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A State-by-State Assessment of Percent Plans as a Race-Neutral Means of Achieving Postsecondary Racial Diversity

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For nearly half a century, affirmative action policies have been an important part of efforts aimed at achieving more equitable higher education access and outcomes. Although the recent *Fisher* decision did not, as some feared, prohibit the use of affirmative action in college admissions decisions, it did pose a new empirical challenge for universities that seek to defend their affirmative action policies against future challenges. The era of deference to school claims about the necessity and effectiveness of affirmative action policies appears to be drawing to a close. These developments have put pressure on universities to show that there are *not* workable, race-neutral alternatives to current race-based affirmative action policies that might also achieve desired levels of diversity. Some states are already using such alternatives.

In this paper we focus on one of these alternatives: "Percent Plans." Percent plans—such as those now in place in California, Texas, and Florida—work by guaranteeing admission to a public four-year institution for students from that state who graduate in some specified top percentage of their high school class. Such programs hope to capitalize on the existing diversity and segregation between public high schools to create diversity in the state's public university system. As discussed below, there is not much evidence that suggests that such plans are effective in reproducing the levels of diversity that states attained when percent-plan states used race-conscious admissions policies. It is an open question, however, whether percent plans are doomed to fail in all states, or if their lack of success is a function of the particular character of the states that have adopted them.

Alternatively, because California, Texas, and Florida are relatively racially-diverse states, it may be that the results of each state's percent plans represent the best possible outcome if these admissions policies were to be adopted more broadly across the country.

Thus, the goal of this paper is to determine the extent to which percent plans represent viable race-neutral admissions alternatives in each state in the US. A state with no racial segregation between high schools will likely not be successful in achieving a desirable level of racial diversity with a percent plan and no other form of race-based affirmative action. But how much segregation is required for a percent plan to have any chance of success? Which states currently have the segregation levels to support percent plans as valid race-neutral alternatives to affirmative action? These are the open, empirical questions at the heart of this paper. We use enrollment data by race and ethnicity from every public high school in the country as well as class rank information from a nationally representative set of high school students to predict the effect of percent plans in every state. We then examine how state levels of high school segregation correlate with the levels of racial diversity reached in these simulations.

Background

Black and Hispanic students have long been under-represented at four-year colleges and universities. In 2004, despite comprising 14.4 percent of the population of 18 year olds in the US, and 13.5% of high school graduates, Black students comprised only 11.7% of the population of students enrolled in four-year colleges, and just 4.1 percent of those enrolled in the most selective colleges (Reardon, Baker, & Klasik 2012).[1] For Hispanics the numbers are not any better: Hispanics made up 16.1 percent of 18 year olds, 14.5 percent of high

[1] "The most selective colleges" here are defined as those ranked as "most competitive" in the Barron's Admissions Selectivity Index.

school graduates, 8.9% of students at four-year colleges and 8.8 percent of students at the most selective colleges (Reardon, Baker, & Klasik, 2012). The under-representation of these students at the most selective colleges is particularly troubling given how much more likely students from these colleges are to complete college, but to complete college with low levels of debt (Hoxby & Avery, 2012; Hoxby & Turner, 2013).

At least some of the observed disparities in college enrollment result from the fact that admission to college, and in particular to selective colleges, relies heavily on both a student's academic achievement during high school, and his or her performance on standardized exams like the SAT or ACT. A long line of research, however, has documented the achievement gap between White or Asian and Black or Hispanic students. White and Asian students consistently perform better on average in academic settings than their Black and Hispanic peers. (Kane, 1998; Reardon, Baker, & Klasik, 2012). In 2013, the average score on the SAT among Black test takers was 1278 (out of a possible 2400) (College Board, 2013). In that same year, White SAT test takers on average scored nearly 300 points higher (College Board, 2013) These achievement differences are not a direct result of race, but rather disparities across a number of dimensions associated with race including access to educational opportunities or teacher bias (Ferguson, 1998; Kane, 1998).

Whatever the cause, these performance disparities put minority students at a distinct disadvantage in the purportedly meritocratic selective college admissions system. Combined with a desire for racial diversity because it benefits college students in general, (Chang, et al. 2006), colleges have employed race-based affirmative action policies in order to achieve higher levels of racial diversity on their campuses than if they were required to ignore race entirely. The ability of such policies to create racial diversity is decidedly

modest (Reardon, Baker, & Klasik, 2012). Race-based affirmative action policies only appear to make detectable differences in admissions decisions at the most selective colleges, but Black and Hispanic students are represented at these schools at less than half the rate they are in the full population (Kane 1998, Reardon et al. 2014).

Despite their narrow use and limited effect, race-based affirmative action policies have been the subject of numerous legal challenges that have made it all the way to the Supreme Court (including *Fisher v. the University of Texas*, *Grutter v. Bollinger*, *Regents of the University of California v. Bakke*). As a result of these challenges, the prospect of the Court continuing to permit colleges to continue to use of such race-based affirmative action policies is increasingly in doubt. Most recently in the *Fisher* decision, the Court allowed the continued use of race-based affirmative action policies so long as colleges show "that no workable race-neutral alternatives would produce the educational benefits of diversity" (*Fisher v. the University of Texas*, 2013, p. 11).

Percent Plans

In response to legal challenges and to voter-approved bans on the use of race in affirmative action, states have looked to race-neutral alternatives. Some states, taking advantage of race-income correlations, have tried income-based affirmative action. Some scholars have suggested that these policies might help maintain a modest level of racial diversity (Carnevale & Rose, 2004; Gaertner & Hart, 2013; Kahlenberg, 2012), but it is not clear that that income can broadly serve as a reasonable and effective proxy for race (Reardon et al. 2014).

