective colleges (n = 168) had some type of test-optional policy for applicants applying to enroll in fall 2021. Just 9.7% (n = 18) of selective colleges in our sample continued to require standardized test scores in 2021. These institutions included several smaller religious institutions (e.g., Kentucky Christian University, Emmanuel College) as well as larger selective public colleges, such as the University of Arkansas at Pine Bluff and the State University System of Florida (e.g., University of Florida, Florida State University, University of Central Florida, University of South Florida, Florida Agricultural and Mechanical University), which as a system continued to require test scores in the admissions process. The shift toward "test-optional" admissions at most other selective colleges in 2021 nonetheless reflected a widespread and immediate transition in admissions policy. Prior to 2021, just 18.8% of selective colleges (n = 35) had implemented some type of test-optional policy.

While these figures reflect a general movement toward test-optional admissions during the pandemic, policy implementation differed across selective colleges. Most of the "test-optional" policies that were in place during the pandemic were temporary or operated on a pilot basis. We found that just 29.2% of "test-optional" colleges (n = 49) in 2021 had made a permanent change to their admissions policy (including those colleges that had a made

permanent shift prior to the pandemic). In addition, we found that most of the selective colleges that altered their testing requirements during the pandemic did so temporarily, at least initially. Among selective colleges that previously required test scores for admissions consideration, just 15% (n = 20) announced a permanent shift to a "test-optional" policy during the pandemic, though many later revised or extended their policies.

Selective colleges also differed in the type of test-optional policy they implemented during the pandemic. In 2021, 10.2% (n = 19) of selective colleges were test-free, 76.3% (n = 142) were test-optional, 3.8% (n = 7) were test-flexible, and 9.7% (n = 18) continued to require test scores from applicants. Figure 1 shows the number of selective colleges that were test-optional, test-flexible, test-free, and test-requiring between 2017 and 2021. The figure highlights the rapid change in admissions testing policies that occurred during the pandemic: between 2017 and 2020, a small but growing number of selective colleges turned to test-optional admissions (growing from 22 to 26 colleges during those years), a steady number used test-flexible admissions (growing from 7 to 9 over the four years leading up to the pandemic), while just over 80% of selective colleges (151 the year prior to the pandemic) required test scores, and no selective colleges in the sample were test free.

[Figure 1 Here]

The first full admissions cycle following the pandemic's start represented a dramatic shift in admissions testing policy with the widespread use of test-optional admissions and the appearance of test-free admissions at one-in-ten selective colleges. The maps in Figure 2 show the location of selective colleges in our sample and are shaded according to the type of "test-optional" policy each college had in 2021: Panel A shows whether a college had any type of

"test-optional" policy, Panel B shows the type of policy, Panel C shows whether the policy

extended to all applicants, and Panel D shows whether the policy extended to scholarships.

[Figure 2 Here]

Panels A and B show that most test-requiring institutions were located in the southern

part of the United States, particularly in Florida (where the State University System of Florida

continued to required college entrance exams for admission), while the majority of test-free

institutions were located on the west coast, particularly in California (where the University of

California and California State University systems enacted test-free admissions).

On their websites, colleges typically placed the burden of determining the necessity of

submitting a test score on applicants. We found colleges often advised students regarding the

submission of test scores, using language like "Students who feel that their standardized test

scores will be beneficial to the review process are encouraged to submit their scores as part of

the application process." This statement typically stood alone with little to no context to help

students decide on the potential benefits or risks associated with submitting a test score or not. In

contrast, the following public university was exceptionally clear when they noted that:

> Test-optional can mean different things at different schools. At the [university], you will
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> not be disadvantaged for sending low scores or for not sending scores. In fact, when
>
> reading your application, the reviewers will not see your test scores, if provided.
>
> However, high test scores (1400 SAT/31 ACT or above) *may* be considered for a handful
>
> of students who may not otherwise be admitted.

As Panel C of Figure 2 shows, most "test-optional" policies during the pandemic applied

to *all* first-year applicants, but 13.7% of "test-optional" colleges (n = 23) required SAT or ACT

scores from international applicants, homeschooled applicants, applicants below some GPA

threshold, and/or applicants to specific programs. Even at colleges that were "test-optional" for all applicants, some still *strongly recommended* or *encouraged* some groups of students to submit scores, potentially adding to confusion among applicants over whether to take or submit test scores.

In addition, even if the SAT and ACT were optional for admissions, some colleges still required scores for other processes at the college, such as merit scholarship consideration or matriculation. Panel D in Figure 2 shows whether colleges were test requiring, test-optional for admissions only, or test-optional for admissions and scholarships. Just over 15.5% of colleges with "test-optional" admissions (n = 26) during the pandemic continued to require test scores for scholarship consideration. One college, for example, informed students that "ACT and/or SAT scores are NOT required for admission to the College. However, test scores are considered for entry to select programs and some scholarships." In these cases, students who had not taken the SAT or ACT or who did not submit scores were not considered for entry to honors programs as a first-year student and/or for merit scholarships.

We found that ten selective colleges with some kind of test-optional policy in 2021 noted that they required matriculating students to submit test scores, indicating that even though test scores were optional for the admissions process, students would need to take the SAT or ACT to enroll at the college. For example, one of the earliest colleges to employ test-optional admissions prior to the pandemic noted that "Because standardized test results are used for academic counseling and placement as well as for the College's ongoing research into the relationship between standardized testing and success at [the college], all entering first-year students must submit scores over the summer prior to matriculating at [the college]." Another college used similar language in their matriculation policy, emphasizing that academic advising and internal

research on testing and student outcomes necessitated the submission of an official test score for all entering first-year students.

Further, even if scores were ultimately optional for scholarship consideration and/or matriculation, the language on websites was often confusing or unclear regarding whether students should submit scores. For example, one college noted that it "will observe its test-optional decision over the next 4 years. For this reason, and because standardized tests may be used as a foundation for class placement, all entering students will be asked to submit their scores, even if they are admitted through test-optional means." In this case, it was unclear whether students without an SAT or ACT score would be able to matriculate.

Test-Optional Admissions and Selectivity and Enrollment Outcomes During the Pandemic

We turn next to findings from analyses that explore the extent to which test-optional policies relate to selectivity and enrollment outcomes (RQ3). Table 3 shows TWFE results for our binary variable indicating whether a college had any type of test-optional policy in a given year (RQ3). Results in the first column for each outcome come from models that include only the treatment variable of interest and college and year fixed effects; results in the second column additionally include the full set of time-varying covariates. Panel A shows results for all sample colleges, Panel B for private colleges, Panel C for public colleges, Panel D for highly selective colleges, and Panel E for moderately selective colleges.

[Table 3 Here]

In our full sample, we found evidence that the adoption of any type of test-optional policy was associated with an increase in Black student enrollment. Among Black students, we found that test-optional adoption was associated with a 13 to 19% increase in the number of students enrolled, depending on whether we adjusted for time-varying covariates. We also found some

evidence that test-optional adoption was associated with a decrease in admit rate and an increase in Pell Grant recipients and Latinx student enrollment, but these findings were not significant across specifications.

When we examined the relationship between the adoption of any type of test-optional policy and selectivity and enrollment outcomes across institution types, something interesting emerged: we found suggestive evidence that gains in access among Black students in Panel A occurred at private colleges, and in particular, were concentrated in moderately selective colleges (admit rate 30-50%) while we did not see consistent gains in access at highly selective colleges (admit rate less than 30%). These highly selective colleges saw increases in the number of applications received and increases in Pell Grant recipient enrollment, but the Pell Grant finding was not significant across specifications. We also found the adoption of any type of test-optional policy was associated with a decrease in enrollment among Asian American students at highly selective colleges.

Figure 3 shows event study results for the full analytic sample of colleges (Appendix Figures A1-A3 show event study results for private, highly selective, and moderately selective colleges; we did not examine public colleges separately for this analysis since none adopted test-optional admissions between 2018 and 2020). Event study results generally support the main conclusions from TWFE results: following the adoption of any type of test-optional policy, results for the full analytic sample show some evidence of increases in enrollment among Black students, though these gains may not occur immediately and could be driven by the small number of institutions with test-optional policies prior to 2021. Once again, we found evidence that private colleges, most of colleges in our sample, saw decrease in admit rate, while enrollment among Black students and Pell Grant recipients increased following adoption, though

these findings are not always statistically significant, so we interpret them as suggestive (Appendix Figure A1). Highly selective colleges in our sample, on average, tended to see increases in applications and decreases in admit rate without corresponding gains in access among Black students, though there was suggestive evidence of a positive association with Pell Grant enrollment for policies that were in place for longer (Appendix Figure A2). Event study results do not indicate the same decrease in enrollment among Asian American students that we found in TWFE models. Meanwhile, event studies suggest moderately selective colleges may have seen access gains among Black students, though again these were not always statistically significant and were seen in policies that are in place for longer (Appendix Figure A3), similar to TWFE results.

[Figure 3 Here]

We next examined how variation in how colleges implemented test-optional policies during the pandemic related to selectivity and enrollment outcomes (RQ4). Table 4 shows TWFE results for each outcome (results in the first column exclude time-varying covariables; results in the second column include time-varying covariates), and the panels show results for each treatment variable of interest: Panel A shows results for type of testing policy; Panel B shows results for whether a test-optional policy had restrictions on who can apply under the policy; and Panel C shows results for whether a test-optional policy extended to scholarship consideration (referent category is test requiring for all panels). We present results for the full analytic sample of colleges in the main text; results by institution type are shown in Appendix Tables A5-A7. For the latter, we discuss general patterns that emerged but note that cell sizes are small, making it difficult to draw broad conclusions.

[Table 4 Here]

As shown in Panel A, test-optional and flexible policies were associated with a small decrease in admit rate and an increase in enrollment among Black students, relative to test-requiring policies. These findings were consistent across model specifications; we found that test-optional policies were also associated with an increase in Pell Grant recipient enrollment, but this finding was not significant across specifications. We found some evidence that test-free policies, relative to test-requiring policies, were associated with increased numbers of applications as well as increased enrollment among Pell Grant recipient, Black, and Latinx students, though these findings were not stable across model specifications. Once again, in analyses by institution type (presented in Appendix Tables A5-A7), we found suggestive evidence that gains in access among Black students were concentrated in moderately selective colleges (under either a test-free or test-optional policy), while highly selective colleges saw gains in applications with either type of policy; the presence of either test-optional or test-free policies at highly selective colleges were associated with decreased enrollment among Asian American students. Results by institution type are only suggestive but reflect similar patterns to our main findings.

Results for restrictions on who can apply under test-optional policy (Panel B) show that both decreases in admit rate and enrollment among Black students appear to be limited to colleges that extend test-optional policies to *all* applicants. Once again, we had small cell sizes for findings by institutional type but saw the same sort of pattern: access gains tended to occur at moderately selective colleges and when a policy extended to all applicants, and selectivity gains were stronger at highly selective colleges, regardless of whether there were restrictions on who could apply test optional, without simultaneous increases in access (and decreased enrollment among Asian American students).

