

Changes in Levels of Affirmative Action in College Admissions in Response to Statewide Bans and Judicial Rulings

Grant H. Blume

Mark C. Long

University of Washington

Affirmative action in college admissions was effectively banned in Texas by the Hopwood ruling in 1997, by voter referenda in California and Washington in 1996 and 1998, and by administrative decisions in Florida in 1999. The Hopwood and Johnson rulings also had possible applicability to public colleges throughout Alabama, Georgia, Louisiana, and Mississippi. The Supreme Court's 2003 decision in the Grutter and Gratz cases reaffirmed but limited the legal basis for affirmative action in colleges. This article uses nationally representative data on the admissions decisions of high school students in 1992 and 2004 to estimate the magnitude of the change in affirmative action in college admission decisions (i.e., how these policy changes affected the relative likelihood of admission of minority and nonminority applicants). We find substantial declines in levels of affirmative action practiced by highly selective colleges in the states affected by bans and the Hopwood and Johnson rulings, and no evidence of declines outside these states (and thus modest and generally insignificant declines nationwide). We show how the decline in affirmative action in these particular states affects not only students in these states but also those students who live in adjacent states, particularly when the adjacent states lack highly selective colleges.

Keywords: college admission, affirmative action, institutional response to policy, geographic proximity

Introduction

AFFIRMATIVE action in college admissions has been under continuous challenge for 40 years (Holzer & Neumark, 2006). In the late 1990s, efforts to restrict the use of affirmative action made headway, leading to statewide affirmative action bans at public colleges in California, Florida, Texas, and Washington. Circuit court decisions ruled against affirmative action in the 1996 *Hopwood* case (with respect to the University of Texas [UT]) and the 2001 *Johnson* case (with respect to the University of Georgia). These circuit court decisions in turn had bearing

on the legality of affirmative action for colleges in Alabama, Florida, Georgia, Louisiana, Mississippi, and Texas. In 2003, the Supreme Court's decisions in the *Grutter* and *Gratz* cases (with respect to the University of Michigan) clarified the legality of the use of affirmative action in admissions, but also limited the mechanisms by which colleges could advantage minority applicants in admissions decisions.

Given this evolving policy environment around the use of affirmative action in college admissions, this article seeks to answer three questions. First, how has the magnitude of the preference given to minority applicants (i.e.,

affirmative action) changed during this period in the states directly affected by statewide bans and circuit court rulings? Throughout this study, we consider Alabama, California, Florida, Georgia, Washington, Louisiana, Mississippi, and Texas to be states directly affected by statewide bans and judicial rulings; for parsimony we refer to these states in aggregate as “post-affirmative action states.”¹ The second question is as follows: How has affirmative action changed nationally and in states other than those directly affected by statewide bans and court rulings in response to secular trends and specifically in response to the requirements imposed by the *Grutter* and *Gratz* Supreme Court rulings? Finally, how have statewide and judicial policy changes affected the geographic distribution of affirmative action offered by colleges near a given student in a particular state?

We use nationally representative student data from 1992 and 2004 to estimate an underrepresented minority (i.e., Black, Hispanic, or Native American) student’s probability of admission compared with an observably similar nonminority (i.e., White or Asian American) student at the same postsecondary institution.² We find substantial and significant preferences given to minority students in 1992 at highly selective institutions and no significant differences between the levels of affirmative action practiced by colleges in post-affirmative action states versus other states. By 2004, we find insignificant changes in affirmative action in other states, but dramatic declines in post-affirmative action states (and significant difference-in-differences for public colleges). Using parameter estimates of students’ desire to enroll in nearby and in-state institutions, we illustrate how changes in affirmative action affected the supply of affirmative action at nearby selective institutions. We find substantial reductions in nearby affirmative action in post-affirmative action states which produces notable spillover effects for students living in Arizona, Nevada, and Idaho (which completely lack highly selective institutions) and are thus strongly affected by the changes in neighboring California and Washington.

In the next section, we present the history of changes in the policy environments in post-affirmative action states, the implications of the

Grutter and *Gratz* cases, and the literature that estimates levels and changes in affirmative action. In the “Method” and “Data and Empirical Counterparts” sections, we discuss our methodology to estimate affirmative action at the individual, college, and county levels and discuss our data. Section 5 gives our results and the final section concludes with a discussion of implications for policymakers and directions for future research given the continuing evolution of the post-affirmative action policy environment.

This study contributes three new perspectives to the existing body of research on the post-affirmative action policy environment. Most important, as Long (2010) notes, “there is little historical evidence” that allows researchers to examine how the magnitude of the preference given to minority applicants has varied across institutions, regions, and time (p. 1). We address this gap in the literature by contributing research that compares the use of affirmative action in 1992 to the post-affirmative action policy environment of 2004. The scope of our analysis is both temporal and geographic. We utilize our estimates of levels in affirmative action in 1992 and 2004 across American states to yield what we term measures of “nearby affirmative action,” which is the proximal availability of affirmative action to minority students in a given state. We contend that the availability of nearby affirmative action has implications for minority and nonminority students and deserves increasing attention from researchers, policymakers, and the courts. As an anonymous reviewer noted, nearby affirmative action is important because

if there is not much nearby affirmative action then in order to attend a selective college minority students will either have to (a) be very high in the ability distribution of academic credentials amongst minorities or (b) travel a long distance to go to college.

Second, while studies have examined the aggregate enrollment of underrepresented minorities in post-affirmative action states using institution-level Integrated Postsecondary Education Data System (IPEDS)³ data (e.g., Hinrichs, 2012; Moses, Yun, & Marin, 2009) or IPEDS data combined with institutional survey

data (Grodsky & Kalogrides, 2008), no state-level or national analysis to our knowledge has estimated changes in levels of affirmative action using applicant-level data during this period. By using national applicant-level data to estimate changes in affirmative action at a national scale, our analysis is distinguished from other studies which measure changes in affirmative action in a single state or at one or a few postsecondary institutions.

The third contribution we make relates to considering a set of U.S. colleges and universities with a broad range of selectivity as measured by students' median SAT scores. While a robust body of literature has examined the effects of eliminating affirmative action at flagship universities and elite institutions (e.g., Bowen & Bok, 1998; Espenshade & Chung, 2005; Espenshade, Chung, & Walling, 2004; Espenshade, Hale, & Chung, 2005; Grodsky & Kurlaender, 2006) our analysis of institutions which are at least moderately selective accounts for a much broader range of institution types. Our analysis is thus closer in spirit to Kane (1998), Light and Strayer (2002), Long (2004b), Arcidiacono (2005), and Howell (2010), which each use data on a nationally representative sample of youth. Long (2004b) finds that affirmative action was statistically significant in 1992 for institutions whose median freshman scored 967 or above on the SAT which constituted the top "39% of 4-year colleges, which are attended by around 45% of college enrollees" (p. 1026). Kane (1998) similarly found that significant preferences were used by colleges in the top two quintiles of the SAT distribution in the early 1980s, and that this advantage given to minority students was only substantial in top-quintile colleges. As a result, we will focus on colleges whose median freshman SAT score was at or above 1,000.

Finally, we note that this research is timely considering the Supreme Court's recent ruling in the *Fisher v. University of Texas at Austin* case. We discuss the ruling and its implications in the next section and in the article's conclusion. Despite the Supreme Court's decision in this case, the controversy surrounding affirmative action and the interest in empirical research on the topic will undoubtedly remain.

Affirmative Action Policy Environment and Literature

Changes in the Policy Environment

The affirmative action policy environment that has emerged in the past three decades is defined by a complex web of voter initiatives, judicial rulings, and gubernatorial executive orders that limit the use of affirmative action at public and private colleges. The constitutionality of affirmative action was precariously settled by Justice Powell's deciding opinion in the 1978 *Regents of the University of California v. Bakke* case. The Powell decision allowed for affirmative action to be used only to promote diversity (unless the college had a specific history of racial discrimination that was remedied by affirmative action) and only if race was one factor considered among many others (i.e., quotas could not be used). However, two blocks of four other justices concurred with only parts of Justice Powell's decision.⁴ Thus, without a single decision receiving full backing by a majority of the justices, the *Bakke* decision was seen by opponents to be clearly challengeable.

Texas. The 1996 *Hopwood v. Texas* ruling by the Fifth Circuit Court of Appeals (whose jurisdiction includes Texas, Louisiana, and Mississippi) did not consider the Powell decision in *Bakke* to be binding and found that diversity did not serve a compelling government interest as necessary to meet the constitutional requirements established by other Supreme Court decisions. The *Hopwood* decision was interpreted by Texas Attorney General Morales to ban affirmative action in public colleges and private colleges (that accept federal funding) in Texas.⁵ The Texas legislature responded to the elimination of affirmative action by enacting a law that guaranteed Texas high school students in the top 10% of their graduating class admission to any Texas public university. This policy mechanism, commonly known as a "top-x%" program (Long, 2004b), is predicated on the notion that given *de facto* racial segregation in a state's high schools, the composition of top-x% graduates will contain many minority students, and thus may lead to an increase in college attendance of minority students. In addition to the top 10% program which was put

into place after the *Hopwood* ruling, universities such as the University of Texas-Austin (UT-Austin) and Texas A&M University also created scholarship programs specifically geared at “high-poverty inner-city high schools with weak college-going traditions” (Domina, 2007, p. 202). After the *Grutter* ruling, UT-Austin announced their return to using affirmative action in 2005 (Faulkner, 2005), while Texas A&M opted not to do so (Winter, 2004). UT-Austin’s decision prompted a court challenge, *Fisher v. the University of Texas at Austin*, which was decided by the U.S. Supreme Court in June of 2013. The key in this case was whether the top-10% plan and other efforts have sufficiently increased diversity such that direct use of the applicant’s race is unnecessary.