A second, and more widely used, race-neutral alternative to race-based affirmative action is percent plans. The goal of percent plans is to achieve desired levels of racial

diversity in public colleges without using race-based affirmative action policies. These plans admit students if they fall in some pre-specified percentage of their graduating class. The exact top percent used varies slightly by state (i.e. Texas uses 10 percent, California uses 9 percent, Florida uses 20 percent), but the goals and principles behind the plans are the same: percent plans aim to achieve racial diversity in spite of race-based differences in academic achievement by taking advantage of existing race-based residential (and thus high school) segregation.

The key feature behind percent plans is that they admit the top percentage of students *in a given high school*. It is worth highlighting how this differs from most other admissions processes. Under standard admissions systems, a university system or college might consider all of the applications it receives and admit, roughly, the top percentage of that pool, regardless of what high school a student attended. Because of race-based disparities in academic performance, this top percentage of students is likely to be disproportionately White and Asian. Traditional race-based affirmative action steps in to address this disparity. Under typical affirmative action policies, admissions officers are able to give additional consideration to minority applicants in order to meet institutional diversity goals.

Under percent plans, students are first considered for admission within their high school context. This context is important because students are not distributed randomly to high schools, and it is the non-random sorting of students into high schools that percent plans utilize. If students were randomly assigned to high schools within their state than accepting a fixed percentage of the top of each high school class would be essentially equivalent to accepting the same top percentage of students across the state as a whole.

However, because of patterns residential segregation, some high schools serve more racially diverse populations of students than others. Naturally, the top percentage of students in high schools with high minority populations are more likely to include racial minority students. By admitting students from the top percentage of each high school, public institutions are able to admit these minority students even if they do not fall in the top percentage of students in the state as a whole. Thus, percent plans—ironically—capitalize on residential racial segregation in order to ameliorate racial disparities in college enrollment. As Justice Ginsburg said in her dissenting opinion in *Fisher* "Texas' percentage plan was adopted with racially segregated neighborhoods and schools front and center stage. It is race consciousness, not blindness to race, that drives such plans" (Fisher v University of Texas, 2013, p 2433).

The Effects of Percent Plans

Percent plans are currently in place in California, Florida, and Texas. The Texas plan was the first of three, signed into law in 1997, followed by California in 1999 and Florida in 2000. With up to seventeen years of implementation, researchers have had plenty of opportunity to study the effects of the plans across the three states in terms of expected and unexpected outcomes. All three states had the goal of creating sufficiently racially diverse classes of public college students in the face of legal and political challenges to race-based affirmative-action plans. In addition to this main effect, researchers have also studied a broad range of unintended consequences related to percent plans, included changes in high school enrollment patterns and students' high school and college academic success.

Florida's 20 percent plan appears relatively successful. Florida has roughly maintained racial diversity in its public system, although this is in large part because of

enhanced recruiting efforts and that the 20 percent threshold casts a wide enough net that most of the students admitted under the program would have gained admission to the Florida system without the plan.

California and Texas both saw dramatic drops in their minority enrollments, particularly at their flagship public institutions after each state banned race-based affirmative action (Arcidiacono & Lovenheim 2004; Long, 2004, 2007). Percent plans in each state helped to recover some of this decline in minority enrollment, but in no state has the underrepresentation of minority students on public campuses returned to pre-affirmative-action-ban levels (Horn & Flores, 2003; Lim, 2013; Long, 2007). In particular, Long (2007) found that, under percent plans, minority representation on these campuses have recovered only about a third of what they lost as a result of affirmative action bans. There is also evidence that the recovery in Texas did not affect Black and Hispanic students equally. The percent plan in Texas appeared to have a stronger effect on the likelihood that Hispanics enrolled in flagships institutions than it did for students of any other race (Niu & Tienda, 2010).

One possible explanation for the modest success of percent plans is that students admitted under the policies may not enroll in public institutions at the same rate by race. Indeed, over 90% of Texas students in the top 10 percent of the class enrolled in college (Tienda & Sullivan, 2009). Yet this average masks the fact that attendance rates were higher (97 percent) in affluent schools and as low as 80 percent in less-affluent schools (Tienda & Sullivan, 2009). To the extent that affluence is a proxy for racial diversity, these attendance rates imply that while percent plans may admit more minority students to public colleges, these students are still less likely to enroll than their White peers.

Even though the racial diversity gains from Texas's percent plan have been modest, it has served to increase the regional diversity of students at Texas schools. Prior to percent-plan implementation, states relied primarily on urban and suburban high schools for their admissions pools, but this feeder system became spread more evenly across the state after the percent plan was enacted (Long, Saenz, & Tienda, 2010). While minority enrollment may have declined relative to levels achieved under affirmative action, the percent plans lead to increases in the number of students coming from rural parts of Texas. Further, the Texas percent plan increased the likelihood of admission to Texas flagship universities for students from under-performing high-schools (Cortes and Zhang, 2012)

The modest recovery of racial diversity for public systems in general obscures differential effects at flagship public institutions. Under percent plans, Black and Hispanic students ultimately enroll in state flagship institutions at disproportionately lower rates that at non-flagship schools (Lim, 2013). Alfanso and Calcagno (2007) find that differential admissions and enrollments at flagships compared to non-flagship schools mute some of the Texas plan's success.

One consequence of the Texas system offering admission to a lower percentage of minority students under the percent plan is that the minority students might have been admitted under affirmative action but weren't under the percent plan ultimately enrolled in less selective colleges. As a result, overall college retention rates and graduation rates for minority students in Texas since the banning of affirmative action (Cortes, 2010). There is also evidence that students that were admitted to Texas's flagship colleges under the percent plan who otherwise would not have had lower GPAs and were less likely to graduate (Furstenberg, 2010).