Results for extensions of test-optional policies to scholarship consideration (Panel C) indicate that gains in both selectivity and access (among Black students, and less conclusively, among Pell and Latinx students) are seen when policies extend to scholarship consideration. Again, estimates are noisier and only suggestive for institution type analyses, but we see a similar pattern of access gains with policies that extend to scholarship consideration at moderately selective institutions while highly selective colleges that extend test optional to scholarships see gains in applications but not in access (and decreases in access among Asian American students).

Discussion

Findings from our study highlight the large-scale and widespread adoption of test-optional policies at selective colleges during the pandemic but also point to substantial variation in implementation. Testing policies looked very different across colleges during the pandemic in the extent to which test scores were optional, whether the policy was temporary or permanent, and whether the policy extended to all applicants or to other college processes, such as scholarship consideration and matriculation. Even if colleges were test-optional, we found that information about test scores for prospective students, their families, and high school counselors was often unclear or confusing.

In total, we have found that what is often billed as "test-optional" is in reality a suite of different policy options; for example, test scores are still being required for certain students and for scholarship consideration at some colleges. In addition, sometimes individual websites have information about test score policies that do not align with system-level test score policies. These mixed messages are likely to be confusing for students and high school counselors. Even at colleges that are test-optional for admission, website language is not always clear whether

prospective applicants should submit scores. Colleges often "strongly encourage" or "strongly recommend" that students, or certain groups of students, submit college entrance exam scores. A handful of colleges that were test-optional during the pandemic required students who matriculated to submit college entrance exam scores, indicating that even though students could be admitted without test scores, they could not enroll without scores. These confusing and sometimes contradictory messages regarding test-optional policies likely makes the new college admissions landscape even more difficult to navigate.

For the future of test-optional admissions, we find evidence of a sustained large-scale movement toward test-optional admissions with several state systems moving away from testing, but we also find many colleges enacted temporary policies and plan to return to using college entrance exams. Indeed, many Ivy League and similarly selective institutions have announced a return to requiring tests while others have maintained test-optional or even test-free policies (Knox, 2024). We also found that many test-optional colleges, even during the pandemic, required a test score for scholarship consideration: in the short-term, this may mean students with financial need will either need to take the exam or will be excluded from financial aid; in the long-term, it indicates that while the use of standardized test scores in the admissions process is in flux, their use for awarding institutional aid might be more deeply entrenched.

Given the widespread variation we found in the implementation of test-optional admissions and that the majority of colleges in our sample adopted test-optional policies in response to an urgent disaster, the COVID-19 pandemic, we note that institutions that adopted test-optional policies were likely unable to prepare for the transition to test-optional admissions in the same way institutions that adopted prior to 2021 were able to. This means one of the most

important elements of understanding how test-optional admissions relates to selectivity and enrollment outcomes during the pandemic is how individual institutions implemented the policy.

In analyses of variation in policy implementation, we notice consistent trends where moderately selective institutions appear able to increase Black student enrollment while highly selective institutions experienced increases in applications. While we found suggestive evidence of increases in Pell Grant recipient enrollment at highly selective colleges, this was not consistently significant, and we found consistent evidence of reductions in Asian American student enrollment. This latter finding may be driven by a decrease in high-achieving Asian American applicants to selective colleges that occurred in 2020-2021, though the shift was relatively small in magnitude (Kim et al., 2024). Given different trends in outcomes by institution types, it may be the abrupt shift to test-optional admissions, coupled with differences in how highly selective institutions run their admissions processes (Taylor et al., 2024), created an environment where test-optional admissions were conducted in a way that did not consistently increase access.

This study aligns with prior research showing evidence that test-optional policies can expand access at moderately selective institutions (Bennett, 2022) but that they may also, in some contexts, be associated with increased institutional selectivity (Belasco et al., 2015). In addition, our study offers additional nuance to prior findings by considering how variation in test-optional implementation during the pandemic relate to selectivity and enrollment outcomes. Here, we found evidence that gains in enrollment among Black students seem to occur when test-optional policies extend to all applicants and scholarship consideration.

While we found evidence of gains in enrollment among Black students, we also do not find consistent evidence of similar gains among other racially minoritized students or Pell Grant

recipients. Further, while the 13-19% gain in enrollment among Black students is notable (the average test-optional college in our sample enrolled 130 Black students, representing a potential increase of 17 to 25 students), it does not dramatically alter deeply inequitable enrollment patterns or racial and economic inequities writ large. Thus, our research also speaks to other admissions research indicating narrowly focused, single policy changes in admissions may lead to some meaningful gains but are hardly enough by themselves to dramatically challenge deeply entrenched inequities in higher education (Park et al., 2023; Posselt, 2020; Rosinger et al., 2021).

Implications for Future Research

Our study provides an early glimpse of test-optional policy implementation and its outcomes during the pandemic and offers several directions for future research. Subsequent studies might focus on the post-pandemic period and examine colleges' decisions to continue test-optional policies or to reinstate college entrance exam requirements. Qualitative studies in this area would offer insight into the various influences that shape admissions policies, and indeed, early work in this area already notes the influence of factors such as competition, governance structures, and overall workload (Slay et al., 2022; Wong et al., 2023). Future work might offer additional insight regarding colleges' decisions to reinstate testing requirements. Quantitative studies could examine the predictors and consequences of college entrance exam policy decisions.

Our current study is limited in that the focus is on enrollment, a downstream outcome associated with admissions policies. Currently, IPEDS does not collect data from colleges on applications and admissions by race/ethnicity. As a result, scholars cannot examine how the implementation of test-optional policies relate to the composition of applications a college receives or the admission offers a college makes, which would offer information on more

immediate outcomes associated with test-optional policies. For example, this information would offer valuable insight into how students respond to test-optional policies and, in turn, the decisions that institutions make regarding who to admit. A current effort would require institutions to report this information to IPEDS to support greater transparency in the admissions process and evaluation of admissions processes for civil rights (U.S. Department of Education, 2024). Research using such data would provide additional evidence regarding how colleges can design more equitable admissions processes.

Future research might also examine college entrance exam policies in the context of the SSFA vs. Harvard University and the University of North Carolina at Chapel Hill Supreme Court decisions that restrict the use of race-conscious admissions. The present study period ends in 2021, the most recent year for which IPEDS data on college enrollment was available. But future research might consider how the 2023 rulings shape test-optional decisions if colleges seek to create more equitable admissions processes in a more constrained environment.

Implications for Policy and Practice

Based on our findings, we offer several policy recommendations aimed at helping students, families, and high school counselors more easily navigate the admissions process. First, we urge colleges and state systems of higher education (who sometimes determine admissions policies) to offer consistent and clear information across institutional websites regarding what type of testing policy the college has, who is eligible to apply under the testing policy (and who is restricted from applying under it), and whether and how test scores are used for other processes, such as merit scholarship consideration, honors program selection, or matriculation. We also urge admissions professional organizations to enhance efforts to clarify language across institutions regarding what is meant by test-optional, test-flexible, and test-free admissions and

encourage institutions to use consistent language in describing their testing policy. Finally, we note that colleges should be cautious in labeling SAT or ACT scores as simultaneously "optional" and "strongly recommended," which is likely to add stress and confusion for students as they navigate an already complex college admissions process.

Our study demonstrates that test-optional policies are one way colleges—particularly in an environment that severely constrains race-conscious admissions—can support the enrollment of Black students who have historically been excluded from many selective colleges. However, the host of test-optional policy options available to admissions professionals are likely to mediate this relationship: policies that extend to all applicants and scholarship consideration are likely to relate to more equitable enrollment outcomes. Yet while most selective sample colleges with test-optional policies during the pandemic were test-optional for all applicants and/or for scholarship consideration, 23 colleges placed restriction on who could apply test optional, and 26 colleges considered test scores for merit scholarships, highlighting the deeply entrenched role standardized test scores play in admission for some student populations and for scholarship consideration. We urge institutions to carefully consider the suite of policy options available and the implications of policy implementation for equity.

At the same time, some institutions, especially the most selective institutions in our study, enacted test-optional policies during the pandemic and, on average, did not experience similar gains in enrollment among Black students. Perhaps this is one reason, in addition to the increased applications these offices now receive, Ivy League and similarly selective institutions have recently reinstated college entrance exam requirements (Knox, 2024). Some argue that reinstating test score requirements can help institutions identify high-scoring students who would otherwise not have been noticed in the admissions process (Deming, 2024; Leonhardt, 2024).

While we do not find evidence or believe that test-optional policies are a panacea for creating racial equity in higher education—far more extensive efforts are needed—we are also skeptical that returning to requiring tests will *expand* diversity. These same institutions have used standardized test scores in the admissions process for decades (Karabel, 2005) and have consistently enrolled relatively small numbers of racially minoritized and low-income students (Astin & Oseguera, 2004; Bastedo & Jaquette, 2011; Chetty et al., 2017; Posselt et al., 2012).

While our study demonstrates that test-optional policies—especially at moderately selective colleges and when the policies extend to all applicants and scholarship consideration—can promote racial equity in college admissions, we hardly view them as the panacea for racial equity, especially in a higher education characterized by repressive legalism that views race-conscious policies with suspicion regardless of whether they are required to do so (Garces & Bilyalov, 2019). Rather, we encourage admissions practitioners to carefully consider how admissions practices reproduce racial inequity and seek out additional practices, such as contextualized review (Bastedo et al., 2023; Mabel et al., 2022), that can mitigate racial biases present in test scores and other admissions considerations, such as extracurricular activities, letters of recommendation, essays, and interviews (Kim et al., 2024; Park et al. 2023, Rosinger et al., 2021). Finally, alongside others (e.g., Taylor et al., 2024), we encourage public policymakers at the state and federal levels to lower the stakes associated with selective college admissions decisions by increasing public funding for public higher education. State support for public colleges and universities has waned in recent decades (Kunkle, 2023, Rosinger et al., 2022; Taylor, 2022; Taylor & Cantwell, 2019) and has never been equitable for public HBCUs (Harris, 2022; U.S. Department of Education, 2023). We urge increased investment in public colleges

and universities, which supports college access and success (Cummings et al., 2021) so all

students can access high-quality, low-cost college options.

[1] Five sample institutions did not report admit rates for one of the three years, but we included them based on their two-year average.

[2] We added 1 to enrollment values when logging if any institution reported 0 enrollment among that population of students to avoid creating missing values.

[3] We combined these policy types due to there being just seven test-flexible colleges in 2021.

[4] We added 1 to variable values when logging if any institution reported 0 for a variable to avoid creating missing values.

[5] For two colleges that were missing admit rate data in 2017, we used 2018 admit rate data to categorize them as either highly selective or moderately selective. We categorized Cooper Union for the Advancement of Science and Art as highly selective (2018 admit rate 13%) and Purdue University Northwest as moderately selective (2018 admit rate 35%).

[6] Appendix Table A2 shows findings from TWFE models with all sample colleges. Coefficients from these models are generally similar in signs and significance to those in the main text.

