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# The Effect of Court-Ordered Hiring Guidelines on Teacher Composition and Student Achievement

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## ABSTRACT

This paper examines the effect of court-ordered hiring guidelines intended to increase the share of black teachers employed in a school district in Louisiana. The researchers find that the court-ordered hiring policy significantly increased the share of teachers who are black in the district relative to the rest of the state, and to a matched synthetic control sample. The policy also increased the share of new teachers hired who are black, and decreased the student-teacher representation gap, defined as the difference in black enrollment share among students and teachers in a district. There were increases in the share of black teachers observed in both predominately white and predominately black schools in the district. The policy had no measurable impacts—either positive or negative—on district-level measures of student achievement.

## I. Introduction

The pivotal Supreme Court decision launching the modern civil rights movement—*Brown v. Board of Education of Topeka* (1954)—was an education case. Subsequent court rulings and federal initiatives aimed at desegregating schools have targeted a wide range of policies aimed at students, teachers, and school funding. An important literature has measured the causes and consequences of school desegregation, and particularly its impact on students (see, for example Ashenfelter et al., 2006; Coleman et al., 1975; Farley et al., 1980; Orfield, 2000; Rosenberg, 1991; Welch & Light, 1987; Guryan 2004; Reber 2005; Cascio et al. 2008; Jackson 2009; Cascio et al. 2010). Less research has focused on *teacher* sorting and outcomes, and measuring these effects has proven more challenging due to data limitations.

The Supreme Court has long held that faculty desegregation is an indispensable part of the school desegregation process (Harvard Law Review, 1991). In 1968 the Supreme Court ordered states to dismantle segregated school systems "root and branch" (*Green v. County School Board of New Kent County*, 1968), identifying five factors to be used to gauge a school system's compliance with the *Brown* mandate: facilities, staff, faculty, extracurricular activities, and transportation. In the 1970s, district judges in several cases found that school boards had engaged in racially discriminatory hiring practices and imposed permanent faculty quotas designed to create racial parity between the school system's faculty and student populations. In addition, when faculty reductions threatened to diminish the ranks of newly hired blacks, judges ordered race-based layoffs that overrode the seniority rights of teachers (examples include, *Arthur v. Nyquist*, 1981; *Morgan v. Kerrigan*, 1975; *Morgan v. O'Bryant*, 1982; *Oliver v. Kalamazoo Board of*

*Education*, 1980). Hiring and layoff orders remain in effect in school districts even today (e.g., *Morgan v. Burke*, 1991).

*Moore v. Tangipahoa Parish School Board* provides a modern case study for assessing the effect of a court-ordered affirmative action policy on teacher hiring and quality. Originally brought forth in 1965, the court made a number of desegregation orders at that time focused on student sorting. The case was effectively dormant until it was reopened in 2006. In 2010 the court issued a new desegregation plan that applied specialized teacher hiring criteria that gave extensive preference to black applicants. In summary, if a suitably qualified black applicant applied for a vacant teaching position, the principal was instructed to select that candidate even if the black applicant was not the most qualified candidate in the pool. If a black applicant was in the pool but not chosen, the principal would be required to submit written reasons for the choice to a district committee.

In this paper, we assess the impact of the 2010 court-ordered hiring reform. We find that the reform significantly increased the share of teachers who are black in the impacted district relative to the rest of the state, and also when compared to a matched synthetic control sample. The policy increased the share of new teachers hired who are black, and decreased the student-teacher representation gap—defined as the difference in enrollment share black among students and teachers in a district. We find increases in the share of black teachers observed in both predominately white and predominately black schools in the district. Turning to the impact on student outcomes, we find no measurable impacts—either positive or negative—on student achievement.

## II. Historical Background on Court-Ordered Desegregation of Tangipahoa Parish School District

Louisiana passed the first Jim Crow law in 1890 requiring separate accommodations for whites and blacks, and racial segregation permeated all areas of public life including the public-school system. While in 1896 the Supreme Court provided upheld Louisiana's "separate but equal" law (*Plessy v. Ferguson*), a half-century later, in a unanimous opinion the Supreme Court overturned *Plessy* and declared that separate schools are "inherently unequal" (*Brown v. Board of Education*, 1954). In *Brown v. Board of Education (II)* (1955), the Supreme Court ordered the lower federal courts to require desegregation "with all deliberate speed." Between 1955 and 1960, federal judges held more than 200 school desegregation hearings.