Finally, while percent plans rely on high school segregation in their attempts to achieve racial diversity, they also incentivize integration. A White student concerned he or she might not graduate in the top 10 percent of their class might decide to transfer to a high-minority high school where he or she might have a better chance of reaching the 10 percent threshold. Consistent with this incentive, students were observed "trading down" Texas districts with multiple high schools—enrolling in high schools where the threshold for entry into the top 10 percent was low, displacing minority students form the top ten percent pool (Cullen, Long, and Reback, 2012). Thus percent plans appear to spur de facto integration in high schools (Lim, 2013), which may weaken the effects of percent plans in generating racial diversity in the long run.

Percent Plan Simulations

This paper is not the first to simulate the effect of percent plans, but it does take these analyses in several new and important directions. Howell (2010) conducted the most thorough simulation in which college and students in her model made strategic application and admissions decisions, and change their behavior in the face of race-neutral admissions policies. She finds that a national affirmative action ban would lead minority representation at all four-year colleges to decline by 2%, and by over 10 percent at selective colleges. A simulated, national top 10 percent plan would do little to remedy these losses. Long (2004) similarly simulates that a top 10 percent plan would not serve to recover racial diversity lost in the face of a nation-wide ban on affirmative action.

Both of these studies, however, focus on a national context. This approach, however, poses a policy solution with no plausible real world analog—states are the relevant unit of analysis as no national affirmative action has ever seriously been proposed or considered.

Just as importantly, simulations of national plans may occlude the fact that some states may be more successful in maintaining or restoring racial diversity in public colleges due to varying demographics and levels of racial segregation between high schools. In the simulations at follow, we use class rank predictions from a nationally representative set of data to predict the likely racial composition of the top 10 percent of students in every public high school in the country for which race data is available. From these predictions we construct what the composition of a theoretical admitted class might look like in each state and connect this to measures of racial dissimilarity of high schools in each state. This approach gives a more nuanced assessment of the viability of percent plans for states university systems that are weighing race-neutral affirmative action alternatives.

Data

We use data from three main sources: The National Education Longitudinal Survey of 1988 (NELS), the Common Core of Data (CCD), and the Integrated Postsecondary Education Data System (IPEDS). NELS is a nationally representative, longitudinal survey of students as they move through high school and into college and the workforce. The cohort was first surveyed in 1988 when students were in eighth grade, again in 1990 when most were high school sophomores, and again two years later (1992) when most students were seniors. This data is important for the present study because the second follow up survey contains roughly 16,000 observations with information about students' race, their high school rank, and an identifying variable that allows them to be linked to the particular high school they attended (if it was public). We use this data to predict the likelihood a student of a given race graduates in the top 10 percent of his or her high school given certain high school characteristics. While more recent national survey data is available in the Education

Longitudinal Survey of 2002, this data does not contain information about class rank, which limits our ability to predict the racial composition of the top 10 percent of high school classes. Using the older NELS data, however, does have an advantage in addition to including class rank data: it was collected before any state had banned the use of race-based affirmative action in public university systems. Therefore it allows us to compare the outcomes of simulated percent plans to the real outcomes achieved by affirmative action in each state.

Like the NELS, the CCD is also compiled by the National Center for Education Statistics. It contains basic characteristics about every public school and district in the country. We look specifically at twelfth grade enrollment, total school enrollment, the racial composition of the school, and the location of the school. While more current versions do, the 1991-92 version of the CCD did not include data on the racial composition of schools for each grade, just the racial composition of the school as a whole. Ultimately we are able to simulate percent plans based on data from 16,255 public schools that reported having twelfth grade enrolled. These schools come from all states and the District of Columbia, except for Georgia, Idaho, Maine, South Dakota, and Virginia, which did not report school race data in this data collection year.

Finally, we use IPEDS data to describe the racial composition of first time, full time, first year students (new, full time, freshmen) in public colleges and universities in 1992-93. IPEDS allows for this comparison because it includes race and enrollment information for every college and university in the country that receives Title IV funds (federal student aid). This data serves as a comparison for our simulations in that they represent the racial

composition of public institutions in each state that was actually achieved with the high school graduating class of 1992.

Method

Percent Plan Simulations

We run two main simulations of percent plans. First, we assume a best-case scenario in which there is no achievement gap—students from all race backgrounds are equally likely to appear in the top 10 percent of their high school class. We thus admit 10 percent of students from every school in proportions equal to the representation of their race in their school. For example, if a school had 100 seniors and was 50 percent White, 20 percent Hispanic, 20 percent Black, and 10 percent Asian, we "admit" from that school five White students, two Black and Hispanic students, and one Asian. In the aggregate, it is not hard to see that the class of students admitted under this simulation reflects almost exactly the racial diversity of the state's high school population. Since this model assumes parity in achievement levels between races, it serves as an absolute upper bound for diversity.

The second model more accurately simulates what the top 10 percent of high school classes will look like. Using the nationally representative NELS data we run a basic model predicting the likelihood that a given student of a given race falls in the top 10 percent of their class. Specifically we run the logistic model predicting:

$$Top10_{is} = \beta_0 + \beta_1 Race_i \beta_1 + Race\%_s \beta_3 + Locale_s \beta_3 + Region_s \beta_4 + Interactions_{is} \beta_5 + \varepsilon_{is}$$

That is, we predict the likelihood a student is observed in the top 10 percent of their class given their race ($Race_i$), the racial composition of their school ($Race\%_s$), the locale of their school (urban, rural, etc.) ($Locale_s$), the Census-defined region of the country their school is in ($Region_s$), and interaction effects between the students' race and all other variables

($Interactions_{is}$). We take the estimated coefficients from this model and use data from the Common Core of Data to predict the likelihood of hypothetical students of each race appearing in the top 10 percent of every public high school in the country. From this, we complete this version of the simulation by "admitting" the number of students of a given race in a given school times the probability of students from that race being in the top 10 percent in that school.