[7] Appendix Table A1 shows results from Goodman-Bacon decomposition analyses using the *ddtiming* command in Stata (Goldring, 2019). No public colleges in the sample adopted a test-optional policy between 2018 and 2020, so we do not show results from public college models.

[8] We also estimated TWFE models that excluded the 6 colleges that adopted test-optional policies between 2018 and 2020. Appendix Tables A3 and A4 show results from these analyses for RQ3 (Table A3) and RQ4 (Table A4). Coefficients from these models are generally similar in signs and significance to those presented in the main text. No public colleges in the sample adopted a test-optional policy between 2018 and 2020, so we do not show results from public college models.

[9] For each of the estimators, we also drew upon Stata code and resources available through Cunningham (2024).

[10] We conducted additional sensitivity analysis to determine what might be driving the finding among Asian American students. In particular, we wanted to explore whether the finding was driven by changes in other specific reporting categories. We found this finding to be specific to Asian students even when Native American Hawaiian Islander students were excluded from this figure. We did not find any corresponding changes in non-resident enrollment or enrollment among students who race/ethnicity was unknown.

[11] We did not estimate event studies for the sample of public colleges because all public colleges in our sample adopted test-optional policies in the same year (2021). Therefore, we did not have the same concerns with differential treatment timing biasing TWFE results for these colleges.

References

Allensworth, E. M., & Clark, K. (2020). High school GPAs and ACT scores as predictors of

    college completion: Examining assumptions about consistency across high schools.

    Educational Researcher, *49*(3), 198-211.

Alon, S., & Tienda, M. (2007). Diversity, opportunity, and the shifting meritocracy in higher

    education. *American Sociological Review*, *72*(4), 487–511.

Astin, A. W., & Oseguera, L. (2004). The declining" equity" of American higher education.

    Review of Higher Education, *27*(3), 321-341.

Au, W. (2013). Hiding behind high-stakes testing: Meritocracy, objectivity and inequality in U.S.

    education. *The International Education Journal: Comparative Perspectives*, *12*(2), 7–19.

Au, W. (2020). Testing for Whiteness?How High-Stakes, Standardized Tests Promote Racism,

    Undercut Diversity, and Undermine Multicultural Education. In H. P. Baptiste & J. H.

    Writer (Eds.), *Visioning Multicultural Education* (1st ed., pp. 99–113). Routledge.

Avery, C. (2013). *Evaluation of the college possible program: Results from a randomized*

    controlled trial (No. w19562). National Bureau of Economic Research.

Baker, R., Klasik, D., & Reardon, S. F. (2018). Race and stratification in college enrollment over

    time. *AERA Open*, *4*(1).

Bastedo, M. N., Bowman, N. A., Glasener, K. M., & Kelly, J. L. (2018). What are we talking

    about when we talk about holistic review? Selective college admissions and its effects on

    low-SES students. *The Journal of Higher Education*, *89*(5), 782–805.

Bastedo, M. N., Glasener, K. M., Deane, K. C., & Bowman, N. A. (2019). Contextualizing the

    SAT: Experimental evidence on college admission recommendations for low-SES

    applicants. *Educational Policy*, 0895904819874752.

Bastedo, M. N., & Jaquette, O. (2011). Running in place: Low-income students and the

    dynamics of higher education stratification. *Educational Evaluation and Policy Analysis*,

    33(3), 318–339.

Bastedo, M. N., Umbricht, M., Bausch, E., Byun, B. K., & Bai, Y. (2023). Contextualized high

    school performance: Evidence to inform equitable holistic, test-optional, and test-free

    admissions policies. *AERA Open*, *9*, 23328584231197413.

Belasco, A. S., Rosinger, K. O., & Hearn, J. C. (2015). The test-optional movement at America's

    selective liberal arts colleges: A boon for equity or something else?. *Educational*

    Evaluation and Policy Analysis, *37*(2), 206-223.

Bennett, C. T. (2022). Untested admissions: Examining changes in application behaviors and

    student demographics under test-optional policies. *American Educational Research*

    Journal, *59*(1), 180-216.

Buchmann, C., DiPrete, T. A., & McDaniel, A. (2008). Gender inequalities in education. *Annual*

    Review of Sociology, *34*(1), 319–337.

Butts, K., & Gardner, J. (2022). {did2s}: Two-stage difference-in-differences. *The R Journal,*

    14(3), 162-173.

Byun, S. Y., & Park, H. (2012). The academic success of East Asian American youth: The role

    of shadow education. *Sociology of Education*, *85*(1), 40-60.

Callaway, B., Goodman-Bacon, A., & Sant'Anna, P. H. (2024). *Difference-in-differences with a*

    continuous treatment (No. w32117). National Bureau of Economic Research.

Camara, W. J., & Schmidt, A. E. (1999). *Group differences in standardized testing and social*

    stratification. Report no. 99-5. College Entrance Examination Board.

Chetty, R., Deming, D. J., & Friedman, J. N. (2023). *Diversifying society's leaders? The causal effects of admission to highly selective private colleges*. National Bureau of Economic Research.

Chetty, R., Friedman, J. N., Saez, E., Turner, N., & Yagan, D. (2017). *Mobility report cards: The role of colleges in intergenerational mobility*. National Bureau of Economic Research.

U.S. Department of Education. (2024). *Coalition letter to support changes to IPEDS*. https://www.regulations.gov/comment/ED-2024-SCC-0040-0607

Cummings, K., Laderman, S., Lee, J., Tandberg, D., & Weeden, D. (2021). *Investigating the impacts of state higher education appropriations and financial aid.* State Higher Education Executive Officers Association. https://sheeo.org/wp-content/uploads/2021/05/SHEEO_ImpactAppropationsFinancialAid.pdf

Deming, D. (2024). The worst way to do college admissions. *The Atlantic*. https://www.theatlantic.com/ideas/archive/2024/03/standarized-testing-requirements-act-sat/677667/

DiMaggio, P. J., & Powell, W. W. (1983). The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 147-160.

Ford, K., Rosinger, K., & Zhu, Q. (2020). What do we know about "race unknown"?. *Educational Researcher*, *49*(5), 376-381.

Fryer Jr, R. G., & Levitt, S. D. (2004). Understanding the black-white test score gap in the first two years of school. *Review of Economics and Statistics*, *86*(2), 447-464.

Furuta, J. (2017). Rationalization and student/school personhood in US college admissions: The rise of test-optional policies, 1987 to 2015. *Sociology of Education*, *90*(3), 236-254.

Garces, L. M., & Bilyalov, D. (2019). Navigating the quicksand: How postsecondary administrators understand the influence of affirmative action developments on racial diversity work. *Teachers College Record*, *121*(3), 1-40.

Gardner, J. (2022). Two-stage differences in differences. *arXiv preprint arXiv:2207.05943*.

Goodman-Bacon, A. (2021). Difference-in-differences with variation in treatment timing. *Journal of Econometrics*, *225*(2), 254–277.

Grodsky, E., Warren, J. R., & Felts, E. (2008). Testing and social stratification in American education. *Annual Review of Sociology*, *34*(1), 385–404.

Harris, A. (2022). *The state must provide: The definitive history of racial inequality in American higher education.* Harper Collins Publishers.

Hedges, L. V., & Nowell, A. (1999). Changes in the Black-white gap in achievement test scores. *Sociology of Education*, *72*(2), 111-135.

Karabel, J. (2005). *The chosen: The hidden history of admission and exclusion at Harvard, Yale, and Princeton*. Mariner Books.

KewalRamani, A., Gilbertson, L., Fox, M. A., & Provasnik, S. (2007). *Status and trends in the education of racial and ethnic minorities*. Institute of Education Sciences, National Center for Education Statistics.

Kim, B. H., Armstrong, E., Freeman, M., Hughes, R., Nolan, S., Kajikawa, T., & Sinofsky, M. (2024). *Application trends following the end of race-conscious admissions*. Common App. https://www.commonapp.org/files/Common-App-Race-Ethnicity-SCOTUS-2024.pdf

Kim, B. H., Park, J. J., Lo, P., Baker, D. J., Wong, N., Breen, S., Truong, H., Zheng, J., Rosinger, K. O., & Poon, O. (2024). *Inequity and college applications: Assessing*

differences and disparities in letters of recommendation from school counselors with natural language processing. Annenberg Institute at Brown University. https://edworkingpapers.com/index.php/ai24-953

Knox, L. (2024). Harvard and Caltech restore test requirements. *Inside Higher Ed*. https://www.insidehighered.com/news/admissions/traditional-age/2024/04/12/sudden-move-harvard-caltech-return-test-requirements

Korbin, J. L., Sathy, V., & Shaw, E. J. (2006). View of subgroup performance differences on the SAT reasoning test (Research Report 2006-5). *New York: College Board*.

Kunkle, K. (2023). *State higher education finance: FY 2023.* State Higher Education Executive Officers Association. https://shef.sheeo.org/report/

Leonhardt, D. (2024). The misguided war on the SAT. *The New York Times*. https://www.nytimes.com/2024/01/07/briefing/the-misguided-war-on-the-sat.html

Mabel, Z., Hurwitz, M. D., Howell, J., & Perfetto, G. (2022). Can standardizing applicant high school and neighborhood information help to diversify selective colleges? *Educational Evaluation and Policy Analysis*, *44*(3), 505–531.

National Student Clearinghouse. (2022). *Stay informed, fall 2021 enrollment*. National Student Clearinghouse.

Park, J. J., Kim, B. H., Wong, N., Zheng, J., Breen, S., Lo, P., Baker, D. J., Rosinger, K. O., Nguyen, M. H., & Poon, O. (2023). *Inequality beyond standardized tests: Trends in extracurricular activity reporting in college applications across race and class*. https://edworkingpapers.com/ai23-749

Posselt, J. R. (2020). *Equity in science: Representation, culture, and the dynamics of change in graduate education*. Stanford University Press.

Posselt, J. R., Jaquette, O., Bielby, R., & Bastedo, M. N. (2012). Access without equity: Longitudinal analyses of institutional stratification by race and ethnicity, 1972–2004. *American Educational Research Journal*, *49*(6), 1074–1111.

Rosinger, K. O. (2020). *Toppling testing? COVID-19, test-optional college admissions and implications for equity*. Third Way. https://www.thirdway.org/report/toppling-testing-covid-19-test-optional-college-admissions-and-implications-for-equity

Rosinger, K. O., & Ford, K. S. (2019). Pell grant versus income data in postsecondary research. *Educational Researcher*, *48*(5), 309–315.

Rosinger, K., Ford, K., & Choi, J. (2021). The role of selective college admissions criteria in interrupting or reproducing racial and economic inequities. *The Journal of Higher Education, 92*(1), 31-55.

Rosinger, K., Ford, K., Posselt, J., & Choi, J. (2022). Exploring the impact of GRE-accepting admissions on law school diversity and selectivity. *Review of Higher Education, 46*(1), 109-144.