California. The California electorate ended affirmative action at public institutions with the passage of Proposition 209 in 1996. This statewide elimination of affirmative action was preceded by the elimination of affirmative action at the University of California (UC) in July 1995, by a vote of the University of California Regents known as SP-1. A number of statewide and institutional policy responses emerged as a result of California’s affirmative action ban. The UC introduced a top 4% program and implemented a dual admission/guaranteed transfer agreement policy with junior colleges; UC campuses and most California State University campuses also increased outreach to minority students after the passage of Proposition 209 (Laird, 2005). In October 2011, Governor Brown vetoed a bill that would have allowed public colleges to consider race in admissions decisions citing concerns that it would potentially violate Proposition 209 and lead to costly legal battles (Azevedo & Vincent, 2011).

Washington. In 1998, Washington State voters passed Initiative 200 (I-200), which banned affirmative action at public colleges and universities. The language Washington voters approved was nearly identical to California’s Proposition 209 (Moses et al., 2009). This similarity is attributed in large part to the involvement in both initiative processes of Ward Connerly, former regent of the UC and outspoken critic of affirmative action in college admissions

(Laird, 2005). Public universities in Washington, like in other states which banned affirmative action, responded to I-200’s passage with increased outreach to minority communities (Blume, 2010). Unlike California, Texas, and Florida, however, public universities in Washington did not implement any sort of top-x% program after the elimination of affirmative action. Although a 1997 challenge to affirmative action at the University of Washington eventually reached the U.S. Supreme Court, *Smith v. University of Washington Law School* (2004) was rendered moot by the *Grutter* and *Gratz* rulings and returned to the 9th Circuit Court of Appeals.

Florida. In November 1999, Florida governor Jeb Bush signed Executive Order 99-281 to eliminate affirmative action in government employment, state contracting, and higher education admissions (Bush, 1999). Known as the “One Florida” initiative, this executive order directed the state’s higher education Board of Regents to “implement a policy prohibiting the use of racial or gender set-asides, preferences or quotas in admission to all Florida institutions of Higher Education, effectively immediately” (Bush, 1999, p. 2). With affirmative action eliminated, the Board of Regents in Florida amended their existing admissions policy to add the “Talented 20 Program,” which guaranteed public high school students graduating in the top 20% of their class admission to the Florida state university system (Horn & Flores, 2003). Similar to the California top-x% plan implemented after the passage of Proposition 209, Florida’s top-x% plan guaranteed admission to the state’s university system, not a specific campus.

Georgia, Alabama, Louisiana, Mississippi, and Other States. Court cases and voter challenges beyond California, Florida, Texas, and Washington have further shaped the affirmative action policy environment across the United States. In 2001, the University of Georgia discontinued the use of race as an admissions factor after the Eleventh Circuit Court of Appeals ruled against the university’s current affirmative action practices in *Johnson v. Board of Regents of the University of Georgia* (2001;

Laird, 2005). The extent to which universities in the Eleventh Circuit's jurisdiction, which includes Alabama, Florida, and Georgia, felt bound by the *Johnson* ruling is unclear, although Gose and Schmidt (2001) concluded that the *Johnson* ruling "becomes precedent in three states—Alabama, Florida, and Georgia—and may prompt colleges elsewhere to revisit their affirmative-action policies . . . the decision also has implications for private colleges in the 11th Circuit" (p. A36). It is thus reasonable to believe that colleges and universities in these states may have concluded that their affirmative action practices were on shaky constitutional grounds and may have further perceived the *Johnson* ruling to reflect declining political and social support for affirmative action practices. Although the 2003 *Grutter* ruling clarified the means by which race-based affirmative action could be used, the University of Georgia continued to not use race as a factor in admissions decisions post-*Grutter* (Lyn, 2008).

Louisiana and Mississippi are located in the Fifth Circuit Court of Appeals jurisdiction, and thus were subject to the *Hopwood* ruling during the years 1997 to 2003. However, ambiguity exists as federal consent decrees required colleges in these states to address racial segregation (Grodsky & Kalogrides, 2008). Orentlicher (1998) concludes that due to the *Hopwood* ruling "private universities in Louisiana and Mississippi, are almost entirely precluded from employing racial 'preferences' in their admissions policies" (pp. 182–183). Orentlicher further notes that "Louisiana and Mississippi are still under court orders to complete the desegregation of their public universities, and affirmative action policies are part of the efforts to eliminate the effects of their prior systems of segregated higher education" (p. 183). However, Conrad and Weerts (2004) posit that as federal desegregation orders do not require public institutions to use affirmative action in admission decisions *per se*, "progress toward desegregation has been undercut because states and institutions are unclear about the legal implications of improving Black access to historically White institutions through affirmative action" (p. 70). Because we find no evidence to the contrary, like others (e.g., Bowen & Rudenstine, 2003), we group Alabama, Georgia, Louisiana, and

Mississippi in our set of states affected by statewide bans and circuit court rulings (Hebel, 2000, 2001). Thus, we test for changes in level of affirmative action used in Alabama, California, Florida, Georgia, Louisiana, Mississippi, Texas, and Washington relative to other states.

Voter referenda in Michigan (2006), Nebraska (2008), Arizona (2010), and Oklahoma (2012) produced statewide bans in affirmative action, while a similar referendum failed in Colorado in 2008. A three-judge panel of the Sixth Circuit Court of Appeals ruled in 2011 that "Michigan voters did not have the right in 2006 to ban public colleges and universities from considering race and ethnicity in admissions" (Jaschik, 2011). This ruling was subsequently reconsidered and upheld, at which point Michigan's attorney general challenged the ruling in the Supreme Court.⁶ Finally, the state legislature in New Hampshire banned affirmative action for public colleges in the state in 2011. These statewide policy changes in Michigan, Nebraska, Arizona, Oklahoma, and New Hampshire took place in years outside the scope of our data and thus are not evaluated.

Grutter, Gratz, and Fisher. The admissions systems at the University of Michigan for the law school and for undergraduates were challenged in the *Grutter v. Bollinger* (2003) and *Gratz v. Bollinger* cases, respectively. In rejecting the undergraduate admissions system in *Gratz* but upholding the law school's admission system *Grutter* in 2003, the Supreme Court struck down the use of assigning points in the admissions process based on an applicant's race but validated the use of race as one factor among many in an admissions decision so long as it is part of a holistic review of an applicant and so long as race does not have a uniform impact (as would follow from a point system). Moreover, the *Grutter* ruling held that for the use of an applicant's race to be permissible, the college would need to give "serious good faith" consideration to workable non-race-based alternatives that increase diversity. (This question of "serious good faith" effort was at the heart of the *Fisher v. Texas* case.) These rulings, particularly the need for holistic review, have made it more costly for universities to practice

affirmative action. Furthermore, these rulings apply to both private and public colleges. In this context, we might expect to see declines in the aggregate magnitude of affirmative action being practiced by colleges. Our expectation is then to see declines nationwide in the period we study (1992–2004), but particular declines in states that are bound by voter referenda in 2004 (California and Washington) or administrative decision (Florida), and states affected by the *Hopwood* and *Johnson* rulings (Alabama, Georgia, Louisiana, Mississippi, and Texas), as their universities had not had sufficient time to adjust to the *Grutter* ruling.

The recent Supreme Court decision in the *Fisher* case has the potential to further transform the affirmative action policy landscape of the United States. In advance of the ruling, legal scholars suggested the possible outcomes of the *Fisher* case could have ranged from a validation of UT-Austin's admissions practices to a complete rejection of the use of race in college admission decisions at public institutions (Amar, 2012; Asbury, 2013; Chandler, 2012; Spann, 2012). In a 7 to 1 decision, the Court instead chose a middle path that effectively validated the *Grutter* ruling, while invalidating the decision by Fifth Circuit Court of Appeals regarding the case. The Court determined that “the Fifth Circuit did not hold the University to the demanding burden of strict scrutiny articulated” in the *Grutter* and *Bakke* cases (*Fisher v. University of Texas*, 2013b, p. 1). In remanding the case back to the Fifth Circuit, they ruled that “the Fifth Circuit must assess whether the University has offered sufficient evidence to prove that its admissions program is narrowly tailored to obtain the educational benefits of diversity” (*Fisher v. University of Texas*, 2013b, p. 3). Furthermore, the Court concluded that the

University must prove [to the reviewing court] that the means it chose to attain that diversity are narrowly tailored to its goal. On this point, the University receives no deference . . . The reviewing court must ultimately be satisfied that no workable race-neutral alternatives would produce the educational benefits of diversity. (*Fisher v. University of Texas*, 2013a, p. 10)

Thus, the Court's ruling on *Fisher* means universities now have a greater burden of proof

should their race-based admissions program be challenged. As such, we expect that this decision may further reduce the use of traditional affirmative action given the increased legal and political cost of doing so.