These simulations are based on assumptions that serve to help create theoretical upper-bounds of percent plan effects. For example, we assume that all students who are in the top 10 percent of their high school class apply to their state's public institutions. It is neither likely that this would be the case, nor that public institutions would have the space to enroll all of these students should they choose to attend. However, this assumption does allow us to capture the entirety of the set of students who could potentially enroll in state universities under percent plans: We admit as many students, minority and otherwise, as possible. Because of differential college enrollment rates among top-10 percent students by school resources (Tienda & Sullivan, 2009), the diversity of enrolled classes are likely to be lower than those we simulate.

Second, due to data limitations in the 1991-92 CCD, we are only able to see the racial composition of schools as a whole rather than the specific racial composition of the twelfth grade class so we must assume the twelfth grade class reflects the composition of the school as a whole. Because we know in fact that dropout rates vary by race, this assumption likely means that we are assuming the twelfth grade class is more diverse than it actually is. Again, this will have the effect of causing our simulations to include more racial minorities in the top 10 percent of their class than there likely would be. This consequence is

consistent with the above assumption in that it helps us create an ideal-world, upper-bound to percent plans.

Finally, the data do not support including students from private schools in our simulations. Because private school students comprised roughly 9 percent of all US high school students in 1992 (US Department of Education, 1993), this may not be a trivial omission. However, if anything, this assumption also likely inflates our estimates of racial diversity in our simulations if private schools tend to be less diverse that public schools.

Racial Dissimilarity

In addition to simulating the theoretical effects of percent plans in each state, one of the main goals of this study is to connect the relative success of these plans to levels of state-wide high school segregation. We measure segregation using a racial dissimilarity index. This index is calculated by the formula (from Taeuber & Taeuber, 1965):

$$D_r = \sum_{s \in S} \frac{t_s |\pi_{sr} - \pi_r|}{2T\pi_r(1 - \pi_r)}$$

Where D_r is the dissimilarity index for race r; s is a school belonging to the set of all schools S in a state; T is the total number of 12th grade students in S; t_s is the 12th grade enrollment in school s; π_{sr} is the proportion of students of race r in school s; and π_r is the proportion of race r in the total population. The value of this index can be interpreted as the ratio of the percent of all students who would have to transfer between schools in order to equalize the group proportions across schools relative to the percentage that would have to transfer starting from a state of complete segregation (Reardon, 2006).

Results

Simulated Diversity

We present the results of our simulations in Tables 1, 2 and 3 for Black, Hispanic, and White students, respectively. By state, each table gives (1) the composition of a simulated top 10 percent class of public university students if students from a given race were represented in the top 10 percent in equal proportion to their representation in their school as a whole; (2) the composition of a simulated top 10 percent class of public university students based on the predicted composition of the top 10 percent according to school demographic characteristics; (3) the actual composition of first-time, full-time, first-year students enrolled in public universities; (4) the difference between (2) and (3) (i.e. the difference between the simulated top 10 percent class composition and the actual composition of enrolled students); (5) the percentage change from actual enrollment this difference represents; and (6) the dissimilarity index for the given race in the given state.

Table 1 gives the results for the representation of Black students in public universities. If there were no achievement gap and Black students were as likely to appear in the top 10 percent of their high school as any other student, then we estimate that public university systems would see classes ranging from 0 percent Black students in states like Montana where there is a very small Black population, to nearly 50 percent Black students in Mississippi. When we simulate the top 10 percent class based on predicted likelihoods that Black students fall in the top 10 percent of their high school class, we estimate values ranging from 0 to roughly 27 percent. Mississippi has the largest proportion Black again in this simulation, but the percent of Black students they achieve under the plan is almost half of what the state would achieve in our "no achievement gap" scenario. Several states – Iowa, Kansas, Minnesota, Montana, North Dakota, Nebraska, and Vermont – were not predicted to admit any Black students in the predicted top 10 percent scenario. These zero

estimates are largely due to the extremely small Black student population in these states, but may also be a result of noise in the predictions.

In the predicted top 10 percent scenario, all states lose Black students relative to what they actually achieved under existing affirmative action policies. Only seven states lose fewer than 25 percent of their Black students under this simulation: Alabama, Arizona, Colorado, Nevada, Tennessee, South Carolina, and Wisconsin. Wisconsin and Nevada are the only two that lose less than 10 percent.

Table 2 presents the same results for Hispanic students. New Mexico has both the highest percent of Hispanic students under the proportional percent plan simulation and the predicted top 10 percent simulation. Under these simulations, 49 percent and 32 percent of New Mexico's public institutions would be Hispanic, respectively. These numbers are not far off from the actual proportion enrolled in New Mexico's public system, 37 percent. While 39 states in the predicted top 10 percent simulation would decrease Hispanic students relative to the actual proportion they achieved, 6 states grew in the proportion of Hispanic students they might admit. Specifically, California, Delaware, Florida, Hawaii, and Texas were all predicted to see increased numbers of Hispanic student admitted under a predicted percent plan. Four other states were simulated to lose fewer than 25 percent of their actual Hispanic representation in public universities: Arizona, Massachusetts, New Mexico, and Washington. All other states were predicted to lose over 25 percent of their Hispanic representation in their public university system.

Finally, Table 3 gives the results for would happen to White student representation on public university campuses in our percent plan simulations. Given proportional representation in the top 10 percent, state systems are estimated to be comprised of

anywhere from 20 percent White students (Hawaii) to 99 percent White students (Vermont). Predictions of the top 10 percent result in similar levels of representation ranging from 26 percent (Hawaii) to 100% (Vermont). In contrast to the representation of Black and Hispanic students in our predicted top 10 percent simulation, White students are expected to increase their representation in all states but Texas if affirmative action policies were to be replaced with percent plans. In Texas, the representation of White students is predicted to decline by roughly 7 percent.