Roth, J., Sant'Anna, P. H., Bilinski, A., & Poe, J. (2023). What's trending in difference-in-differences? A synthesis of the recent econometrics literature. *Journal of Econometrics*, *235*(2), 2218–2244.

Rubin, P. G., & Canché, M. S. G. (2019). Test-flexible admissions policies and student enrollment demographics: Examining a public research university. *The Review of Higher Education*, *42*(4), 1337-1371.

Saboe, M., & Terrizzi, S. (2019). SAT optional policies: Do they influence graduate quality, selectivity or diversity?. *Economics Letters*, *174*, 13-17.

Slay, K. E., Dickason, C., & Addison, A. (2022). *Exploring the work of college admissions professionals: Administrative burden and (in)equity in the era of COVID-19*. 47th Annual Conference of the Association for Education Finance and Policy.

Soares, J. A. (2007). *The power of privilege: Yale and America's elite colleges*. Stanford University Press.

Soares, J. A. (Ed.). (2012). *SAT wars: The case for test-optional college admissions*. Teachers College Press.

Soares, J. A. (Ed.). (2020). *The scandal of standardized tests: Why we need to drop the SAT and ACT*. Teachers College Press.

Stevens, M. L., Armstrong, E. A., & Arum, R. (2008). Sieve, incubator, temple, hub: Empirical and theoretical advances in the sociology of higher education. *Annual Review of Sociology*, *34*(1), 127–151.

Sun, L. (2024). *Eventstudyinteract.* https://github.com/lsun20/EventStudyInteract

Sun, L., & Abraham, S. (2021). Estimating dynamic treatment effects in event studies with heterogeneous treatment effects. *Journal of Econometrics*, *225*(2), 175-199.

Taylor, B. J. (2022). *Wrecked: Deinstitutionalization and partial defenses in state higher education policy*. Rutgers University Press.

Taylor, B. J., & Cantwell, B. (2019). *Unequal higher education: Wealth, status, and student opportunity*. Rutgers University Press.

Taylor, B. J., Rosinger, K., & Ford, K. S. (2024). The shape of the sieve: Which components of the admissions application matter most in particular institutional contexts? *Sociology of Education*.

The National Center for Fair & Open Testing (FairTest). (2023). *1800 colleges and universities are test-optional for fall 2023 applicants*. https://fairtest.org/

Torche, F. (2011). Is a college degree still the great equalizer? Intergenerational mobility across levels of schooling in the United States. *American Journal of Sociology*, *117*(3), 763–807.

U.S. Department of Education Office for Civil Rights. (2023). *Secretaries of Education, Agriculture call on governors to equitably fund land-grant HBCUs* [Press Release]. https://www.ed.gov/news/press-releases/secretaries-education-agriculture-call-governors-equitably-fund-land-grant-hbcus

Wong, N., Poon, O., Park, J.J., Zheng, J., & Lo, P. (2023). *Test-optional policies in the era of COVID-19: Responses from the college admissions community*. College Admissions Futures Co-Laborative. www.cafcolab.org

Zuberi, T. (2001). *Thicker than blood: How racial statistics lie*. University of Minnesota Press.

Table 1. List of test-optional data elements and definitions

Data element	Definition
test_free	institution's college entry exam admissions policy for first-year students entering during the 2021-2022 academic year: Test-free (first-year applicants do not submit any standardized test scores and the institution does not look at standardized test scores in reviewing applications for first-year applicants)
test_opt	institution's college entry exam admissions policy for first-year students entering during the 2021-2022 academic year: Test-optional (first-year applicants can choose whether to submit the SAT or ACT; the institution uses information applicants supply when reviewing applications)
test_flex	institution's college entry exam admissions policy for first-year students entering during the 2021-2022 academic year: Test-flexible (first-year applicants can choose to submit an alternate assessment or materials, such as a portfolio or SAT subject tests, in place of the SAT or ACT)
required	institution's college entry exam admissions policy for first-year students entering during the 2021-2022 academic year: Test-required (first-year applicants are required to submit an SAT or ACT score)
restrict_none	who is eligible to apply under the policy? All first-year applicants (code as 0 if any restrict_ variables are 1)
restrict_intl	who is eligible to apply under the policy? All first-year applicants except international students
restrict_homeschool	who is eligible to apply under the policy? All first-year applicants except homeschooled students
restrict_acad	who is eligible to apply under the policy? All first-year applicants who meet an academic threshold (e.g., class rank, GPA)
restrict_geog	who is eligible to apply under the policy? All first-year applicants who live in a specified geographic location, such as the county or state where your institution is located
restrict_other	who is eligible to apply under the policy? Other
temp	was the college entrance exam policy institution implemented for first-year students entering during the 2021-2022 academic year: Temporary (2021-2022 only)
pilot	was the college entrance exam policy institution implemented for first-year students entering during the 2021-2022 academic year: A pilot program (enacted for a specified time beyond the class entering during the 2021-2022 academic year)
perm	was the college entrance exam policy institution implemented for first-year students entering during the 2021-2022 academic year: Permanent OR coded as 1 if policy existed prior to 2021 incoming class
other	was the college entrance exam policy institution implemented for first-year students entering during the 2021-2022 academic year: Other
honors_placement	did institution use standardized test scores for placement into honors coursework for first-year students entering during the 2021-2022 academic year?
scholarships	did institution use standardized test scores for awarding financial aid or scholarships for first-year students entering during the 2021-2022 academic year?
prior_policy	did institution have test-free, test-optional, or test-flexible college entry exam admissions policy for first-year students entering prior to the 2021-2022 academic year; should be coded based on what policy was for students entering Fall 2017
year_adopt	year prior policy was enacted (defined as beginning of academic year when students were first eligible to enroll under the policy); should be coded based on policy for students entering Fall 2017
enrollment	test-scores required for enrollment

Table 2. Descriptive statistics by college admissions testing policy features

Variables	Always test-requiring	Ever any type of optional	Ever test-optional or flexible	Ever test-free	Optional for some	Optional for all	Optional for only admission	Optional for scholarships also
Number of applications	12772.39	22277.84	17795.83	52357.12	8053.43	24236.61	7209.19	25346.42
	(18163.91)	(23582.33)	(17081.14)	(36086.48)	(15287.42)	(23858.55)	(10909.56)	(24282.63)
Admit rate	0.42	0.32	0.32	0.35	0.45	0.30	0.43	0.30
	(0.11)	(0.17)	(0.17)	(0.13)	(0.13)	(0.16)	(0.14)	(0.16)
Pell Grant recipient enrollment	576.26	407.15	273.69	1304.32	293.28	423.02	235.80	443.40
	(649.57)	(503.01)	(302.85)	(644.60)	(278.08)	(524.98)	(261.79)	(536.30)
Black student enrollment	249.01	129.73	126.82	149.23	159.88	125.52	152.38	126.05
	(296.11)	(197.07)	(208.34)	(88.40)	(214.50)	(194.33)	(274.78)	(177.87)
Latinx student enrollment	363.34	266.02	162.84	959.57	119.92	286.38	68.63	305.37
	(618.28)	(401.86)	(235.24)	(570.04)	(166.57)	(420.49)	(95.28)	(428.53)
Asian student enrollment	119.21	300.71	196.36	1002.21	86.18	330.61	52.89	352.61
	(231.77)	(484.13)	(310.68)	(775.20)	(283.62)	(498.68)	(131.14)	(516.63)
White student enrollment	875.81	646.89	614.29	866.06	355.41	687.51	280.41	712.88
	(1359.38)	(744.00)	(744.68)	(705.07)	(901.10)	(710.84)	(495.68)	(746.88)
Retention rate	70.80	86.38	86.11	88.20	70.49	88.59	71.97	89.67
	(16.64)	(12.65)	(13.30)	(6.71)	(12.29)	(11.02)	(12.25)	(9.96)
Full-time equivalent (FTE) undergraduates	10489.99	7789.40	6048.49	19492.20	3961.89	8322.75	2677.73	8820.41
	(15917.92)	(8713.68)	(6863.81)	(10641.75)	(6944.41)	(8805.93)	(3780.61)	(9057.03)
Instructional expenditures per FTE	8944.01	42657.58	43765.43	35210.37	15984.59	46374.31	18035.97	48203.54
	(4910.36)	(61558.37)	(62040.47)	(57993.03)	(10082.04)	(64739.32)	(28484.02)	(65744.43)
Student services expenditures per FTE	4624.32	9373.72	9970.76	5360.35	5347.66	9934.73	5854.69	10204.92
	(3474.26)	(7600.71)	(7581.42)	(6457.26)	(2700.24)	(7889.91)	(3020.74)	(8088.54)
State appropriations per FTE	5976.88	3791.00	3003.97	9081.57	6435.87	3422.45	2997.22	3675.62
	(7546.97)	(7015.53)	(6986.70)	(4471.50)	(9256.48)	(6569.35)	(7760.34)	(6387.08)
Tuition and fees	14573.13	35571.27	38844.80	13565.87	19351.82	37831.36	24882.35	38355.51
	(9728.37)	(20359.56)	(18971.15)	(15074.35)	(14363.38)	(20051.84)	(14216.58)	(20502.91)
Average institutional aid per student	8546.92	26549.46	28988.31	10182.12	13655.74	28349.08	16466.73	29039.63
	(5040.78)	(17322.30)	(16613.03)	(12459.70)	(10017.65)	(17368.39)	(10601.98)	(17630.87)
Percent of students receiving institutional aid	75.06	62.91	66.31	40.09	67.88	62.22	79.90	59.48
	(24.72)	(24.89)	(23.55)	(21.52)	(29.70)	(24.09)	(27.10)	(22.91)
Average state aid per student	4423.84	5068.77	4814.65	6757.21	4733.59	5116.01	4531.72	5211.36
	(2039.20)	(2696.20)	(2470.18)	(3444.93)	(2073.62)	(2770.89)	(1670.94)	(2869.40)
Percent of students receiving state aid	57.55	24.81	20.94	50.89	42.52	22.35	39.89	21.25
	(25.68)	(24.26)	(21.43)	(26.12)	(16.62)	(24.14)	(21.36)	(23.52)
Admit rate (lagged)	0.41	0.32	0.31	0.34	0.43	0.30	0.43	0.29
	(0.10)	(0.15)	(0.16)	(0.11)	(0.11)	(0.15)	(0.14)	(0.15)
Number of observations	90	695	605	90	85	610	120	565
Number of colleges	18	139	121	18	17	122	24	113

Table 3. Two-way fixed effects regression results for any type of test-optional policy