Assessing the “Post-Affirmative Action” Policy Environment. Each state in which affirmative action was unambiguously banned for all public colleges (California, Florida, Texas, and Washington) put into place an alternative policy or collection of policies with an explicit or implicit goal to increase minority student enrollments in the absence of formal race-based affirmative action policies. For example, California, Texas, and Florida implemented some version of a top- $x\%$ plan upon eliminating affirmative action. These states' top- $x\%$ plans, however, vary widely in terms of their complexity (Horn & Flores, 2003) and their effectiveness at maintaining or increasing levels of minority enrollment in a post-affirmative action environment (Long, 2007). At the institutional level, universities in post-affirmative action states also implemented varying degrees of class-based affirmative action. Laird (2005) notes that “in states where affirmative action has been abruptly ended, the first alternative to the consideration of race and ethnicity in university admissions has almost always been socioeconomic affirmative action” (p. 142). The ability of class-based affirmative action policies to proportionately increase minority admission rates, however, is dubious: Cancian (1998) uses data from the National Longitudinal Survey of Youth (NLSY79) to simulate class-based affirmative action and finds “class-based programs would not achieve the same results as [affirmative action policies] targeting racial and ethnic minority youths” (p. 104). Universities may take other measures to boost the admissions prospects of minority applicants. Long and Tienda (2008) present evidence that while UT-Austin and Texas A&M eliminated a direct preference for minorities in their admissions decisions, they simultaneously changed the weights placed on various applicant characteristics that advantaged minority applicants—that is, that they found proxies for applicant's race. Our estimation method (discussed below) will focus on assessing

changes in the *direct* preferences given to minority applicants (holding constant other observable applicant characteristics).

In the same way that the *Bakke* ruling made the use of quotas illegal in college admissions (Ancheta, 2008), the *Gratz* ruling determined the practice of assigning “points” for a minority student’s race was “not narrowly tailored to achieve the interest in educational diversity that the defendants claim justifies their program” (*Gratz v. Bollinger*, 2003, p. 22). While it is impossible to determine prior to the *Gratz* ruling how many colleges and universities assigned “points” in the admissions process based on a minority student’s race, we assume that many of the colleges and universities using a point system for race prior to the *Gratz* ruling shifted admissions processes to a “holistic” admissions process permissible under the *Grutter* ruling. Holistic admissions policies lack formal scoring of applicant characteristics, academic and otherwise, which leave race as only one applicant factor considered alongside a host of other applicant characteristics (Sternberg, 2010). Therefore, we infer that the effect we measure in this article may be a reflection of this change in processes as a result of the *Gratz* and *Grutter* rulings.

Private colleges in states where public colleges are bound may also reduce their affirmative action for three reasons. First, they may fear that the local political environment may be hostile to affirmative action and thus may fear a costly lawsuit. Second, administrators may feel less need to overcome the legacy of discrimination or to achieve diversity given the local political environment. Third, private colleges in these states may find it easier to compete for the top minority applicants as those applicants may have fewer offers of admission. If so, these private colleges could offer fewer admissions to minority applicants while yielding the same level of diversity.

Prior Literature on College Affirmative Action Policy Change and Its Consequences

This article’s approach in estimating the availability of affirmative action at nearby selective colleges follows the methodology of Long’s (2010) analysis of temporal and regional

changes in affirmative action between 1972 and 1992. Long empirically demonstrated that different regions of the United States have distinct historical patterns in their use of affirmative action, and found higher levels of affirmative action in the Northeast and Midwest in 1972 with affirmative action increasing in the South and West and declining in the Northeast and Midwest by 1992. Diverging from Long’s format, however, we leverage the United States’ evolving policy terrain by constructing two regions in our model based on states’ policy environment instead of geography.

The evolving use of affirmative action in higher education has inspired a burgeoning body of literature since the 1990s. Research has examined the effects of affirmative action bans in states such as Texas (e.g., Cullen, Long, & Reback, 2013; Dickson, 2006; Harris & Tienda, 2010; Kain, O’Brien, & Jargowsky, 2005; Long, Saenz, & Tienda, 2010; Long & Tienda, 2008, 2010; Tienda & Niu, 2006a, 2006b; Tienda & Sullivan, 2009) and California (Contreras, 2005; Grodsky & Kurlaender, 2010; Karabel, 1999; Rose, 2005). Less attention appears to be paid to Washington (e.g., Brown & Hirschman, 2006) and Florida (e.g., Marin & Lee, 2003). Studies on affirmative action bans have also looked at more than one state, for example, Texas and California (Long, 2004a; Caldwell, 2010; Card & Krueger, 2005), Texas and Florida (Perna, Li, Walsh, & Raible, 2010). Research has also examined patterns of admission and enrollment across multiple post-affirmative action states; Long (2007) examines post-affirmative action trends in California, Florida, Texas, and Washington.

Findings in recent years have illustrated the impact of the post-affirmative action policy environment on the applications, admission, and enrollment of minority students. For example, Hinrichs (2012) examines the effects of affirmative action bans in the context of institutional enrollment. Using IPEDS data, Hinrichs regresses minority enrollment percentages on a dummy variable of whether a state banned affirmative action while controlling for a host of other factors, and finds that on average affirmative action bans decrease African American and Hispanic enrollment at public universities by roughly 1.7 percentage points and 2.0 percentage points, respectively (p. 717). In an

analysis of flagship universities in post-affirmative action states, Long (2007) finds that “the effects of affirmative action were clearly demonstrated by the declines in minority enrollment in flagship public universities in California, Texas, and Washington after statewide bans on these preferences” (p. 326). In a broader context, Grodsky and Kalogrides (2008) find that the “predicted probability of claiming to engage in affirmative action increases for public and private institutions . . . through the 1990s and declines thereafter” with a “particularly pronounced” decline at public institutions around 1998 (p. 17). What this literature lacks, however, is a specific estimation of the magnitude of the change in the direct preferences given to minority application by institutions in their admissions decisions.

Method

Using national data on college applicants (discussed in the next section), we estimate the level of affirmative action for each 4-year college in the contiguous United States based on the college’s selectivity, region (i.e., states that are and are not affected by statewide bans and circuit court judicial rulings), and cohort (1992 vs. 2004). We then compute mean levels of affirmative action for colleges in selectivity ranges by region and cohort. Finally, for a hypothetical student living at the centroid of each county, we construct a measure of affirmative action available at nearby institutions by cohort.

Computing the Size of Preferences Given to Minority Applicants for Each College

We start with data sets of college applications in 1992 and 2004 that contain rich observable student characteristics, the name of the college that the student applied to (which is then linked to data on the institution’s median freshman SAT and ACT scores (“MSACT,” explained below), and the admissions decision of the college.

Ideally, we would prefer to only select applicants to the same college and estimate affirmative action for that specific college. There are no national data sets, however, with a wide range of institutions that have sufficient numbers of applications to each institution to allow for

estimates to be derived.⁷ Instead, we estimate affirmative action for colleges in various selectivity ranges (based on MSACT) and then apply the resulting estimate to college j using the following procedure.

For each cohort, we sort the data set of applications from lowest to highest MSACT. We begin by selecting all applications to those institutions in the selectivity range of the institution with the lowest MSACT and that MSACT plus 100 points. We estimate the level of affirmative action for that selectivity range using the logit regression described below. We then shift the selectivity window upward to the range from the MSACT of the institution with the second-lowest up to that MSACT plus 100 points. We again estimate the level of affirmative action for that selectivity range, and repeat this process until we have estimated affirmative action for each 100 point range.⁸ For each of these selectivity ranges, we compute the mean MSACT of colleges in this range (weighted by the number of applications in our data set to each college). Finally, for college j , we assign it an estimated level of affirmative action using the estimate produced by the selectivity range whose mean MSACT is closest to college j ’s MSACT. So, for example, if college j had an MSACT of 1,171, we would find the 100-point range whose mean institution was closest (e.g., range = 1,134–1,233; M institution = 1,170) and would apply the estimated level of affirmative action based on applications in that range (e.g., 7.6 percentage points) as an estimate of college j ’s affirmative action. When we produce estimates of affirmative action by region, the same procedure is used but restricted to applications to colleges in that region.⁹

Our goal is to identify the effect race had on the probability that applicant i is admitted by college j conditional on observable characteristics of applicant i and college j —for the purposes of this article, this is what we define as the “level of affirmative action.” To identify this effect, we estimate the following logit specification:

$$\text{Prob}(Admit_{ij} = 1) = \Lambda(\alpha + \beta M_i + \gamma X_{ij} + \varepsilon_{ij}), \quad (1)$$

where $Admit_{ij}$ is an indicator that equals one if the applicant was admitted, $\Lambda()$ denotes the logistic cumulative distribution function, M_i is

an indicator for underrepresented minority, and \mathbf{X}_{ij} is a vector of observable student characteristics aside from race and characteristics of the institution at which the student applied.¹⁰

We then estimate the amount of affirmative action for the mean applicant to this selectivity range by computing the mean marginal effect of being a minority.¹¹

$$\frac{1}{N} \sum_{i=1}^N \left(\Lambda(\hat{\alpha} + \hat{\beta} + \hat{\gamma} \mathbf{X}_{ij}) - \Lambda(\hat{\alpha} + 0 + \hat{\gamma} \mathbf{X}_{ij}) \right), \quad (2)$$

where N is the number of students who applied to this selectivity range.

After we have estimated affirmative action for each college, we group colleges in selectivity ranges (e.g., MSACT $\geq 1,100$) and report the mean levels of affirmative action for colleges in that range. We compute differences in these means across cohorts (1992 vs. 2004), across regions (post-affirmative action states vs. other states), and difference-in-differences estimates. The difference-in-differences estimates allow us to assess whether the cross-cohort changes were different in the states affected by statewide bans and circuit court judicial rulings from states that were affected only by the *Grutter* and *Gratz* decisions.

To produce standard errors for each estimate of the mean level of affirmative action by selectivity range, changes in mean levels, and the difference-in-differences, we use a bootstrapping procedure. We repeat the process above for 250 bootstrapped samples of student applications (stratified by minority status) and compute the standard error of the estimates across the resulting 250 samples.