Percent Plans and Segregation

Figures 1 and 2 show the scatter plot relationship between percent change in representation between actual college enrollment and predicted top 10 percent enrollment and racial dissimilarity for Black and Hispanic students, respectively. What both of these figures show is that there does not appear to be a strong relationship between measures of school racial segregation measures and the relative effectiveness of a simulated top 10 percent plan. There are a few possible explanations for why this might be the case. First, it may be that even at highly segregated schools White students still take up a disproportionately large portion of the top 10 percent of their high school class, suggesting that some of the theory that undergirds percent plan policies may not be born out in the real world. Second, it may be that there is enough noise in the estimation of the likelihood that certain groups of students fall in the top 10 percent of their class that the relationship between segregation measures and the simulated top 10 percent is not readily apparent.

Discussion and Conclusion

We set out in this study to explore the extent to which percent plans might serve as viable race-neutral alternatives to race-based affirmative action college admission policies

at public universities. By using nationally representative data and simulating that the likely composition of the top 10 percent of every twelfth grade high school class in the country might look, we estimated the potential composition of a class of students admitted under a percent plan policy in every state for which school race composition data was available. Under assumptions that are generous to the success of percent plans, we find that percent plans are not viable options for maintaining the levels of racial diversity public university systems achieved under race-based affirmative action policies. In all of our state simulations we predicted that states would see decreases in the proportion of the representation of Black students on public campuses, and in nearly 90 percent of states we found that Hispanic college populations would also decrease. Despite the noise in some of our estimates of high school class composition, these declines in minority enrollment are remarkably consistent.

It is worth commenting on the fact that the three states with percent plans in place appear on the list of states predicted to gain in Hispanic representation. The empirical evidence we reviewed demonstrated that under percent plans Florida maintained its Hispanic representation, while California and Texas both lost Hispanic representation relative to levels achieved under affirmative action. The disparity between what these states experienced and what we predict serves to illustrate that our simulations represent scenarios in which the odds have been stacked in favor of percent plans being as successful as possible. The vagaries of student application and enrollment choices and how students respond to the introduction of percent plans will determine the extent to which states achieve the levels of diversity that we predict. As California, Florida, and Texas

demonstrate, it is likely that states will see diversity results lower than our optimistic scenarios.

Given that California, Texas, and Florida were among the only states to have predicted increases in Hispanic enrollment, and that Texas was the only state predicted to see an overall decrease in the proportion of White student enrollment, it is clear that California, Florida, and Texas were among the most promising states for percent plan viability. In these states, there appeared to be a reasonable chance that percent plans could be successful at maintaining racial diversity at public universities in the face of affirmative action bans. That only Florida is viewed as being reasonably successful in its percent plan should serve as a cautionary tale for other states hoping that they might have better results with their own implementation of a percent plan.

These findings add to a growing body of evidence that illustrate that percent plans cannot serve to recover losses in racial diversity that occur when the use of race-based affirmative action is banned. It is not particularly surprising that percent plans are not as successful at achieving postsecondary racial diversity as affirmative action. These plans are based on the theory that racial minority students are more likely to be in the top percentage of high minority high schools. This theoretical assumption may not be true—we did not find strong evidence for a connection between high school racial segregation and the success of a percent plan. However, given this is the premise on which percent plans are based, they are not really race neutral at all, they just move one degree away from explicitly using race in admissions decisions.

A similar judgment has begun to develop of plans that seek to use income- or SES-based affirmative action plans in an attempt to achieve diversity without using race

directly. Rather than use race directly in the admissions process, they instead use an alternative indicator (income) that is well-known to correlate with race. It is not apparent that these plans can serve to generate high levels of racial diversity either (Reardon et al. 2014). As a result, it appears that whatever proxy admissions officers or policy makers come up with to use as a "race-neutral" alternative of generating racial diversity at public universities will likely be neither truly race neutral nor be as effective as using race itself in the admissions process. As Justice Ginsburg keenly noted, "Only an ostrich could regard the supposedly neutral alternatives as race unconscious" (Fisher v. University of Texas, 2013, p 2433)

If racial diversity is an important goal of university offices, then making admissions decisions based at least in part on a student's race is logically (and, increasingly empirically) the most efficient and effective way of creating this diversity. There may be other compelling reasons for using percent plans or income-based affirmative action, such as achieving geography or income diversity in public university systems, but these are not effective race-neutral ways of achieving *racial* diversity. Though these alternatives may be more politically and legally palatable, states that intend to pursue these racial diversity goals will need to justify the imperative of using race. And to that end, this paper, like the others cited, provide support to those important public policy ends.

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Table 1.