	Applications (ln)		Admit rate		Pell Grant recipient enrollment (ln)		Black student enrollment (ln)		Latinx student enrollment (ln)		Asian student enrollment (ln)		White student enrollment (ln)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
					Panel A: All sample colleges									
Any type of test-optional policy	0.093	0.056	-0.043	-0.045*	0.150**	0.069	0.193***	0.137*	0.129*	0.019	0.038	-0.023	0.017	-0.015
	(0.056)	(0.044)	(0.022)	(0.020)	(0.053)	(0.048)	(0.056)	(0.054)	(0.065)	(0.068)	(0.071)	(0.082)	(0.032)	(0.036)
Observations	783	773	783	773	783	774	784	774	784	774	784	774	784	774
					Panel B: Private colleges									
Any type of test-optional policy	0.175**	0.136**	-0.073**	-0.077**	0.174*	0.104	0.220**	0.166*	0.151	0.025	0.017	-0.059	0.047	0.029
	(0.066)	(0.043)	(0.026)	(0.024)	(0.070)	(0.064)	(0.073)	(0.074)	(0.081)	(0.080)	(0.083)	(0.112)	(0.038)	(0.053)
Observations	559	550	559	550	558	550	559	550	559	550	559	550	559	550
					Panel C: Public colleges									
Any type of test-optional policy	-0.098	-0.147*	0.045	0.038	0.087	0.058	0.100	0.044	0.073	0.013	0.112	0.107	-0.051	-0.027
	(0.074)	(0.071)	(0.038)	(0.031)	(0.068)	(0.066)	(0.073)	(0.071)	(0.112)	(0.103)	(0.138)	(0.145)	(0.052)	(0.056)
Observations	224	223	224	223	225	224	225	224	225	224	225	224	225	224
					Panel D: Highly selective colleges									
Any type of test-optional policy	0.243*	0.182**	-0.064	-0.050	0.105*	0.001	0.147	0.071	-0.040	-0.143*	-0.164**	-0.207**	0.016	0.021
	(0.109)	(0.060)	(0.038)	(0.025)	(0.047)	(0.035)	(0.173)	(0.150)	(0.033)	(0.063)	(0.057)	(0.068)	(0.033)	(0.042)
Observations	305	298	305	298	305	298	305	298	305	298	305	298	305	298
					Panel E: Moderately selective colleges									
Any type of test-optional policy	-0.008	-0.031	-0.008	-0.017	0.140	0.066	0.182***	0.124*	0.162	0.052	0.096	0.051	0.016	-0.003
	(0.070)	(0.057)	(0.030)	(0.027)	(0.071)	(0.059)	(0.054)	(0.052)	(0.086)	(0.088)	(0.097)	(0.106)	(0.051)	(0.052)
Observations	478	475	478	475	478	476	479	476	479	476	479	476	479	476
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes. Sample excludes 29 colleges that adopted a test-optional policy prior to study period. Referent category is test requiring. Any type of test-optional policy is defined as a test-flexible, test-optional, or test-free policy in place in a given year. Covariates include full-time equivalent (FTE) undergraduate enrollment (logged), instructional expenditures per FTE (logged), student services expenditures per FTE (logged), state appropriations per FTE, tuition and fees (logged), average institutional aid per student (logged), percent of students receiving institutional aid, average amount of state aid per student (logged), percent of students receiving state aid, and admit rate (lagged). All models include college and year fixed effects. Robust standard errors clustered at the college level in parentheses.
*** p<0.001, ** p<0.01, * p<0.05

Table 4. Two-way fixed effects regression results by variation in test-optional policy implementation

	Applications (ln)		Admit rate		Pell Grant recipient enrollment (ln)		Black student enrollment (ln)		Latinx student enrollment (ln)		Asian student enrollment (ln)		White student enrollment (ln)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Panel A: Type of test-optional policy														
Test-optional or flexible	0.086	0.052	-0.045*	-0.047*	0.139*	0.062	0.182**	0.131*	0.119	0.015	0.044	-0.019	0.014	-0.014
	(0.057)	(0.045)	(0.023)	(0.020)	(0.054)	(0.048)	(0.056)	(0.055)	(0.066)	(0.069)	(0.073)	(0.082)	(0.034)	(0.038)
Test-free	0.149*	0.091	-0.024	-0.032	0.240**	0.134	0.287**	0.191	0.220**	0.056	-0.022	-0.066	0.047	-0.028
	(0.060)	(0.058)	(0.027)	(0.025)	(0.078)	(0.072)	(0.100)	(0.103)	(0.083)	(0.083)	(0.080)	(0.100)	(0.045)	(0.060)
Observations	783	773	783	773	783	774	784	774	784	774	784	774	784	774
Panel B: Restriction on who can apply under test-optional policy														
Test-optional for some	-0.209	-0.171	0.050	0.035	-0.017	-0.026	0.079	0.069	-0.020	-0.063	0.046	0.039	-0.119	-0.139
	(0.120)	(0.105)	(0.048)	(0.045)	(0.103)	(0.088)	(0.115)	(0.099)	(0.177)	(0.152)	(0.145)	(0.148)	(0.146)	(0.135)
Test-optional for all	0.124*	0.084	-0.052*	-0.055**	0.168**	0.082	0.205***	0.146**	0.145*	0.030	0.037	-0.031	0.032	0.001
	(0.056)	(0.043)	(0.022)	(0.020)	(0.053)	(0.047)	(0.056)	(0.055)	(0.064)	(0.066)	(0.071)	(0.083)	(0.030)	(0.034)
Observations	783	773	783	773	783	774	784	774	784	774	784	774	784	774
Panel C: Extension of test-optional policy to scholarships														
Test-optional for admissions	-0.191	-0.170*	0.035	0.032	-0.013	0.011	0.084	0.085	-0.068	-0.055	-0.271*	-0.245	-0.207*	-0.166
	(0.099)	(0.085)	(0.045)	(0.044)	(0.087)	(0.070)	(0.095)	(0.088)	(0.139)	(0.125)	(0.133)	(0.129)	(0.097)	(0.085)
Test-optional for admissions/ scholarships	0.135*	0.098*	-0.055*	-0.061**	0.176**	0.082	0.213***	0.150**	0.161*	0.033	0.082	0.016	0.055	0.020
	(0.056)	(0.042)	(0.022)	(0.020)	(0.053)	(0.047)	(0.056)	(0.055)	(0.065)	(0.067)	(0.070)	(0.080)	(0.032)	(0.033)
Observations	781	771	781	771	781	772	782	772	782	772	782	772	782	772
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes. Sample excludes 29 colleges that adopted a test-optional policy prior to study period. Referent category is test requiring. Covariates include full-time equivalent (FTE) undergraduate enrollment (logged), instructional expenditures per FTE (logged), student services expenditures per FTE (logged), state appropriations per FTE, tuition and fees (logged), average institutional aid per student (logged), percent of students receiving institutional aid, average amount of state aid per student (logged), percent of students receiving state aid, and admit rate (lagged). All models include college and year fixed effects. Robust standard errors clustered at the college level in parentheses.
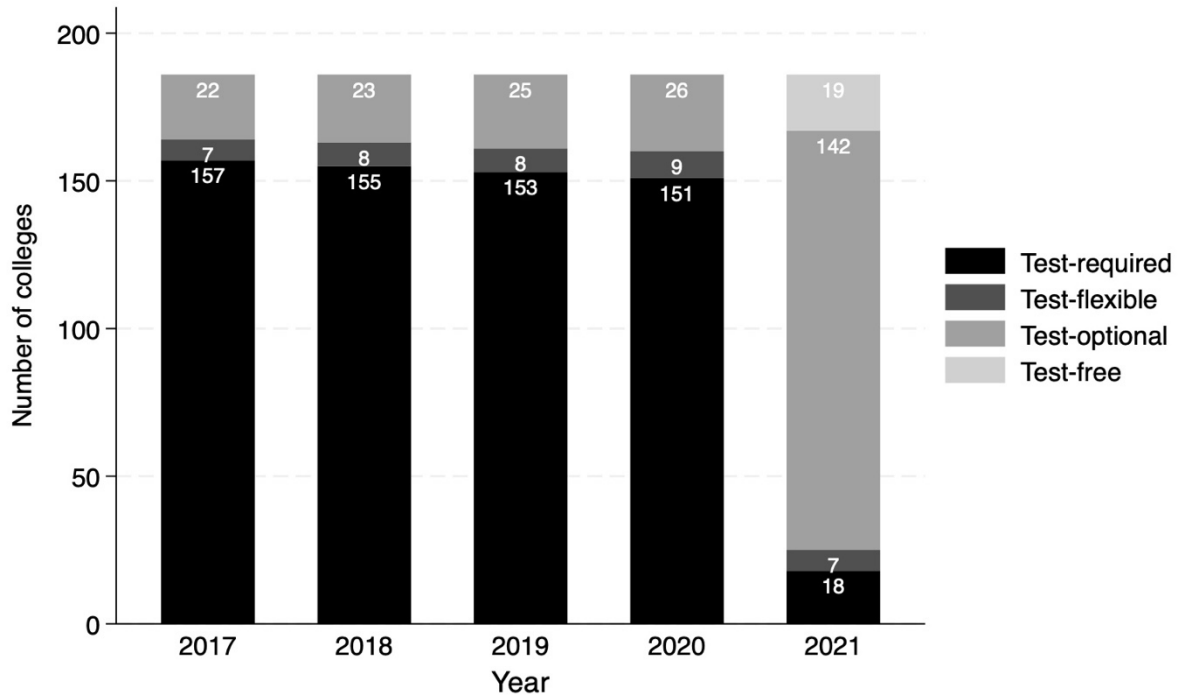*** $p<0.001$, ** $p<0.01$, * $p<0.05$

Figure 1. Selective college admissions testing policies, 2017-2021

Notes. Sample includes 186 selective colleges (defined as colleges with <50% admit rate for three consecutive years). Testing policy information comes from authors' review of historical admissions websites and test-optional policy announcements.

Figure 2. Variation in "test-optional" policy implementation, 2021

Panel A
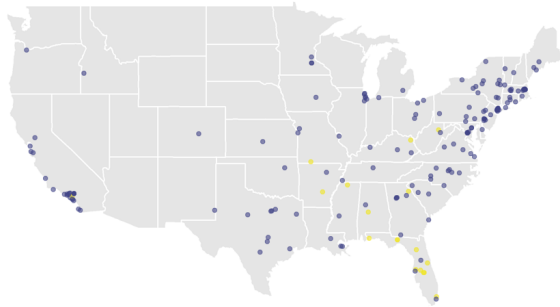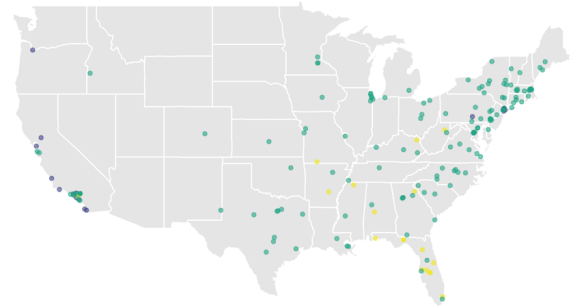
Panel B

Panel C

Panel D
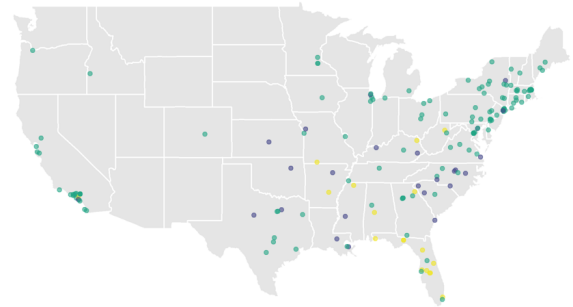
Notes. Sample includes 186 selective colleges (defined as colleges with <50% admit rate for three consecutive years). Testing policy information comes from authors' review of historical admissions websites and test-optional policy announcements.