We test three hypotheses:

Hypothesis 1: Null Hypothesis: There is no difference in the likelihood of admission based on being a minority student, conditional on observable characteristics. Alternative Hypothesis: Minority applicants are more or less likely to be admitted than observably similar nonminorities. To test this hypothesis, we use a two-tailed test, which tests for either affirmative action or discrimination that adversely affects minorities.

Hypothesis 2: Null Hypothesis: Affirmative action did not decline between 1992 and

2004. Alternative Hypothesis: Affirmative action declined between 1992 and 2004. As we have no reason to expect that affirmative action increased during this time period given the various court rulings that limited the use of affirmative action and statewide bans, we use a one-tailed test.

Hypothesis 3: Null Hypothesis: In 2004, the level of affirmative action practiced by colleges in post-affirmative action states was not lower than levels used in other states in the contiguous U.S. Alternative Hypothesis: In 2004, the level of affirmative action practiced by colleges in post-affirmative action states was lower than levels used in the other states. As we have no reason to expect higher levels of affirmative action in states affected by statewide bans and circuit court rulings, we use a one-tail test. We apply the same test in 1992 to compare with the 2004 results.

Computing the Size of Preferences Given to Minority Applicants at Nearby Colleges

We construct a measure of affirmative action at “nearby” colleges for a student living at the centroid of a county. We produce a weighted average of each college’s level of affirmative action, with more weight given to colleges that are closer to the student and in the same state as the student, and to colleges with greater enrollment. To construct the parameters for this weighting, we estimate the following gravity equation using students’ enrollment decisions.¹²

$$T_{hj} = \delta H_h^\alpha E_j^\beta \exp(\gamma_1 D_{hj} + \gamma_2 I_{hj}), \quad (3)$$

where T_{hj} is the number of students at high school h that enroll in college j , H_h is the number of students at high school h who enroll in any 4-year college included in our data sets, E_j is the enrollment of college j , D_{hj} is the distance between high school h and college j , I_{hj} is an indicator variable that equals one if the high school is in the same state as the college, and δ , α , β , γ_1 , and γ_2 are the parameters to be estimated. The parameter γ_1 gives the resistance of the enrollment decision to the distance of the

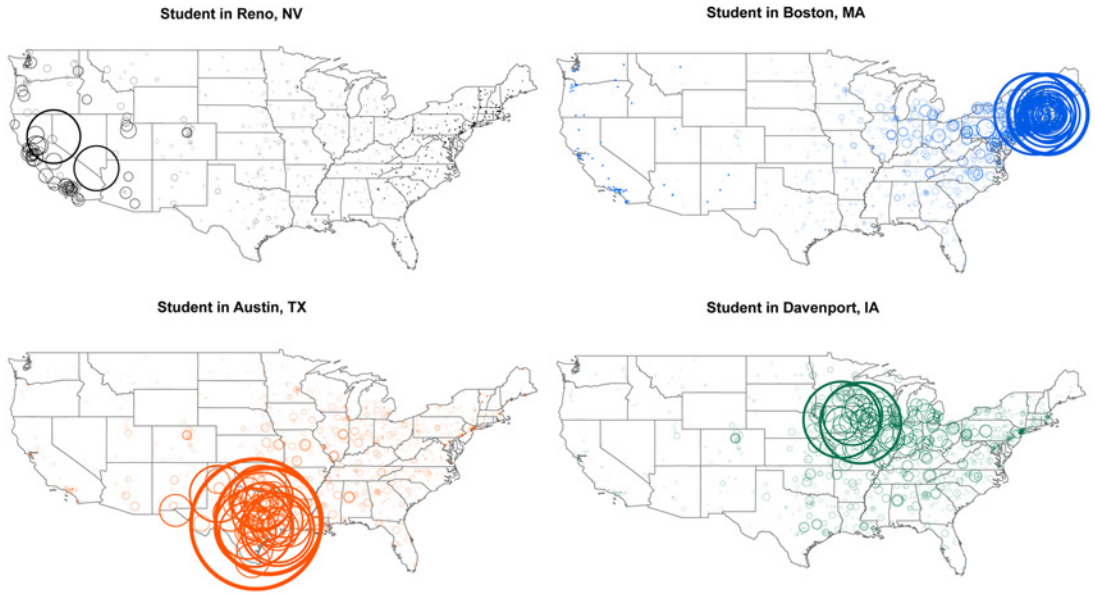


FIGURE 1. *Weights assigned to colleges for hypothetical students living in various cities.*

Note. The size of each circle is proportional to the size of the weight assigned to the college. If weight is less than three, the college is represented by a single dot. Weights determined using NELS student data and Barron's (1992). NELS = National Education Longitudinal Study.

students from the college, and γ_2 gives the preference students have for enrolling in in-state colleges.

The parameter estimates for Equation 3 are shown in Appendix Table A1. We find a modest decrease in resistance to distance between 1992 and 2004 and a modest increase in the preference for enrolling in in-state colleges.

To compute the average affirmative action of nearby universities, the following weight is assigned to college j for students from county c :¹³

$$W_{cj} = E_j \exp(\hat{\gamma}_1 D_{cj} + \hat{\gamma}_2 I_{cj}). \quad (4)$$

To illustrate this weighting scheme, Figure 1 shows the weights for four fictional students living in Reno, Davenport, Boston, and Austin, respectively. This figure shows the degree to which college markets are localized. The figure for Austin shows the importance of UT-Austin, which is the largest circle. The Reno figure shows the paucity of universities in the West, and shows the importance of the University of Nevada at Reno, the University of Nevada at Las Vegas, and the Pacific coast universities for such a student.

Using these weights, we compute the average degree of affirmative action of nearby universities (AA_c) given county c 's location and cohort using the following equation:

$$AA_c = \frac{\sum_{j=1}^J W_{cj} AA_j}{\sum_{j=1}^J W_{cj}}, \quad (5)$$

where J is the total number of 4-year colleges for the relevant cohort. We focus on colleges where $MSACT \geq 1,100$ as such highly selective colleges have historically given substantial preferences to minority applicants (Kane, 1998; Long, 2004b). Thus, in calculating AA_c , we set $W_{cj} = 0$ for all less selective colleges. Finally, we use the within-region estimate of AA_j (i.e., based on applications to colleges in the same region, post-affirmative action states versus other states in the contiguous United States).

Data and Empirical Counterparts

Our data on college applicants come from the National Education Longitudinal Study of 1988 (NELS) and the Education Longitudinal Survey

of 2002 (ELS). NELS followed 8th graders from 1988 until 2000 while ELS followed 10th graders from 2002 to 2012. When NELS and ELS students were seniors in high school they were asked to list their first and second choices for college to which they applied for admission and whether they had been accepted by those colleges. As many students did not know the status of the admissions decision at the time of the senior survey, they were asked the same questions again in the follow-up interview two years later.¹⁴ We restrict the analysis to applications to colleges in the contiguous United States (i.e., excluding Hawaii and Alaska) where our measure of “nearby” colleges (given above) is more sensible.

We use NELS and ELS because these data are the most effective means by which we can estimate nationwide pre- and post-affirmative action college admissions practices accounting for applicant characteristics. We make this contention based on two factors. First, NELS and ELS are the two National Center for Education Statistics (NCES) data sets which bookend the tumultuous years of policy change which accelerated after affirmative action was banned by the UC Regents in 1995. We acknowledge the policy environment is still evolving with recent affirmative action bans in Arizona (2010) and Oklahoma (2012) and the recent *Fisher* ruling from the Supreme Court. However, until the NCES High School Longitudinal Study of 2009 (HSL:09) captures more recent college application and admission data, ELS remains the most salient data to gauge the consequences of the post-affirmative action policy environment. A paucity of empirical alternatives is the second factor which supports our use of NELS and ELS. To carry out a study on nationwide trends of pre- and post-affirmative action admissions practices, ideally we would want a comprehensive data on admission decisions reported from all colleges and universities in the country. Furthermore, we would want these data over a range of years to provide an accurate measure of the preference given to minorities in admissions cycles prior to, during, and after the implementation of statewide affirmative action bans and judicial rulings. If such annual data existed, it would better allow us to isolate changes in affirmative action policies from other contemporaneous changes in

state policies. As collecting these data from the nation’s universities is impossible due to logistics, privacy concerns, and cost, we instead turn to extant nationally representative data sets that contain records of individuals applying to college in sufficient numbers to facilitate our statistical analysis. As we noted, NELS and ELS are the two extant data sets that simultaneously provide rich information on college applications while bookending the period of affirmative action policy change on which we focus. Note that institutional-level data from the IPEDS alone does not suffice in this case; IPEDS contains institutional admission rates and measures of admissions selectivity but does not contain the student-level records required to calculate the preference universities give to minorities holding constant all other academic and nonacademic qualifications.

Because NELS and ELS are nationally representative data that reflect changes in the policy environment beyond statewide affirmative action bans and judicial rulings, we rely on our use of difference-in-difference estimates to account for other changes in policy between 1998 and 2004 that affected college-going behavior. Difference-in-difference estimates “difference out” what Murnane and Willett (2010) call a “secular trend” (p. 154). Secular trends are those which occur outside the scope of the policy of interest but may affect the dependent variable. While we assume that Supreme Court rulings affected the entire country, our use of a post-affirmative action set of states allows us to estimate the admissions preference given to minorities in those states minus the preference given to minorities in states unaffected by affirmative action bans. In other words, we account for policy changes other than those related to affirmative action by differencing out this second difference estimated for the 40 other contiguous states which did not ban affirmative action in the time frame we analyze.