Forty miles northwest of New Orleans is Tangipahoa Parish, a county that stretches from Lake Pontchartrain to Mississippi's southern border. In 1965 a group of black students and their parents filed a lawsuit in the United States District Court for the Eastern District of Louisiana against the Tangipahoa Parish School Board for maintaining an unconstitutionally segregated "dual" school system (*Moore v. Tangipahoa Parish School Board*).[1] In June 1965 the court ruled for the plaintiffs and issued a desegregation order for the school system that relied solely on general mandates of non-discrimination and a freedom-of-choice plan that gave students the right to choose whether to attend predominately black schools or predominately white schools, regardless of the student's race and residence location. In 1967 the court issued a revised, more comprehensive

[1] We are greatly indebted to a case study published by the Cowen Institute for Public Education Initiatives at Tulane University for a historical outline of the *Moore* case (Cowen Institute, 2010).

desegregation order that consolidated the school system and reinforced the previous school-choice provisions.

Shortly after this revised desegregation order was issued, the Supreme Court ordered states to dismantle segregated school systems "root and branch," identifying five factors – facilities, staff, faculty, extracurricular activities, and transportation – to be used to gauge a school system's compliance with the *Brown* mandate (*Green v. County School Board of New Kent County*, 1968). Moreover, in this decision the Court found that New Kent County School Board's freedom-of-choice plan did not effect meaningful desegregation within the school district. In light of the *Green* decision, the plaintiffs in the *Moore* case filed a motion to amend the Tangipahoa Parish desegregation order. In July 1969, a new desegregation order was issued that consolidated the separate "black" and "white" schools into combined schools.[2] The new desegregation order also included general provisions prohibiting discrimination in transportation, facilities, extracurricular activities, and classroom assignments.

Following the 1969 consent order, several black teachers, coaches, band directors, and principals formerly employed by Tangipahoa parish sued the school board for engaging in "a policy and practice of coercing and intimidating Negro teachers in an effort to force Negro teachers to resign their positions." The court ultimately ordered these former faculty members to be reinstated and awarded back pay. As a result of this litigation, in 1975 the plaintiffs and the school board entered a consent agreement that

[2] The ruling laid out school-by-school plans for each of the 8 wards in the Parish, specifying which schools were to be closed and the new configuration of each school. For example, in one ward with five elementary schools, a different school was used to educate all district students in each grade from first through fifth grades. In another ward, two schools were combined with one serving all grade K-4 students and another serving all grade 5-12 students.

mandated that the school board achieve a 40:60 ratio of black to white high school principals, agricultural teachers, band directors, vocal music teachers, coaches, athletic directors, and central office administrators. The board agreed to fill any new vacant positions in these areas with black, qualified applicants until the 40:60 ratio was achieved. In addition, the board agreed to hire an "Equal Opportunity Compliance Officer," to act as a liaison between the school board and the court. In 1977 the court held the board in contempt for refusing to comply with the 1975 order.[3] Although the hiring provisions of the 1975 order were reiterated, no significant action was taken in the court to enforce the court orders against the school board.

## III. The 2010 Court-ordered Hiring Guidelines

The *Moore* case was effectively dormant until 2006 when a white applicant was hired to fill a football coaching vacancy. Shortly thereafter, the *Moore* plaintiffs, represented by NAACP attorneys, petitioned to reopen the desegregation case. In March 2010, the court issued a new desegregation plan extending specialized hiring criteria to include all teachers in the school system. The goal of the hiring policy is to reach a 40:60 black-to-white ratio for all teachers in the district, approximately mirroring the student racial composition.