Figure 3. Event study analyses
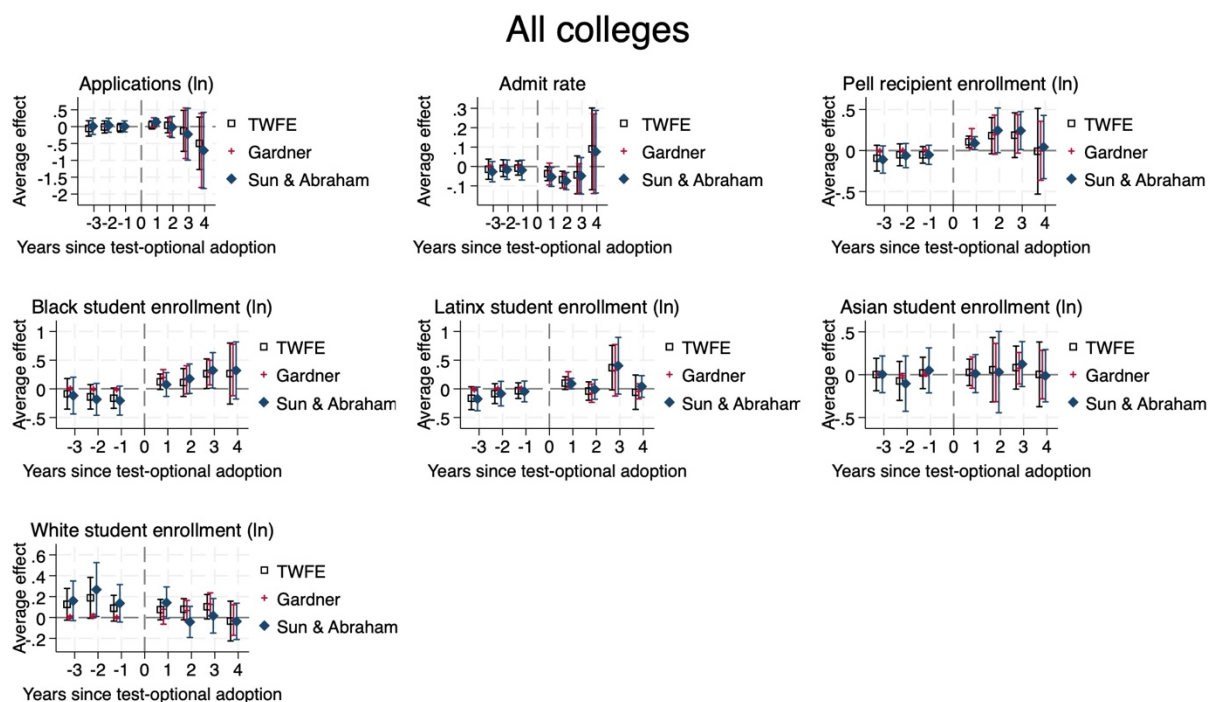
Notes. Sample excludes 29 colleges that adopted a test-optional policy prior to study period. Covariates for all models include full-time equivalent (FTE) undergraduate enrollment (logged), instructional expenditures per FTE (logged), student services expenditures per FTE (logged), state appropriations per FTE, tuition and fees (logged), average institutional aid per student (logged), percent of students receiving institutional aid, average amount of state aid per student (logged), percent of students receiving state aid, and admit rate (lagged). All models include college and year fixed effects. Robust standard errors clustered at the college level in parentheses.

Table A1. Goodman-Bacon decomposition results showing weights and average DiD estimates for each comparison group

	All outcomes	Applications (logged)	Admit rate	Pell Grant recipient enrollment	Black student enrollment (logged)	Latinx student enrollment (logged)	Asian student enrollment (logged)	White student enrollment (logged)
	Weight	Average DiD estimate	Average DiD estimate	Average DiD estimate	Average DiD estimate	Average DiD estimate	Average DiD estimate	Average DiD estimate
Panel A: All sample colleges								
Earlier vs. later groups	0.193	-0.075	-0.037	0.157	0.198	0.002	0.050	0.042
Later vs. earlier groups	0.117	0.221	-0.075	0.167	0.143	0.145	0.084	0.042
Treated vs. never treated	0.69	0.119	-0.039	0.144	0.200	0.162	0.026	0.006
Panel B: Private colleges								
Earlier vs. later groups	0.266	-0.055	-0.033	0.164	0.210	0.019	0.068	0.062
Later vs. earlier groups	0.163	0.240	-0.083	0.177	0.191	0.175	0.081	0.056
Treated vs. never treated	0.571	0.264	-0.088	0.177	0.232	0.206	-0.025	0.038
Panel C: Highly selective colleges								
Earlier vs. later groups	0.447	0.069	-0.008	0.125	0.133	-0.048	-0.107	0.060
Later vs. earlier groups	0.205	0.063	-0.011	-0.039	0.057	-0.077	-0.175	-0.019
Treated vs. never treated	0.349	0.572	-0.168	0.163	0.218	-0.009	-0.231	-0.021
Panel D: Moderately selective colleges								
Earlier vs. later groups	0.115	-0.243	-0.060	0.182	0.235	0.065	0.194	0.002
Later vs. earlier groups	0.090	0.330	-0.115	0.306	0.192	0.303	0.256	0.081
Treated vs. never treated	0.795	-0.012	0.011	0.115	0.174	0.160	0.064	0.010

Notes. Sample excludes 29 colleges that adopted a test-optional policy prior to study period. Referent category is test requiring. Robust standard errors clustered at the college level in parentheses.
*** p<0.001, ** p<0.01, * p<0.05

Table A2. Two-way fixed effects regression results for any type of test-optional policy, full sample

	Applications (ln)		Admit rate		Pell Grant recipient enrollment (ln)		Black student enrollment (ln)		Latinx student enrollment (ln)		Asian student enrollment (ln)		White student enrollment (ln)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Panel A: All sample colleges													
Any type of test-optional policy	0.052	0.040	-0.028	-0.032*	0.128***	0.091**	0.227***	0.177***	0.132*	0.065	0.022	-0.034	-0.011	-0.049
	(0.036)	(0.031)	(0.016)	(0.015)	(0.035)	(0.032)	(0.045)	(0.043)	(0.056)	(0.049)	(0.051)	(0.050)	(0.038)	(0.034)
Observations	926	916	926	916	928	918	929	918	929	918	929	918	929	918
	Panel B: Private colleges													
Any type of test-optional policy	0.081*	0.077*	-0.043*	-0.046**	0.139***	0.110**	0.268***	0.223***	0.154*	0.086	0.007	-0.065	0.001	-0.037
	(0.041)	(0.031)	(0.018)	(0.016)	(0.039)	(0.036)	(0.052)	(0.050)	(0.062)	(0.050)	(0.057)	(0.059)	(0.046)	(0.041)
Observations	702	693	702	693	703	694	704	694	704	694	704	694	704	694
	Panel C: Public colleges													
Any type of test-optional policy	-0.098	-0.147*	0.045	0.038	0.087	0.058	0.100	0.044	0.073	0.013	0.112	0.107	-0.051	-0.027
	(0.074)	(0.071)	(0.038)	(0.031)	(0.068)	(0.066)	(0.073)	(0.071)	(0.112)	(0.103)	(0.138)	(0.145)	(0.052)	(0.056)
Observations	224	223	224	223	225	224	225	224	225	224	225	224	225	224
	Panel D: Highly selective colleges													
Any type of test-optional policy	0.175**	0.155***	-0.061*	-0.054**	0.110*	0.057	0.160	0.117	0.012	-0.037	-0.170***	-0.176***	-0.078	-0.088*
	(0.057)	(0.039)	(0.027)	(0.020)	(0.045)	(0.041)	(0.087)	(0.084)	(0.035)	(0.042)	(0.040)	(0.041)	(0.043)	(0.039)
Observations	285	279	285	279	285	279	285	279	285	279	285	279	285	279
	Panel E: Moderately selective colleges													
Any type of test-optional policy	-0.040	-0.053	0.007	0.002	0.114*	0.073	0.233***	0.163**	0.157	0.079	0.088	0.028	0.013	-0.020
	(0.049)	(0.041)	(0.022)	(0.021)	(0.047)	(0.041)	(0.056)	(0.052)	(0.080)	(0.072)	(0.074)	(0.074)	(0.057)	(0.052)
Observations	581	578	581	578	583	580	584	580	584	580	584	580	584	580
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes. Referent category is test requiring. Any type of test-optional policy is defined as a test-flexible, test-optional, or test-free policy in place in a given year. Covariates include full-time equivalent (FTE) undergraduate enrollment (logged), instructional expenditures per FTE (logged), student services expenditures per FTE (logged), state appropriations per FTE, tuition and fees (logged), average institutional aid per student (logged), percent of students receiving institutional aid, average amount of state aid per student (logged), percent of students receiving state aid, and admit rate (lagged). All models include college and year fixed effects. Robust standard errors clustered at the college level in parentheses.
*** p<0.001, ** p<0.01, * p<0.05

Table A3. Two-way fixed effects regression results for any type of test-optional policy, sample excludes always adopters and pre-2021 adopters