The threat to this difference-in-difference approach is that there may be any number of other changes that specifically affected the post-affirmative action states differently than other states. These changes could include school finance policies, school accountability programs, class size reductions, programs to encourage taking AP courses, and so on. If these changes

reduced achievement gaps between underrepresented minorities and other students, then it might lessen the motivation for colleges to continue to pursue affirmative action in their admissions. To evaluate this possibility, we looked at changes in the SAT/ACT test score gap between underrepresented minority and other students in our data sets of applicants. We found no evidence that would support an argument that the time-trend of these achievement gaps were different in the post-affirmative action states. The test score gap between underrepresented minorities and other students *widened* nationally from 170 points in 1992 to 173 points in 2004. In the eight states affected by statewide bans or judicial rulings, we see that the test score gap widened by nearly the same amount as it did in the remaining contiguous states, 4.4 points versus 4.9 points.¹⁵

Our use of NELS and ELS follows an empirical convention of using multiple data sets to examine trends beyond the scope of a single longitudinal study. Bastedo and Jaquette (2011); Shifrer, Pearson, Muller, and Wilkinson (2012); Klasik (2012); and Long (2010) combine multiple NCES longitudinal data sets to study secular trends or the effects of policy change to obtain a detailed, nationally representative snapshot of education dynamics in the United States.¹⁶ NCES data sets (e.g., NELS and ELS) are particularly valuable in studying a secular or policy trend over time because NCES surveys are intentionally designed to be nationally representative in a manner that allows for inferences across data sets (Institute of Education Sciences, 2007, p. 2).

From NELS and ELS, we include the following variables from each data set in vector **X** in Equation 1: high school grade point average, average of student's SAT and ACT score (in SAT-equivalent points),¹⁷ class rank percentile; indicators for whether the student participated in athletics and student government and whether the student was female, parent's socioeconomic percentile,¹⁸ high school quality index,¹⁹ indicator for private high school, indicator for living in a Metropolitan Statistical Area, MSACT of the college, indicator for a private college, indicator for the student living in the same state as the college, and enrollment of the college.²⁰ Missing values for any of the **X** characteristics are imputed linearly by the available

nonmissing **X** variables so that applicants who have missing values are retained in the analysis.

We also use a data set of 4-year colleges that we constructed from the 1992 and 2005 editions of Barron's Profile of American Colleges, restricted to those in the contiguous United States. Using these data, we compute for each institution the average of its freshmen's median SAT test score (on reading and math) and ACT test scores (converted into SAT-equivalent points) to produce our constructed variable MSACT. If these variables were unavailable, we impute MSACT using the percentages of students who fell in various SAT ranges (<500, 500–600, 600–700, >700) and various ACT ranges (<21, 21–23, 24–26, 27–28, >28). If these range data were unavailable, we imputed using the mean value of MSACT for the college's Barron's selectivity index. As MSACT rose between 1992 and 2004 (from a mean of 955 to 1,073), and as we want to be able to compare similarly selective institutions to one another across the cohorts, we have forced the distribution of MSACT across colleges in 2004 to be equivalent to the distribution of MSACT across colleges in 1992 by replacing the 2004 value with the corresponding 1992 value at the same percentile. For example, colleges with a MSACT of 1,163 in 2004 (which placed such a college at the 75th percentile of the 2004 distribution) would have their MSACT replaced by 1,046, which corresponded to the 75th percentile in 1992.

Table 1 shows the number of applications to 4-year colleges in our two data sets and the number of colleges by selectivity. As shown in Panel A, the bulk of applications go to colleges with MSACT between 900 and 1,100. Nonetheless, for both cohorts we have 1,700 applications to the 150 institutions whose MSACT is at or above 1,100. Furthermore, note that in 2004, 66% of the applications to colleges above 1,000 went to colleges between 1,000 and 1,100, and 63% of the applications to colleges above 1,100 went to colleges between 1,100 and 1,200. Thus, affirmative action given in these ranges can impact far more students than affirmative action supplied by the most elite institutions. This fact is one strong reason for using NELS and ELS data that are nationally representative.²¹

TABLE 1

Number of Applications to 4-Year Colleges and Number of 4-Year Colleges, by Cohort and Region

College's median freshman SAT/ACT	1	2	3	4	5	6
	Contiguous United States		AL-CA-FL-GA-LA- MS-TX-WA		Remainder of the contiguous United States	
	1992	2004	1992	2004	1992	2004
	NELS	ELS	NELS	ELS	NELS	ELS
Panel A: Number of applications to 4-year colleges (public and private)						
700 to 799	90	110	30	40	60	70
800 to 899	1,410	1,850	470	740	940	1,100
900 to 999	2,710	3,790	520	920	2,190	2,870
1,000 to 1,099	2,100	3,290	700	1,170	1,400	2,120
1,100 to 1,199	1,030	1,070	270	340	750	730
1,200 to 1,299	610	570	30	40	570	530
1,300 and above	70	70	10	10	60	60
All	8,010	10,740	2,040	3,250	5,970	7,490
Panel B: Number of 4-year colleges (public and private)						
1,000 and above	388	434	72	87	316	347
1,100 and above	150	151	20	22	130	129
1,200 and above	56	57	6	7	50	50
Panel C: Number of applications to public 4-year colleges						
1,000 and above	2,030	2,630	750	1,030	1,280	1,610
1,100 and above	610	590	220	210	390	380
1,200 and above	70	30	0	0	70	30
Panel D: Number of public 4-year colleges						
1,000 and above	113	104	26	27	87	77
1,100 and above	30	27	5	6	25	21
1,200 and above	5	3	0	0	5	3

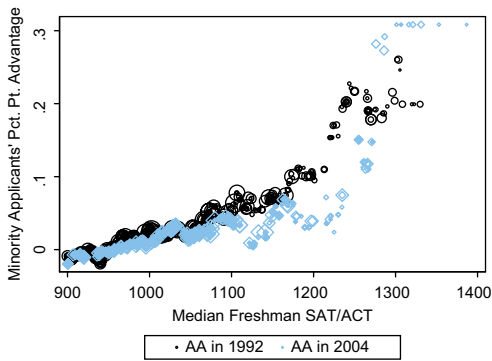
Note. Sample sizes of applications are rounded to the nearest 10 due to requirements of the U.S. Department of Education for using restricted-access data (rather than within region). AL = Alabama; CA = California; FL = Florida; GA = Georgia; LA = Louisiana; MS = Mississippi; TX = Texas; WA = Washington; NELS = National Education Longitudinal Study; ELS = Education Longitudinal Survey.

While our data are appropriate to evaluate how affirmative action has changed nationally across the cohort, they are nonetheless somewhat limited by the modest number of applications going to selective institutions in the region affected by statewide bans and circuit court judicial rulings. For example, as shown by columns 3 and 4 in Panel A, we have 310 and 390 applications, respectively, to colleges above 1,100 in these states. As a result, our standard errors will be considerable when we look at these states. Furthermore, note from Panel D that there are no public colleges in these states whose MSACT is at or above 1,200. Consequently, when we estimate effects for public colleges above 1,200, we restrict our analysis to the other states in the contiguous United States.

Results

Levels of Affirmative Action by College Selectivity, Region, and Cohort

Figure 2 illustrates the level of affirmative action used across all public and private 4-year colleges by selectivity in 1992 and 2004. Consistent with Kane (1998) and Long (2004a), we find that minority applicants were more likely to be admitted than observably similar White and Asian applicants for colleges with MSACT $\geq 1,000$ and these preferences increase steadily with selectivity. However, the magnitude of the estimated affirmative action appears to be substantially smaller in 2004 for institutions with MSACT between 1,100 and 1,300.²² For the rest of this article, we ignore institutions with MSACT less than 1,000 and



Note: Marker size is proportional to the college's enrollment.

FIGURE 2. *Levels of affirmative action by college selectivity and cohort.*

focus on colleges where affirmative action appears to be occurring.

Tables 2 and 3 contain our central results and illustrate the levels and changes in affirmative action for all colleges and public colleges, respectively. Panels A, B, and C of these tables show the results for the aggregate of colleges whose MSAT/ACT was at or above 1,000, 1,100, or 1,200, respectively. As shown in Panel A of Table 2, the level of affirmative action for public and private colleges with MSAT/ACT $\geq 1,000$ declined from 6.3% to 4.3%, but this decline was not statistically significant.²³ Panel A further shows that there were no significant differences in levels of affirmative action nor changes in levels of affirmative action across regions for all colleges with MSAT/ACT $\geq 1,000$.