Proportion Black Students in Public Universities, by State

State	State Proportion	Predicted Top 10%	Actual Public University Proportion	Predicted - Actual	Percent Change ((Predicted - Actual)/Actual)	Dissimilarity Index
AK	0.0527	0.0138	0.0355	-0.0217	-61.2%	0.5044
AL	0.3375	0.2150	0.2822	-0.0672	-23.8%	0.5544
AR	0.2214	0.1143	0.1752	-0.0609	-34.8%	0.6255
AZ	0.0421	0.0176	0.0228	-0.0053	-23.1%	0.4111
CA	0.0756	0.0321	0.0640	-0.0319	-49.9%	0.5069
CO	0.0438	0.0217	0.0272	-0.0055	-20.2%	0.6403
CT	0.1009	0.0225	0.0653	-0.0428	-65.5%	0.6270
DE	0.2628	0.1000	0.1480	-0.0480	-32.4%	0.1316
FL	0.2192	0.1072	0.1497	-0.0426	-28.4%	0.4021
HI	0.0142	0.0014	0.0033	-0.0019	-58.3%	0.4945
IA	0.0215	0.0000	0.0325	-0.0325	-100.0%	0.6644
IL	0.1600	0.0623	0.1409	-0.0786	-55.8%	0.7102
IN	0.0903	0.0332	0.0605	-0.0273	-45.1%	0.7068
KS	0.0633	0.0000	0.0432	-0.0432	-100.0%	0.6046
KY	0.0853	0.0461	0.0936	-0.0475	-50.7%	0.5734
LA	0.4189	0.2245	0.3269	-0.1024	-31.3%	0.4794
MA	0.0674	0.0111	0.0407	-0.0296	-72.8%	0.6152
MD	0.2968	0.1600	0.2674	-0.1073	-40.1%	0.5666
MI	0.1183	0.0473	0.0979	-0.0506	-51.7%	0.8117
MN	0.0241	0.0000	0.0155	-0.0155	-100.0%	0.6964
MO	0.1230	0.0004	0.0713	-0.0709	-99.4%	0.6770
MS	0.4885	0.2684	0.4072	-0.1388	-34.1%	0.5060
MT	0.0000	0.0000	0.0039	-0.0039	-100.0%	0.4727
NC	0.3003	0.1196	0.2386	-0.1191	-49.9%	0.3913
ND	0.0027	0.0000	0.0059	-0.0059	-100.0%	0.5869
NE	0.0387	0.0000	0.0264	-0.0264	-100.0%	0.7426
NH	0.0039	0.0010	0.0062	-0.0052	-83.3%	0.3536
NJ	0.1499	0.0822	0.1216	-0.0393	-32.3%	0.6333
NM	0.0216	0.0032	0.0220	-0.0187	-85.2%	0.4504
NV	0.0933	0.0486	0.0491	-0.0005	-1.0%	0.4269
NY	0.1472	0.0758	0.1491	-0.0733	-49.2%	0.6491
OH	0.0994	0.0375	0.0874	-0.0499	-57.1%	0.7275
OK	0.0955	0.0349	0.0951	-0.0602	-63.3%	0.5724
OR	0.0184	0.0078	0.0170	-0.0092	-54.1%	0.6267
PA	0.0928	0.0568	0.0836	-0.0268	-32.0%	0.7222
RI	0.0517	0.0063	0.0263	-0.0200	-75.9%	0.6284

State	State Proportion	Predicted Top 10%	Actual Public University Proportion	Predicted - Actual	Percent Change ((Predicted - Actual)/Actual)	Dissimilarity Index
SC	0.3914	0.1677	0.1936	-0.0259	-13.4%	0.4115
TN	0.1933	0.1417	0.1703	-0.0286	-16.8%	0.6517
TX	0.1303	0.0659	0.1208	-0.0549	-45.5%	0.5466
UT	0.0041	0.0004	0.0064	-0.0060	-93.7%	0.5269
VT	0.0000	0.0000	0.0049	-0.0049	-100.0%	0.2793
WA	0.0344	0.0108	0.0355	-0.0247	-69.7%	0.5280
WI	0.0511	0.0156	0.0162	-0.0007	-4.1%	0.7898
WV	0.0334	0.0102	0.0518	-0.0416	-80.4%	0.5805
WY	0.0065	0.0039	0.0112	-0.0073	-65.1%	0.5493

Table 2.

Proportion Hispanic Students in Public Universities, by State

State	State Proportion	Predicted Top 10%	Actual Public University Proportion	Predicted - Actual	Percent Change ((Predicted - Actual)/Actual)	Dissimilarity Index
AK	0.0234	0.0098	0.0275	-0.0177	-64.3%	0.3085
AL	0.0005	0.0000	0.0056	-0.0056	-100.0%	0.5443
AR	0.0007	0.0000	0.0049	-0.0049	-100.0%	0.4919
AZ	0.2427	0.1080	0.1085	-0.0005	-0.4%	0.4827
CA	0.3177	0.2695	0.1868	0.0826	44.2%	0.4497
CO	0.1439	0.0611	0.0905	-0.0294	-32.5%	0.4460
CT	0.0732	0.0244	0.0443	-0.0199	-44.8%	0.5921
DE	0.0239	0.0268	0.0104	0.0163	156.5%	0.3020
FL	0.1338	0.1651	0.1566	0.0085	5.4%	0.5961
HI	0.0535	0.0750	0.0080	0.0671	843.7%	0.2302
IA	0.0080	0.0007	0.0151	-0.0144	-95.7%	0.4515
IL	0.0750	0.0454	0.0719	-0.0264	-36.8%	0.6379
IN	0.0140	0.0066	0.0192	-0.0126	-65.4%	0.5758
KS	0.0335	0.0040	0.0233	-0.0194	-83.1%	0.4445
KY	0.0000	0.0000	0.0056	-0.0056	-100.0%	0.5468
LA	0.0075	0.0056	0.0162	-0.0106	-65.6%	0.6412
MA	0.0597	0.0232	0.0292	-0.0061	-20.7%	0.6145
MD	0.0228	0.0281	0.0240	0.0041	17.2%	0.5663
MI	0.0146	0.0052	0.0232	-0.0180	-77.7%	0.4675
MN	0.0086	0.0002	0.0123	-0.0121	-98.2%	0.4178
MO	0.0043	0.0004	0.0108	-0.0104	-96.3%	0.4849
MS	0.0000	0.0000	0.0054	-0.0054	-100.0%	0.6599
MT	0.0068	0.0000	0.0130	-0.0130	-100.0%	0.4494
NC	0.0027	0.0027	0.0080	-0.0052	-65.7%	0.4398
ND	0.0027	0.0000	0.0051	-0.0051	-100.0%	0.4820
NE	0.0208	0.0011	0.0181	-0.0170	-93.8%	0.4818
NH	0.0058	0.0010	0.0092	-0.0081	-88.7%	0.4837
NJ	0.0977	0.0414	0.1247	-0.0833	-66.8%	0.5885
NM	0.4935	0.3229	0.3709	-0.0480	-12.9%	0.4151
NV	0.1123	0.0360	0.0627	-0.0267	-42.6%	0.2798
NY	0.0974	0.0436	0.1153	-0.0717	-62.2%	0.6172
OH	0.0084	0.0031	0.0115	-0.0084	-73.1%	0.5811
OK	0.0188	0.0084	0.0253	-0.0169	-66.7%	0.4250
OR	0.0375	0.0177	0.0323	-0.0146	-45.2%	0.3703
PA	0.0170	0.0057	0.0143	-0.0086	-60.1%	0.6600
RI	0.0504	0.0152	0.0267	-0.0114	-42.9%	0.6407