	Applications (ln)		Admit rate		Pell Grant recipient enrollment (ln)		Black student enrollment (ln)		Latinx student enrollment (ln)		Asian student enrollment (ln)		White student enrollment (ln)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Panel A: All sample colleges													
Any type of test-optional policy	0.129	0.070	-0.039	-0.045	0.141*	0.050	0.199**	0.146*	0.164*	0.056	0.027	-0.045	0.010	-0.023
	(0.075)	(0.060)	(0.030)	(0.027)	(0.067)	(0.065)	(0.073)	(0.073)	(0.074)	(0.091)	(0.098)	(0.115)	(0.038)	(0.043)
Observations	753	743	753	743	753	744	754	744	754	744	754	744	754	744
	Panel B: Private colleges													
Any type of test-optional policy	0.280**	0.195**	-0.091*	-0.101**	0.173	0.090	0.234*	0.178	0.208*	0.093	-0.026	-0.137	0.047	0.040
	(0.094)	(0.068)	(0.039)	(0.033)	(0.104)	(0.094)	(0.114)	(0.116)	(0.102)	(0.127)	(0.134)	(0.181)	(0.047)	(0.065)
Observations	529	520	529	520	528	520	529	520	529	520	529	520	529	520
	Panel C: Public colleges													
Any type of test-optional policy	-0.098	-0.147*	0.045	0.038	0.087	0.058	0.100	0.044	0.073	0.013	0.112	0.107	-0.051	-0.027
	(0.074)	(0.071)	(0.038)	(0.031)	(0.068)	(0.066)	(0.073)	(0.071)	(0.112)	(0.103)	(0.138)	(0.145)	(0.052)	(0.056)
Observations	224	223	224	223	225	224	225	224	225	224	225	224	225	224
	Panel D: Highly selective colleges													
Any type of test-optional policy	0.583***	0.447***	-0.173**	-0.146**	0.147	-0.104	0.236	0.070	-0.010	-0.288**	-0.239*	-0.341*	0.001	0.053
	(0.088)	(0.057)	(0.050)	(0.045)	(0.118)	(0.073)	(0.473)	(0.449)	(0.029)	(0.096)	(0.119)	(0.162)	(0.044)	(0.149)
Observations	290	283	290	283	290	283	290	283	290	283	290	283	290	283
	Panel E: Moderately selective colleges													
Any type of test-optional policy	0.001	-0.033	0.012	0.000	0.114	0.051	0.172**	0.132*	0.162	0.074	0.068	0.027	0.015	0.004
	(0.080)	(0.063)	(0.034)	(0.032)	(0.078)	(0.071)	(0.060)	(0.064)	(0.091)	(0.104)	(0.117)	(0.129)	(0.058)	(0.058)
Observations	463	460	463	460	463	461	464	461	464	461	464	461	464	461
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes. Sample excludes 29 colleges that adopted a test-optional policy prior to study period and 6 colleges that adopted test-optional policies between 2017 and 2020. Referent category is test requiring. Any type of test-optional policy is defined as a test-flexible, test-optional, or test-free policy in place in a given year. Covariates include full-time equivalent (FTE) undergraduate enrollment (logged), instructional expenditures per FTE (logged), student services expenditures per FTE (logged), state appropriations per FTE, tuition and fees (logged), average institutional aid per student (logged), percent of students receiving institutional aid, average amount of state aid per student (logged), percent of students receiving state aid, and admit rate (lagged). All models include college and year fixed effects. Robust standard errors clustered at the college level in parentheses.
*** p<0.001, ** p<0.01, * p<0.05

Table A4. Two-way fixed effects regression results by variation in test-optional policy implementation, sample excludes always adopters and pre-2021 adopters

	Applications (ln)		Admit rate		Pell Grant recipient enrollment (ln)		Black student enrollment (ln)		Latinx student enrollment (ln)		Asian student enrollment (ln)		White student enrollment (ln)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Panel A: Type of test-optional policy														
Test-optional or flexible	0.122	0.068	-0.042	-0.047	0.127	0.042	0.185*	0.140	0.151*	0.053	0.037	-0.037	0.005	-0.020
	(0.076)	(0.061)	(0.031)	(0.027)	(0.068)	(0.066)	(0.074)	(0.075)	(0.076)	(0.092)	(0.100)	(0.116)	(0.042)	(0.046)
Test-free	0.175*	0.077	-0.021	-0.029	0.229**	0.104	0.289**	0.186	0.246**	0.081	-0.033	-0.102	0.039	-0.043
	(0.076)	(0.068)	(0.033)	(0.029)	(0.085)	(0.079)	(0.108)	(0.110)	(0.087)	(0.100)	(0.099)	(0.123)	(0.046)	(0.062)
Observations	753	743	753	743	753	744	754	744	754	744	754	744	754	744
Panel B: Restriction on who can apply under test-optional policy														
Test-optional for some	-0.173	-0.162	0.051	0.035	-0.020	-0.045	0.086	0.077	0.013	-0.031	0.033	0.009	-0.122	-0.146
	(0.129)	(0.111)	(0.051)	(0.049)	(0.109)	(0.094)	(0.123)	(0.105)	(0.179)	(0.160)	(0.157)	(0.163)	(0.145)	(0.131)
Test-optional for all	0.171*	0.106	-0.052	-0.058*	0.164*	0.066	0.215**	0.158*	0.186*	0.071	0.026	-0.055	0.029	-0.002
	(0.074)	(0.058)	(0.030)	(0.026)	(0.067)	(0.065)	(0.073)	(0.074)	(0.072)	(0.089)	(0.099)	(0.118)	(0.036)	(0.041)
Observations	753	743	753	743	753	744	754	744	754	744	754	744	754	744
Panel C: Extension of test-optional policy to scholarships														
Test-optional for admissions	-0.152	-0.146	0.035	0.029	-0.014	-0.004	0.093	0.097	-0.032	-0.020	-0.273	-0.259	-0.204*	-0.165
	(0.110)	(0.091)	(0.048)	(0.046)	(0.095)	(0.081)	(0.105)	(0.097)	(0.141)	(0.135)	(0.146)	(0.145)	(0.098)	(0.087)
Test-optional for admissions/ scholarships	0.187*	0.124*	-0.055	-0.065*	0.176**	0.065	0.225**	0.162*	0.206**	0.077	0.087	0.007	0.061	0.022
	(0.073)	(0.058)	(0.030)	(0.026)	(0.067)	(0.065)	(0.074)	(0.074)	(0.072)	(0.090)	(0.097)	(0.113)	(0.037)	(0.038)
Observations	751	741	751	741	751	742	752	742	752	742	752	742	752	742
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes. Sample excludes 29 colleges that adopted a test-optional policy prior to study period and 6 colleges that adopted test-optional policies between 2017 and 2020. Referent category is test requiring. Covariates include full-time equivalent (FTE) undergraduate enrollment (logged), instructional expenditures per FTE (logged), student services expenditures per FTE (logged), state appropriations per FTE, tuition and fees (logged), average institutional aid per student (logged), percent of students receiving institutional aid, average amount of state aid per student (logged), percent of students receiving state aid, and admit rate (lagged). All models include college and year fixed effects. Robust standard errors clustered at the college level in parentheses.
*** p<0.001, ** p<0.01, * p<0.05

Table A5. Two-way fixed effects regression results by variation in test-optional policy implementation, private colleges

	Applications (ln)		Admit rate		Pell Grant recipient enrollment (ln)		Black student enrollment (ln)		Latinx student enrollment (ln)		Asian student enrollment (ln)		White student enrollment (ln)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Panel A: Type of test-optional policy														
Test-optional or flexible	0.171*	0.132**	-0.072**	-0.076**	0.167*	0.097	0.209**	0.152*	0.147	0.019	0.017	-0.059	0.047	0.031
	(0.066)	(0.043)	(0.026)	(0.024)	(0.070)	(0.063)	(0.072)	(0.073)	(0.081)	(0.079)	(0.083)	(0.112)	(0.038)	(0.054)
Test-free	0.430***	0.367**	-0.085*	-0.079*	0.605**	0.449*	0.974***	0.912***	0.484**	0.320	0.035	-0.111	0.064	-0.053
	(0.123)	(0.112)	(0.040)	(0.032)	(0.216)	(0.225)	(0.096)	(0.100)	(0.145)	(0.170)	(0.231)	(0.232)	(0.218)	(0.226)
Observations	559	550	559	550	558	550	559	550	559	550	559	550	559	550
Panel B: Restriction on who can apply under test-optional policy														
Test-optional for some	-0.166	-0.130	0.021	0.002	-0.011	-0.001	0.196	0.165	0.149	0.076	-0.250	-0.288	-0.135	-0.134
	(0.141)	(0.121)	(0.068)	(0.068)	(0.140)	(0.109)	(0.168)	(0.144)	(0.143)	(0.128)	(0.184)	(0.236)	(0.260)	(0.251)
Test-optional for all	0.199**	0.157***	-0.079**	-0.083***	0.187**	0.111	0.221**	0.166*	0.152	0.021	0.036	-0.042	0.059	0.042
	(0.067)	(0.042)	(0.026)	(0.024)	(0.070)	(0.064)	(0.073)	(0.074)	(0.081)	(0.082)	(0.083)	(0.108)	(0.035)	(0.051)
Observations	559	550	559	550	558	550	559	550	559	550	559	550	559	550
Panel C: Extension of test-optional policy to scholarships														
Test-optional for admissions	-0.112	-0.076	0.012	-0.000	0.017	0.066	0.105	0.088	0.087	0.071	-0.330*	-0.308	-0.176	-0.105
	(0.108)	(0.101)	(0.053)	(0.052)	(0.104)	(0.077)	(0.114)	(0.110)	(0.116)	(0.098)	(0.159)	(0.172)	(0.117)	(0.107)
Test-optional for admissions/ scholarships	0.221**	0.180***	-0.086***	-0.092***	0.199**	0.111	0.238**	0.182*	0.162	0.015	0.072	-0.009	0.082*	0.057
	(0.068)	(0.041)	(0.025)	(0.025)	(0.070)	(0.065)	(0.073)	(0.075)	(0.082)	(0.085)	(0.081)	(0.106)	(0.039)	(0.052)
Observations	559	550	559	550	558	550	559	550	559	550	559	550	559	550
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes. Sample excludes colleges that adopted a test-optional policy prior to study period. Referent category is test requiring. Covariates include full-time equivalent (FTE) undergraduate enrollment (logged), instructional expenditures per FTE (logged), student services expenditures per FTE (logged), state appropriations per FTE, tuition and fees (logged), average institutional aid per student (logged), percent of students receiving institutional aid, average amount of state aid per student (logged), percent of students receiving state aid, and admit rate (lagged). All models include college and year fixed effects. Robust standard errors clustered at the college level in parentheses.
*** p<0.001, ** p<0.01, * p<0.05

Table A6. Two-way fixed effects regression results by variation in test-optional policy implementation, highly selective colleges