As shown in Panel B of Table 2, there was a large, albeit insignificant, decline in the level of affirmative action for colleges in post-affirmative action states with MSAT/ACT $\geq 1,100$, falling from 8.4% to -1.3%.²⁴ The 2004 level of affirmative action in such colleges (-1.3%) was significantly smaller (using a one-tailed test) than the level in other states (14.1%).²⁵ Note that 81% of the enrollment in the 22 institutions in post-affirmative action states with MSAT/ACT $\geq 1,100$ in 2004 come from the following seven institutions: University of Florida (UF); University of California, Los Angeles (UCLA); University of California-Berkeley (UC-Berkeley); University of Southern California (USC); Georgia Tech; Stanford; and University of Texas-Dallas

(UT-Dallas). Three public institutions in these states (UF, UCLA, and UC-Berkeley) were still bound in 2004 to not grant preferential admission to minorities, while USC and Stanford were not bound by Prop. 209. While the *Grutter* decision clarified the legal standing of affirmative action which had been left murky by the divergent *Bakke*, *Hopwood*, and *Johnson* rulings, Georgia Tech and UT-Dallas may have felt no need to respond to the change brought about by the *Grutter* ruling.²⁶

The pattern of results shown in Panel C of Table 2 for all colleges with MSAT/ACT $\geq 1,200$ is similar, although the changes in levels and cross-regional differences are insignificant. For such colleges in post-affirmative action states, the level of affirmative action fell from 19.3% to 5.9%, but the standard errors on these estimates are large given the paucity of such institutions in these states. In contrast, the level of affirmative action at such highly selective colleges in other states was essentially unchanged, rising from 18.5% to 18.6%. Given the lack of change in levels of affirmative action outside of states affected by statewide bans and circuit court rulings, there is no evidence that the *Grutter* ruling requiring holistic review adversely affected levels of affirmative action practiced in the year immediately after the ruling. Put another way, as *Grutter* validated the use of race as one factor in admission decisions, the absence of changes in affirmative action between 1992 and 2004 could also reflect that colleges and universities continued affirmative action practices they considered in line with the *Bakke* ruling.

Levels of Affirmative Action for Public 4-Year Colleges

In Table 3, we repeat these estimates, but restrict the analysis to public colleges, as public colleges may feel more bound by judicial rulings and are the sole subject of the statewide bans in California, Florida, and Washington. The pattern of results is similar, although more of the changes in levels of affirmative action and cross-regional differences are significant.

In Panel A of Table 3, we find that affirmative action in public colleges with MSAT/ACT $\geq 1,000$ declined from 7.5% to 3.2% (p value = .057). The

TABLE 2

Estimated Affirmative Action Across All Colleges by Selectivity Range, Year, and Region, and Cross-Cohort Changes in the Level of Affirmative Action

	(1)	(2)	(3)	(4) = (2) – (3)
	Continental United States	AL-CA-FL- GA-LA-MS- TX-WA	Remainder of the contiguous United States	Cross-region difference
Panel A: 1,000 and above				
1992	6.3%*** (1.4%)	5%* (2.9%)	6.6%*** (1.8%)	-1.6% (3.4%)
2004	4.3%*** (1.2%)	4.9%* (2.6%)	6.5%*** (1.4%)	-1.6% (2.9%)
1994 to 2004 change	-1.9% (1.9%)	-0.1% (3.8%)	-0.2% (2.4%)	0% (4.3%)
Panel B: 1,100 and above				
1992	11.5%*** 2.2%	8.4% (7.5%)	12%*** (2.4%)	-3.6% (7.8%)
2004	7.8%*** (2.7%)	-1.3% (6.8%)	14.1%*** (2.6%)	-15.4%** (7.3%)
1994 to 2004 change	-3.6% (3.5%)	-9.7% (10.2%)	2.1% (3.5%)	-11.8% (13.5%)
Panel C: 1,200 and above				
1992	18.5%*** (3.8%)	19.3% (18.2%)	18.5%*** (4.0%)	0.8% (18.5%)
2004	14.8%*** (5.3%)	5.9% (14.3%)	18.6%*** (4.9%)	-12.7% (15.2%)
1994 to 2004 change	-3.8% (6.5%)	-13.4% (23.5%)	0.1% (6.4%)	-13.5% (24.3%)

Note. For the level of affirmative action (or, conversely, discrimination), significance is tested using a two-tailed test. For regional differences, cross-cohort changes in levels of affirmative action, and the difference-in-differences estimates (where we hypothesize a decline in levels of affirmative action and cross-regional differences in 2004), significance is tested using a one-tailed test (and no test is conducted if the cross-cohort change is positive). AL = Alabama; CA = California; FL = Florida; GA = Georgia; LA = Louisiana; MS = Mississippi; TX = Texas; WA = Washington.

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

cross-regional differences are insignificant for such colleges.

In Panel B of Table 3, we show that affirmative action in public colleges with MSACT $\geq 1,100$ declined significantly (using a one-tailed test) from 14.8% to 5.1%,²⁷ and nearly all of this decline can be attributed to colleges in post-affirmative action states. In these eight states, affirmative action declined from a weakly significant 9% to an insignificant -14.3% (which if taken literally would indicate discrimination against minority applicants). This 23.3 percentage point decline was statistically significant using a one-tailed test.²⁸ Furthermore, we find no significant change in levels of affirmative action in other states. The difference in levels of affirmative action between post-affirmative action states and

other states grew significantly (using a one-tailed test) from 9.6 percentage points to 32.1 percentage points.²⁹

Finally, from Panel C of Table 3, we show that levels of affirmative action at public colleges with MSACT $\geq 1,200$ (which are exclusively located outside the post-affirmative action states) were relatively unchanged between 1992 and 2004. Thus, the cumulative evidence shows that the level of affirmative action in public colleges declined nationwide between 1992 and 2004, but only in post-affirmative action states. Thus again, there is no evidence that the *Grutter* and *Gratz* rulings had an immediate effect on levels of affirmative action, while statewide bans and reaction to earlier circuit court rulings in the *Hopwood* and *Johnson* cases had large effects.

TABLE 3

Estimated Affirmative Action Across Public Colleges by Selectivity Range, Year, and Region, and Cross-Cohort Changes in the Level of Affirmative Action

	(1)	(2)	(3)	(4) = (2) – (3)
	Continental United States	AL-CA-FL-GA- LA-MS TX-WA	Remainder of the con- tiguous United States	Cross-region difference
Panel A: 1,000 and above				
1992	7.5%*** (1.8%)	3.3% (2.8%)	9.5%*** (2.2%)	-6.2% (3.5%)
2004	3.2% (2.1%)	1.4% (3.9%)	6.6%*** (2.0%)	-5.3% (4.3%)
1994 to 2004 change	-4.3%* (2.7%)	-1.9% (4.9%)	-2.9% (3.0%)	1% (5.7%)
Panel B: 1,100 and above				
1992	14.8%*** 3.0%	9%* (5.0%)	18.6%*** (3.2%)	-9.6%* (6.0%)
2004	5.1% (4.5%)	-14.3% (11.5%)	17.9%*** (3.2%)	-32.1%** (12.0%)
1994 to 2004 change	-9.7%** (5.7%)	-23.3%** (12.9%)	-0.7% (4.3%)	-22.6%** (13.5%)
Panel C: 1,200 and above				
1992			35.5%*** (6.6%)	
2004			34.5%*** (4.9%)	
1994 to 2004 change			-1% (8.2%)	

Note. For the level of affirmative action (or, conversely, discrimination), significance is tested using a two-tailed test. For regional differences, cross-cohort changes in levels of affirmative action, and the difference-in-differences estimates (where we hypothesize a decline in levels of affirmative action and cross-regional differences in 2004), significance is tested using a one-tailed test (and no test is conducted if the cross-cohort change is positive). AL = Alabama; CA = California; FL = Florida; GA = Georgia; LA = Louisiana; MS = Mississippi; TX = Texas; WA = Washington.

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

Variation in Levels of Affirmative Action at “Nearby” Colleges

We now turn to evaluate how this change in levels of affirmative action affected the availability of affirmative action for a given student at nearby colleges. Figure 3 shows the level of affirmative action available at nearby highly selective colleges for a hypothetical student living at the centroid of each county. The color bands are divided equally by units of 3 percentage points with white and light blue reflecting negative “affirmative action,” light green reflecting low positive levels of affirmative action, and dark green reflecting the highest levels of affirmative action.³⁰ As shown in the top panel, because there was less substantial

regional variation in levels of affirmative action in 1992, variation across counties is mostly generated by the geographical distribution of colleges’ MSATAC levels (i.e., counties that are proximate to more selective colleges will have higher estimated nearby affirmative action).³¹ In contrast, for the bottom panel (2004), much of the variation is driven by the elimination of affirmative action in post-affirmative action states. Note that for many counties the estimate of affirmative action is negative—and particularly large—in California. As the negative levels of affirmative action were not found to be significant in Table 2, the color bands here should be taken as illustrative of the changes in nearby affirmative action, but not as revealing definitive evidence of discrimination.