State	State Proportion	Predicted Top 10%	Actual Public University Proportion	Predicted - Actual	Percent Change ((Predicted - Actual)/Actual)	Dissimilarity Index
SC	0.0014	0.0016	0.0075	-0.0059	-78.4%	0.4826
TN	0.0004	0.0000	0.0064	-0.0064	-100.0%	0.4606
TX	0.3101	0.3193	0.1995	0.1199	60.1%	0.6002
UT	0.0378	0.0092	0.0197	-0.0105	-53.4%	0.3652
VT	0.0000	0.0000	0.0070	-0.0070	-100.0%	0.3977
WA	0.0473	0.0257	0.0281	-0.0025	-8.8%	0.4599
WI	0.0149	0.0062	0.0140	-0.0078	-56.0%	0.5017
WV	0.0000	0.0000	0.0065	-0.0065	-100.0%	0.4932
WY	0.0583	0.0177	0.0426	-0.0249	-58.5%	0.4109

Table 3.

Proportion White Students in Public Universities, by State

State	State Proportion	Predicted Top 10%	Actual Public University Proportion	Predicted - Actual	Percent. Change ((Predicted - Actual)/Actual)	Dissimilarity Index
AK	0.8750	0.8858	0.7315	0.1544	21.1%	0.4340
AL	0.6584	0.7790	0.6841	0.0949	13.9%	0.5313
AR	0.7730	0.8782	0.7852	0.0930	11.8%	0.5962
AZ	0.6956	0.8419	0.7506	0.0913	12.2%	0.4861
CA	0.4798	0.4925	0.4315	0.0609	14.1%	0.4618
CO	0.7883	0.8735	0.8133	0.0603	7.4%	0.4118
CT	0.8068	0.9410	0.8330	0.1080	13.0%	0.5888
DE	0.6980	0.8411	0.8102	0.0308	3.8%	0.1009
FL	0.6291	0.6919	0.6349	0.0570	9.0%	0.4552
HI	0.2009	0.2578	0.1286	0.1292	100.5%	0.2479
IA	0.9609	0.9928	0.9073	0.0855	9.4%	0.4892
IL	0.7340	0.8440	0.6992	0.1448	20.7%	0.6291
IN	0.8910	0.9517	0.8891	0.0626	7.0%	0.6229
KS	0.8887	0.9858	0.8374	0.1484	17.7%	0.4681
KY	0.9113	0.9468	0.8810	0.0658	7.5%	0.5565
LA	0.5624	0.7526	0.6245	0.1282	20.5%	0.4716
MA	0.8427	0.9485	0.8718	0.0766	8.8%	0.5979
MD	0.6386	0.7296	0.6168	0.1128	18.3%	0.5379
MI	0.8580	0.9290	0.8194	0.1096	13.4%	0.6562
MN	0.9386	0.9786	0.9155	0.0631	6.9%	0.4846
MO	0.8656	0.9934	0.8807	0.1128	12.8%	0.6258
MS	0.5080	0.7253	0.5710	0.1543	27.0%	0.4982
MT	0.9909	0.9946	0.9253	0.0693	7.5%	0.5167
NC	0.6894	0.8619	0.7154	0.1465	20.5%	0.3980
ND	0.9893	0.9960	0.9143	0.0818	8.9%	0.5550
NE	0.9310	0.9922	0.9244	0.0678	7.3%	0.5322
NH	0.9826	0.9928	0.9668	0.0260	2.7%	0.3865
NJ	0.7046	0.7587	0.6343	0.1244	19.6%	0.5568
NM	0.4756	0.6523	0.5302	0.1221	23.0%	0.3862
NV	0.7482	0.8502	0.7729	0.0773	10.0%	0.3004
NY	0.7102	0.7836	0.6300	0.1537	24.4%	0.6922
OH	0.8872	0.9499	0.8713	0.0786	9.0%	0.6510
OK	0.8744	0.9326	0.7504	0.1822	24.3%	0.3539
OR	0.9127	0.9090	0.8365	0.0725	8.7%	0.3403
PA	0.8756	0.8959	0.8655	0.0304	3.5%	0.6549
RI	0.8758	0.9721	0.9067	0.0654	7.2%	0.5945

State	State Proportion	Predicted Top 10%	Actual Public University Proportion	Predicted - Actual	Percent. Change ((Predicted - Actual)/Actual)	Dissimilarity Index
SC	0.6013	0.8191	0.7651	0.0540	7.1%	0.4017
TN	0.8014	0.8488	0.7964	0.0524	6.6%	0.6347
TX	0.5374	0.5742	0.6143	-0.0401	-6.5%	0.5217
UT	0.9396	0.9577	0.9081	0.0496	5.5%	0.3437
VT	0.9981	1.0000	0.9623	0.0377	3.9%	0.3623
WA	0.8550	0.8509	0.7957	0.0552	6.9%	0.3691
WI	0.9213	0.9587	0.9269	0.0317	3.4%	0.5628
WV	0.9647	0.9803	0.9250	0.0553	6.0%	0.5341
WY	0.9320	0.9705	0.9149	0.0557	6.1%	0.3825

Figure 1.