	Applications (ln)		Admit rate		Pell Grant recipient enrollment (ln)		Black student enrollment (ln)		Latinx student enrollment (ln)		Asian student enrollment (ln)		White student enrollment (ln)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
	Panel A: Type of test-optional policy													
Test-optional or flexible	0.241*	0.179**	-0.064	-0.050	0.098*	-0.002	0.140	0.065	-0.045	-0.145*	-0.159**	-0.202**	0.019	0.027
	(0.109)	(0.058)	(0.038)	(0.025)	(0.046)	(0.037)	(0.173)	(0.147)	(0.033)	(0.063)	(0.057)	(0.067)	(0.033)	(0.047)
Test-free	0.306*	0.318***	-0.065	-0.057*	0.271	0.123	0.320	0.282	0.072	-0.067	-0.297***	-0.375***	-0.057	-0.166
	(0.138)	(0.083)	(0.039)	(0.028)	(0.166)	(0.155)	(0.269)	(0.270)	(0.119)	(0.128)	(0.077)	(0.090)	(0.071)	(0.101)
Observations	305	298	305	298	305	298	305	298	305	298	305	298	305	298
	Panel B: Restriction on who can apply under test-optional policy													
Test-optional for some	0.271*	0.229**	-0.089*	-0.082**	0.026	0.076	0.126	0.140	0.052	0.054	-0.138*	-0.179	-0.017	0.032
	(0.112)	(0.068)	(0.039)	(0.027)	(0.049)	(0.051)	(0.181)	(0.168)	(0.036)	(0.070)	(0.059)	(0.090)	(0.032)	(0.079)
Test-optional for all	0.243*	0.181**	-0.064	-0.049	0.105*	-0.000	0.147	0.069	-0.041	-0.147*	-0.165**	-0.207**	0.016	0.021
	(0.109)	(0.060)	(0.038)	(0.025)	(0.047)	(0.036)	(0.174)	(0.150)	(0.033)	(0.063)	(0.057)	(0.068)	(0.033)	(0.042)
Observations	305	298	305	298	305	298	305	298	305	298	305	298	305	298
	Panel C: Extension of test-optional policy to scholarships													
Test-optional for admissions	-0.062	-0.109	-0.028	0.001	-0.018	-0.015	-0.242	-0.279	-0.087*	-0.088	-0.024	-0.006	-0.000	0.054
	(0.304)	(0.292)	(0.054)	(0.053)	(0.051)	(0.062)	(0.263)	(0.293)	(0.041)	(0.081)	(0.201)	(0.186)	(0.035)	(0.049)
Test-optional for admissions/ scholarships	0.254*	0.202**	-0.066	-0.053*	0.107*	0.002	0.159	0.094	-0.039	-0.146*	-0.168**	-0.220**	0.017	0.018
	(0.112)	(0.067)	(0.038)	(0.026)	(0.047)	(0.036)	(0.173)	(0.148)	(0.033)	(0.064)	(0.057)	(0.070)	(0.033)	(0.043)
Observations	304	297	304	297	304	297	304	297	304	297	304	297	304	297
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes. Sample excludes colleges that adopted a test-optional policy prior to study period. Referent category is test requiring. Covariates include full-time equivalent (FTE) undergraduate enrollment (logged), instructional expenditures per FTE (logged), student services expenditures per FTE (logged), state appropriations per FTE, tuition and fees (logged), average institutional aid per student (logged), percent of students receiving institutional aid, average amount of state aid per student (logged), percent of students receiving state aid, and admit rate (lagged). All models include college and year fixed effects. Robust standard errors clustered at the college level in parentheses.
*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

Table A7. Two-way fixed effects regression results by variation in test-optional policy implementation, moderately selective colleges

	Applications (ln)		Admit rate		Pell Grant recipient enrollment (ln)		Black student enrollment (ln)		Latinx student enrollment (ln)		Asian student enrollment (ln)		White student enrollment (ln)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Panel A: Type of test-optional policy														
Test-optional or flexible	-0.029	-0.035	-0.008	-0.017	0.124	0.062	0.166**	0.125*	0.144	0.048	0.104	0.051	0.005	-0.008
	(0.073)	(0.060)	(0.031)	(0.028)	(0.072)	(0.061)	(0.055)	(0.054)	(0.091)	(0.092)	(0.102)	(0.108)	(0.059)	(0.057)
Test-free	0.101	0.003	-0.009	-0.012	0.228**	0.098	0.270**	0.119	0.264**	0.084	0.054	0.052	0.074	0.037
	(0.065)	(0.062)	(0.033)	(0.032)	(0.087)	(0.068)	(0.101)	(0.108)	(0.097)	(0.090)	(0.098)	(0.128)	(0.053)	(0.065)
Observations	478	475	478	475	478	476	479	476	479	476	479	476	479	476
Panel B: Restriction on who can apply under test-optional policy														
Test-optional for some	-0.252*	-0.224	0.056	0.050	-0.001	-0.007	0.088	0.082	0.026	-0.018	0.099	0.103	-0.129	-0.119
	(0.127)	(0.115)	(0.052)	(0.053)	(0.115)	(0.099)	(0.117)	(0.099)	(0.190)	(0.163)	(0.161)	(0.170)	(0.156)	(0.144)
Test-optional for all	0.041	0.006	-0.021	-0.029	0.170*	0.081	0.203***	0.132*	0.192*	0.067	0.095	0.041	0.047	0.021
	(0.069)	(0.054)	(0.030)	(0.027)	(0.070)	(0.058)	(0.054)	(0.055)	(0.085)	(0.087)	(0.099)	(0.109)	(0.050)	(0.050)
Observations	478	475	478	475	478	476	479	476	479	476	479	476	479	476
Panel C: Extension of test-optional policy to scholarships														
Test-optional for admissions	-0.217*	-0.198*	0.043	0.040	-0.000	0.019	0.137	0.143	-0.032	-0.028	-0.281	-0.252	-0.239*	-0.177
	(0.106)	(0.086)	(0.052)	(0.053)	(0.104)	(0.082)	(0.095)	(0.084)	(0.159)	(0.143)	(0.149)	(0.143)	(0.110)	(0.095)
Test-optional for admissions/ scholarships	0.047	0.018	-0.022	-0.034	0.185**	0.085	0.200***	0.121*	0.221*	0.078	0.199*	0.138	0.097	0.059
	(0.070)	(0.054)	(0.029)	(0.026)	(0.069)	(0.058)	(0.056)	(0.057)	(0.086)	(0.088)	(0.095)	(0.102)	(0.054)	(0.051)
Observations	477	474	477	474	477	475	478	475	478	475	478	475	478	475
Covariates	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes. Sample excludes colleges that adopted a test-optional policy prior to study period. Referent category is test requiring. Covariates include full-time equivalent (FTE) undergraduate enrollment (logged), instructional expenditures per FTE (logged), student services expenditures per FTE (logged), state appropriations per FTE, tuition and fees (logged), average institutional aid per student (logged), percent of students receiving institutional aid, average amount of state aid per student (logged), percent of students receiving state aid, and admit rate (lagged). All models include college and year fixed effects. Robust standard errors clustered at the college level in parentheses.
*** $p<0.001$, ** $p<0.01$, * $p<0.05$

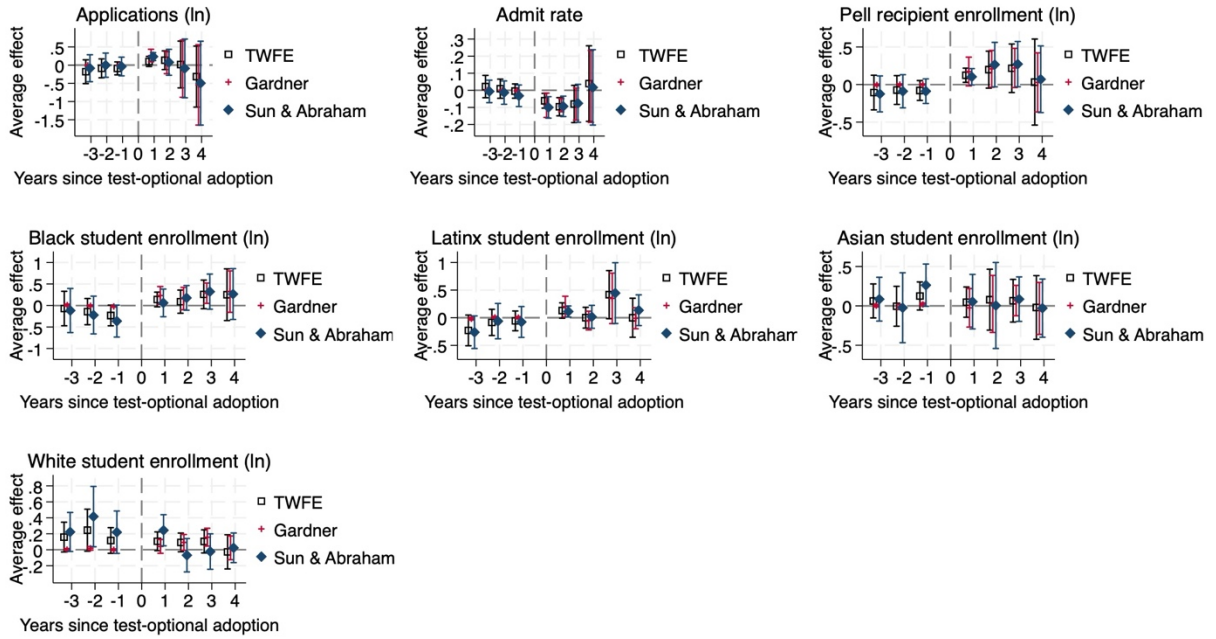Figure A1. Event study analyses, private colleges

Private colleges

Figure A2. Event study analyses, highly selective colleges
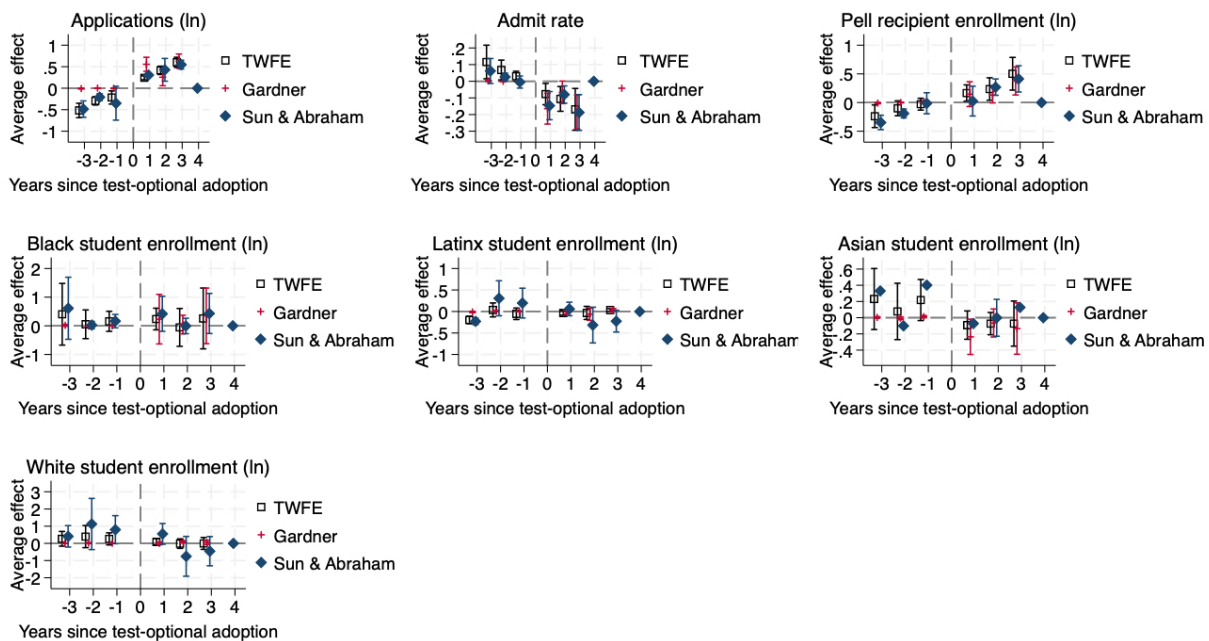
Figure A3. Event study analyses, moderately selective colleges

Moderately selective colleges