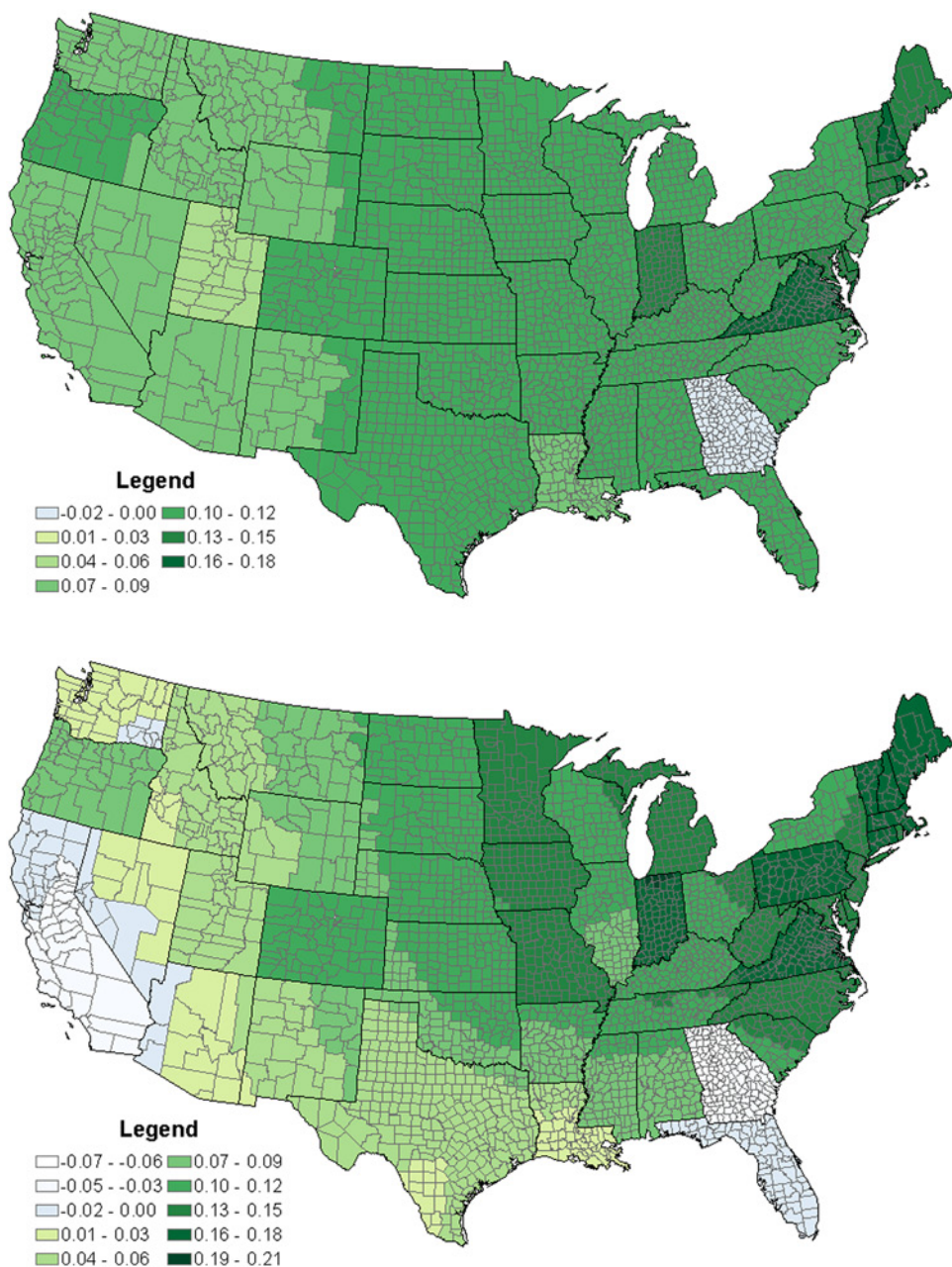


FIGURE 3. *Changes in levels of affirmative action at nearby colleges with median freshman SAT at or above 1,100.*

States that are adjacent to post-affirmative action states and who do not have their own highly selective colleges are strongly affected by the changes in these neighboring states. For example, counties throughout Nevada and Arizona are estimated to face negative levels

of nearby affirmative action. This result occurs because these states have no colleges with MSATACT $\geq 1,100$, and thus students from these states who are looking to attend such colleges are likely to seek out the highly selective colleges in California where affirmative action

is estimated to be negative. In contrast, Oregon counties show positive levels of affirmative action throughout the state, despite being wedged between Washington and California. As Oregon has several colleges with MSACT $\geq 1,100$ (Reed College, Lewis, and Clark College, University of Portland, and Willamette University), and because these colleges are estimated to still give positive preference to minority applicants, and given the preference of students to remain in the state of their high school residence, students living in Oregon counties are estimated to face positive levels of affirmative action. Idaho is similar to Nevada and Arizona in lacking a college with MSACT $\geq 1,100$, but is less “light blue” than these states as (a) it is influenced by the positive affirmative action in Oregon, (b) it is further from California, and (c) the enrollment in selective colleges is smaller in adjacent Washington (4,193 students in Whitman College and University of Puget Sound) than the enrollment in the selective colleges in California (76,152 students). Thus, students in Idaho looking for a selective college are more influenced by colleges throughout the nation than similar students in Nevada and Arizona who are influenced more by selective colleges in California. Finally, counties in Mississippi and Alabama are found to have positive levels of nearby affirmative action at colleges with MSACT $\geq 1,100$ in 2004 despite the fact that colleges in these states were arguably subject to the *Hopwood* and *Johnson* rulings, respectively. This result occurs because these states lack colleges with MSACT $\geq 1,100$; students in these states who seek to attend such selective colleges will be searching in a national market.

Conclusion

We find that affirmative action declined substantially between 1992 and 2004 in states where affirmative action was prohibited during this period by referenda, judicial rulings, or administrative decisions (i.e., Alabama, California, Florida, Georgia, Louisiana, Mississippi, Texas, and Washington). In contrast, levels of affirmative action were unchanged

throughout the rest of the United States, suggesting that the requirements imposed by the 2003 *Grutter* ruling had little immediate effect on universities’ abilities to continue to provide preferential admission to minority applicants. We illustrate that these declines in affirmative action had effects on the availability of affirmative action in states that are nearby but that lack highly selective colleges, notably Arizona, Idaho, and Nevada.

Note that our analysis specifically addresses the extent to which universities changed the weight placed *directly* on the applicant being a minority, controlling for students’ other observable characteristics. Chan and Eyster (2003) theoretically predicted that universities would change the weights placed on other observable applicant characteristics (e.g., lowering the weight placed on SAT and ACT test scores), and thus *indirectly* advantage minority applicants. Such a policy response was found to be empirically occurring at UT-Austin and Texas A&M by Long and Tienda (2008). They found that the reweighting of applicant characteristics by UT-Austin led to a 33% rebound in the number of minorities who were admitted (relative to the loss brought on by the elimination of direct affirmative action), and that the combination of the reweighting of applicant characteristics and the top-10% plan led to a 61% rebound, while a smaller effect was found at Texas A&M. If such reweighting of observable applicant characteristics is occurring broadly throughout these eight states, then the adverse change in minority admissions as estimated in this article may overstate the changes in minority students’ admissions prospects. In an earlier version of this article, we tested this conjecture by holding the estimated admissions parameters equal to their 1992 values and recomputed affirmative action in 2004 at the applicant and college level. From this exercise, we found no systematic evidence using our national data to suggest that colleges indirectly advantage minority applicants by changing the weights on applicant characteristics.

Finally, this article has not evaluated the effects of other efforts by colleges to boost minority students’ rates of application to selective colleges and minority students’ enrollment

rates conditional on admission. The vast increase in outreach and scholarship programs (Long, 2007) holds the promise of increasing these responses. If they are effective, they could likewise mitigate the negative effects of the decline in the direct weighting of students' race. However, as these recruitment efforts and scholarship programs mainly target in-state students, the adverse effects on nearby students (e.g., in Arizona, Idaho, and Nevada) may be not be mitigated.

The Supreme Court's ruling on *Fisher v. University of Texas at Austin* will substantially affect the direction of future research examining the effects of the post-affirmative action policy environment on minority students' access to postsecondary education. Because the *Fisher* ruling upheld (but clarified) the *Grutter* ruling, affirmative action policy across the United States will continue to change in a piecemeal fashion across individual states. Future empirical research on affirmative action ought to capture nationwide trends and continue to focus on the extent that the proximal availability of affirmative action changes for

minority student in post-affirmative action states.

We argue in this study that as no viable empirical alternatives exist, the analysis of national affirmative action trends using applicant-level characteristics must be carried out with nationally representative longitudinal data. For this reason, we are encouraged that the NCES HSLS:09 will follow the convention of the four preceding longitudinal surveys³² that collect data on students' postsecondary application behavior. A round of data collection queried HSLS:09 survey participants in the spring of 2012, survey participants' senior year of high school, to collect data on postsecondary application choices and admission outcomes. Thus, the survey time frame for HSLS:09 will not provide the means to analyze the effects of the Supreme Court's *Fisher* ruling *per se* but will nonetheless provide an opportunity to analyze changes in affirmative action that occurred between 2004 and 2012 (i.e., the *Grutter* years) and provide a baseline for future study of the effects of the higher burden imposed on universities by the *Fisher* ruling.

Appendix

TABLE A1
Effect of Distance on the Number of Students From School h Enrolling in College j

	NLS72	HS&B	NELS	ELS
Miles between <i>h</i> and <i>j</i>	−0.00302*** (0.00011)	−0.00286*** (0.00010)	−0.00275*** (0.00009)	−0.00267*** (0.00008)
<i>h</i> and <i>j</i> in same state	3.08*** (0.06)	3.01*** (0.05)	2.78*** (0.05)	2.79*** (0.04)
Ln(College Enrollees _{<i>h</i>})	1.030*** (0.036)	0.943*** (0.024)	0.970*** (0.022)	0.950*** (0.026)
Ln(College Enrollment _{<i>j</i>})	0.853*** (0.018)	0.605*** (0.015)	0.743*** (0.016)	0.885*** (0.015)
Constant	−13.8*** (0.2)	−11.8*** (0.2)	−12.7*** (0.1)	−14.0*** (0.2)
Number of observations	1,154,030	1,298,510	1,662,810	1,021,680
Pseudo- <i>R</i> ²	.354	.331	.320	.332

Note. Negative binomial regression results. NLS72 and HS&B results are taken from Long (2010) for graduating classes of 1972 and 1982, respectively. Sample sizes of applications are rounded to the nearest 10 due to requirements of the U.S. Department of Education for using restricted-access data. NLS72 = National Longitudinal Study of the High School Class of 1972; HS&B = High School and Beyond; NELS = National Education Longitudinal Study; ELS = Education Longitudinal Survey of 2002. ***Indicates significance at the 1% level.