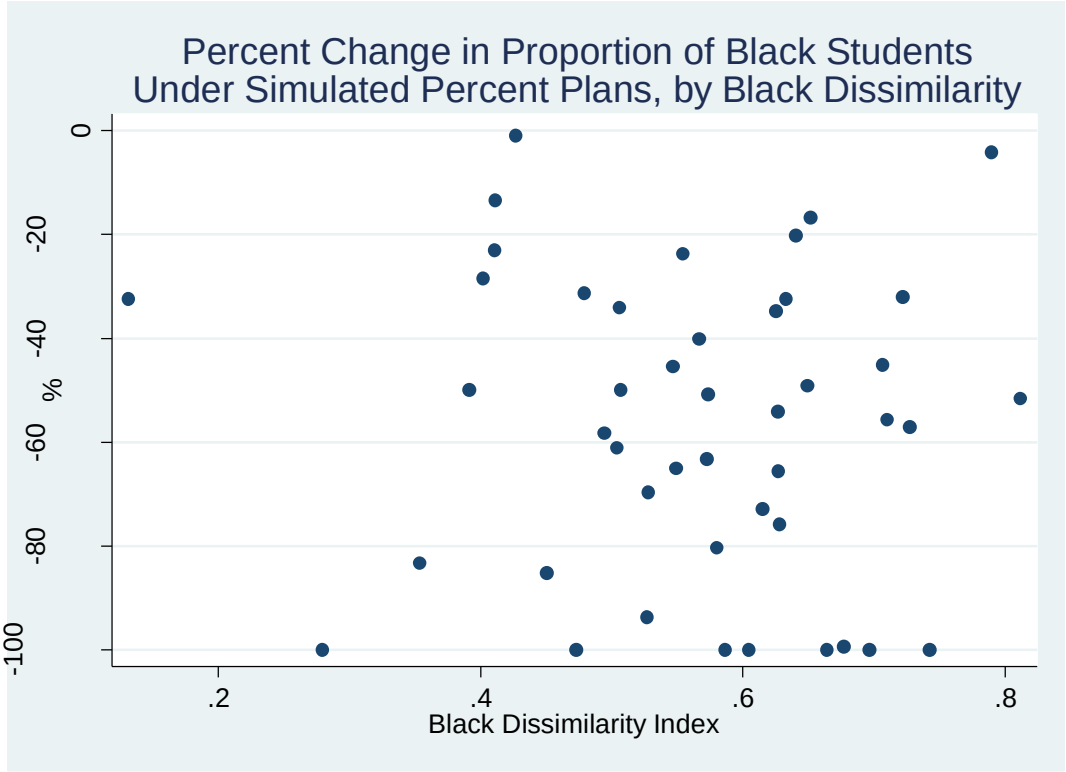
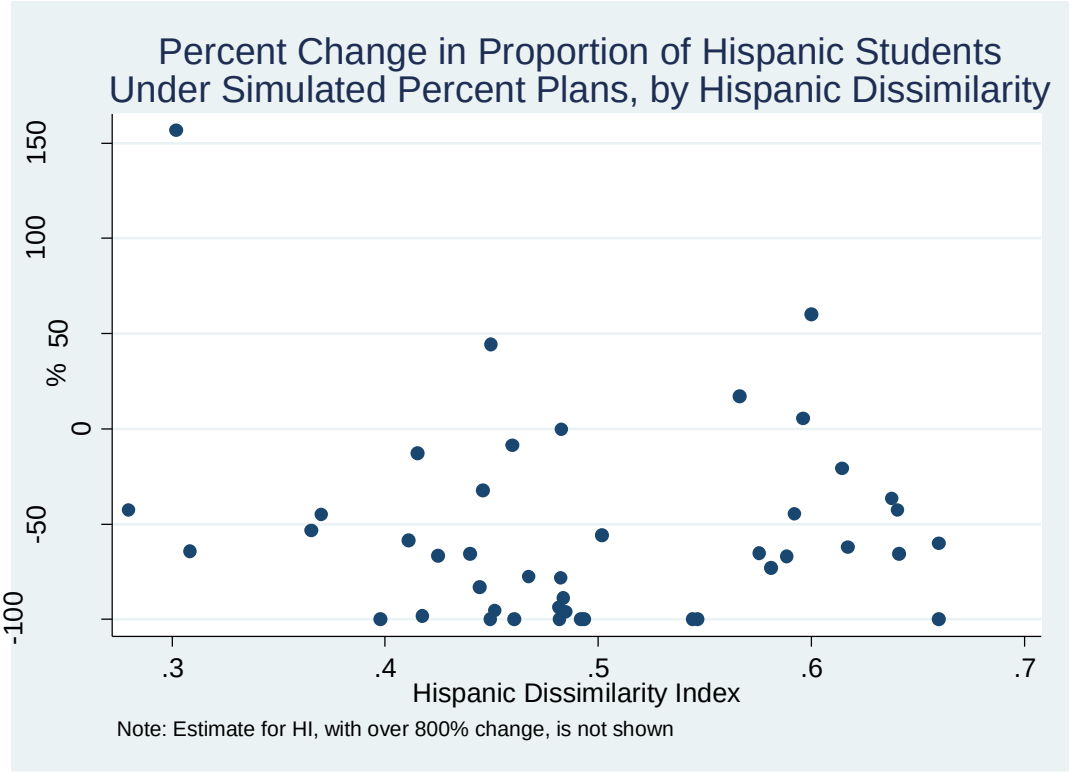

Percent Change in Proportion of Black Students
Under Simulated Percent Plans, by Black Dissimilarity
0
-20
-40
-60
-80
-100
%
.2
.4
.6
.8
Black Dissimilarity Index

Figure 2.


Percent Change in Proportion of Hispanic Students
Under Simulated Percent Plans, by Hispanic Dissimilarity
150
100
50
0
-50
-100
%
.3
.4
.5
.6
.7
Hispanic Dissimilarity Index
Note: Estimate for HI, with over 800% change, is not shown