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Notes

1. Our use of “post-affirmative action” follows a general convention in which the term signifies a policy environment where affirmative action has been eliminated, for example, the “post-affirmative action world” (Sackett, Schmitt, Ellingson, & Kabin, 2001) or the “post-affirmative action era” (Colburn, Young, & Yellen, 2008). As we will explain, however, we use this term with caution because circuit court and Supreme Court cases on affirmative action left a patchwork of legal environments across the United States during the years in question. When we use this term, we are simply using it as shorthand for “states that were affected by statewide bans or circuit court judicial rulings in the years between 1992 and 2004” or, equivalently, “California, Florida, Washington, Texas, Louisiana, Mississippi, Alabama, and Georgia.”

2. We group Asian American students and White students together because affirmative action practices at colleges and universities in the United States have historically not given preference to Asian students (Bowen & Bok, 1998; Laird, 2005). Long (2004a) and Long and Tienda (2008) found no significant advantage or disadvantage given to Asian applicants relative to White applicants using, respectively, national college admissions data from 1992 and institutional admissions data from the UT in pre-*Hopwood* years, yet Long and Tienda found a modest disadvantage given to Asian applicants at Texas A&M University in pre-*Hopwood* years. As the data we use only record race as “Asian,” we cannot determine any greater level of racial or ethnic specificity beyond this category. We acknowledge, however, that grouping Asian and White students together does not account for the fact that some groups of Asian Americans are significantly underrepresented in higher education (Ng, Lee, & Pak, 2007).

3. Integrated Postsecondary Education Data System (IPEDS) collected by the U.S. Department of Education.

4. That is to say, Justices Brennan, White, Marshall, and Blackmun concurred with Powell’s opinion that race could be one factor used in an admission decision for the “purpose of overcoming substantial, chronic minority underrepresentation.” Justices Stevens, Stewart, Rehnquist, and Chief Justice Burger, on the other hand, dissented from that option but concurred with a separate portion of Powell’s opinion which directed the University of California to admit Bakke on the grounds that the university violated Section VI of the Civil Rights Act of 1964 by excluding an application on the basis of race (*Regents of the University of California v. Bakke*).

5. There were no subsequent challenges that would have tested Morales’s interpretation, and the Supreme Court did not hear an appeal of the *Hopwood* case, furthering confusion about what was and was not permissible.

6. This challenge to Michigan’s statewide ban on affirmative action, *Schuetz v. Coalition to Defend Affirmative Action* (2012), will be decided by the U.S. Supreme Court later this year (2013).

7. For analyses that have focused on complete data from specific institutions, see Bowen and Bok (1998); Espenshade and Chung (2005); Espenshade, Chung, and Walling (2004); Espenshade, Hale, and Chung (2005); Long and Tienda (2008). The data sets used by these authors are not able to answer the research questions addressed in this article.

8. If there are less than 100 applications in a selectivity range, we widen the selectivity range sufficiently upward to achieve at least 100 applications.

This widening of the window width is necessary at the tails of the selectivity distribution where the number of applications is thinner.

9. By region, we mean the groups of post-affirmative action states and other states in the contiguous United States.

10. Note that there are some applicant characteristics that might be observable to the institution that are unobservable to us, such as the quality of the student's essay or the strength of the student's recommendations. If these characteristics are correlated with the student's race, then they will be absorbed by β .

11. Similar approaches are taken in Kane (1998) and Long (2004a).

12. This model is adapted from Raphael (1998), who applied it to study spatial mismatch of workers and jobs in the San Francisco Bay Area. As students' enrollment decisions may be affected by colleges' affirmative action practices, it could be the case that the resulting parameters that are meant to show students' preference for attending nearby colleges are misestimated due to the endogeneity. It is assumed that this bias is small and does not substantially affect the estimates of nearby affirmative action.

13. To go from Equation 3 to Equation 4 (where we focus on the enrollment choice of a single student), we divide both sides by κH_h^a and we set β equal to 1 (which assumes that a 1% increase in college j 's enrollment should proportionally increase the number of high school h 's students who enroll in college j by 1%).

14. National Education Longitudinal Study (NELS) students were asked "What is the name and location of the institution you applied to (that was your first[second] choice)?" Education Longitudinal Survey (ELS) students were asked "Print below the names and locations of the two schools to which you have applied that you are most likely to attend."

15. To further evaluate this issue, we examined whether there were notable improvements in achievement gaps in the post-affirmative action states using 1990/1992 and 2000/2003 eighth-grade math test score data from the National Assessment of Educational Progress (NAEP). Little progress was made between these years nationally and changes in post-affirmative action states were comparable with other states. Detailed results are available from the authors.

16. Bastedo and Jaquette (2011) use the National Longitudinal Study of the High School Class of 1972 (NLS72), the High School and Beyond (HS&B) Longitudinal Study of 1980, NELS, and ELS to analyze low-income students' access to higher education; Shiffrer, Pearson, Muller, and Wilkinson (2012) uses

HS&B, NELS, and ELS to study the college-going benefits of high school sports participation; Klasik (2012) uses NELS and ELS to analyze how changes in postsecondary application processes affect individuals' enrollment choices; and Long (2010) uses NLS72, HS&B, and NELS to measure changes in affirmative action between 1972 and 1992.

17. When missing, this variable is imputed using NELS/ELS administered exams in 8th, 10th, and 12th grades.

18. Derived by the U.S. Department of Education.

19. Derived by the authors using a principal components analysis and based on the following factors: pupil-teacher ratio, percentage of prior graduates in a 2- or 4-year college, percentage of students in dropout prevention program, percentage of students enrolled in college preparation courses, attendance rate (NELS only), and district's instructional and support expenditures per pupil (from Common Core of Data). The first principal component explains 36% and 31% of the variance in the underlying variables for NELS and ELS, respectively.

20. We base our construct of vector \mathbf{X} on the most common applicant characteristics used to make admission decisions. See, for example, Camara and Kimmel (2005) and Zwick (2002).

21. In contrast, the College and Beyond data set used by Bowen and Bok (1998) and others contain data mostly from very elite institutions. The College and Beyond institutions also are limited in geographic distribution, and are mostly in the East, and thus are not suitable to answer the research question we are addressing.

22. The level of affirmative action at colleges with MSACT $\geq 1,300$ appears to be higher in 2004 than 1992. We caution the reader that the estimates of affirmative action at these tails of the selectivity distribution are based on very few applications (with only 70 applications going to such institutions in both cohorts), and thus the standard errors on these estimates are quite high.

23. As a robustness check, rather than estimating affirmative action for a series of ranges, we followed the approach in Long (2004a) which estimated a single logit regression that included M_i and X_{ij} (from Equation 1) and these interacted with the college's MSACT and MSACT-squared. Using this procedure, we found that affirmative action declined from 8.4 to 4.1 percentage points for all colleges with MSACT $\geq 1,000$ (p value = .041); from 16.7 to 9.3 percentage points for colleges with MSACT $\geq 1,100$ (p value = .067); and from 25.6 to 14.0 percentage points for colleges with MSACT $\geq 1,200$ (p value = .088). The within-region estimates using this alternate specification had the same pattern as those shown in Table 2.

24. Using the interaction specification discussed in footnote 23, we find a weakly significant decline in affirmative action from 15.1 to -1.7 percentage points for colleges in these states with MSACT ≥ 1,100 (p value = .089).

25. This cross-region difference is also significant using a two-tailed test (p value = .036).

26. Georgia Tech has made public statements that the institution has not considered race in admission decisions since at least 2001 (Gose & Schmidt, 2001).

27. This difference is weakly significant using a two-tailed test (p value = .086).

28. This difference is weakly significant using a two-tailed test (p value = .071).

29. This difference is weakly significant using a two-tailed test (p value = .095).

30. In the black-and-white print version of this figure, darker regions reflect higher levels of affirmative action.

31. One should not take the estimates for any particular county as revealing the precise level of affirmative action for that county as the standard errors on these county-level estimates are large. For example, the modestly negative levels of affirmative action shown for Georgia counties in 1992 are driven by two factors: (a) the precise MSACT of two institutions that have large weights for students in Georgia counties, Georgia Tech, and Emory University (1,191 and 1,193); and (b) a negative estimated level of affirmative action for colleges in post-affirmative action states at precisely these MSACT levels (with positive estimated affirmative action just below and just above these MSACT levels). The within-region estimates of affirmative action for colleges in narrow MSACT bands have large standard errors for these eight states (and more noise than is shown in Figure 2 for all colleges). Thus, the estimates of affirmative action for these two institutions are measured with considerable error. In addition, our assumption that colleges of a given MSACT level will offer the same level of affirmative action as other colleges in the same region at that selectivity level may be erroneous (see Long & Tienda, 2008, and Card & Krueger, 2005, for suggestive evidence consistent with our assumption). If our assumption is wrong, our estimates of affirmative action for any particular institution could be substantially over or underestimated. Thus, one should look at Figure 3 with a *broad* eye as illustrating the likely national change in levels of affirmative action at nearby colleges.

32. These four surveys are the NLS72 and HS&B 1980 in addition to NELS and ELS.

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AUTHORS

GRANT H. BLUME is a PhD candidate in public policy and management at the Daniel J. Evans School of Public Affairs and a predoctoral fellow of the U.S. Department of Education’s Institute of Education Sciences. His research focuses on education policy, specifically in the areas of postsecondary access and college readiness.

MARK C. LONG is an associate professor in the Evans School of Public Affairs and an adjunct associate professor in the Department of Economics at the University of Washington. His research examines the effects of public policies (particularly education policy) on economic opportunity and social mobility, with emphasis on estimating the benefits and costs of those policies.

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