The current order lays out specific guidelines for all teacher hiring in the district. In particular, when any teaching position becomes open in any school, the school district is required to send the names of qualified black applicants who have submitted

[3] In particular, since the 1975 order, the board had filled three coaching vacancies with white applicants even though the school system had failed to reach the 40:60 ratio for coaches. In addition, the board had neglected to hire a compliance officer as ordered.

employment applications to the school principal. The principal is instructed to choose from these applicants for the open position. If the principal does not choose one of the qualified black applicants, written reasons for the choice are submitted to a committee comprised of the Chief Desegregation Plan Implementation Officer, the Director of Personnel, and the Minority Recruitment Officer for review. The rejected applicant(s) are then interviewed by the Committee to determine whether the Committee should recommend the applicant(s) for employment to the Superintendent. Qualitative research we conducted with teachers hired during this period suggest that the Tangipahoa Parish School District does not have a strong centralized hiring process, but is driven primarily at the school level. For example, a majority of recently teachers heard about the job opening for which they were eventually hired by word of mouth rather than an official job posting. The hiring process often occurred quickly, with only a limited number of candidates being interviewed.

Figure 1 shows over time the fraction of black elementary and secondary teachers in the district both among the stock of all teachers, and among newly hired teachers. The vertical line in the year 2006 denotes the first teacher hiring period after the petition was filed to reopen the *Moore* case, and the line in 2010 denotes the first teacher hiring period after the court-order. The black teacher hiring share was trending upward in the decade prior to the re-opening of *Moore*, from 13.9 percent in 1998 to 24.5 percent in 2006. The share climbed to 41.4 percent the first year the new hiring criteria are in place, and although fraction of black new hires dropped after 2010, it is noteworthy that the school district hired more black teachers, in raw numbers, in 2012 and 2014 than any other years

in the time period.[4] The overall black teacher employment share was slightly decreasing before the re-opening of *Moore*, even as the new teacher hiring share was increasing. The share of black teachers rose from 15.9 percent after the *Moore* case was reopened, to 19.5 percent after the introduction of the court-ordered hiring criteria, and continuing to climb to 22.4 percent by the end of the sample period. Over the same time period, the fraction of black students in the district was slowly drifting up from 45 percent to 48 percent (see appendix Figure 1.)

## IV. Analytical Framework

In this study, we address the following questions: (1) Did the court-ordered hiring policy increase the share of African American teachers hired in the district? (2) Did the hiring policy increase the overall employment share of African American teachers in the district? (3) Did the hiring policy decrease the student-teacher representation gap, which is defined as the difference between the share of black students and black teachers in the district? (4) Did the hiring policy change student achievement?

To disentangle the impact of the court-ordered hiring policy from preexisting trends and other potential confounding factors, we employ a difference-in-differences (DD) approach, comparing trends in the treated district to a control group made up of other public school districts in Louisiana. We augment this approach with a synthetic control group design, and propensity score models.

[4] Between 2010 and 2014, several schools in the district transitioned to magnet schools, resulting in an increase in teacher turnover and new teacher hires.

Our primary DD estimation strategy uses all school districts in Louisiana as a control group, using the following ordinary least squares (OLS) regression model as a baseline specification:

(1) $Y_{it} = \beta_0 + \beta_1(ORDER_{it}) + \beta_2 X_{it} + \mu_i + \delta_t + \varepsilon_{it}$

where $Y_{it}$ is the outcome variable of interest (e.g. the fraction of new teacher hires that are black, or share of students scoring higher than a basic achievement level in a particular subject) for district $i$ in year $t$. $ORDER_{it}$ is a binary variable equal to one when the court-ordered hiring policy is in effect—that is, in Tangipahoa Parish Schools starting in the year 2010. $X_{it}$ is a vector of time varying district characteristics, including student enrollment, number of schools, and Census locale classification. The model includes district fixed effects ($\mu_i$), year fixed effects ($\delta_t$), and the usual error term $\varepsilon_{it}$. In some models, we augment the specification with linear time trends that are allowed to differ in Tangipahoa Parish School District, to account for potentially different pre-treatment trends in the treated district.

Tangipahoa Parish School District may have preemptively responded to the litigation by increasing black employment share when the case was filed but prior to the final court order, confounding the direct effect of the court order with the effect of the threat of the order. To address this empirically, as a robustness check we replace $ORDER_{it}$, which coincides with the court-ordered hiring guidelines that took effect in 2010, with $CASE_{it}$, a variable that instead times the treatment with the 2006 filing of the petition to reopen the *Moore* case.

To address remaining concerns about potential confounding influences of prior trends, we adopt two additional approaches. First, we create a "synthetic control group"

(Abadie, Diamond, & Hainmueller, 2010) comprising a weighted average of the available control units (i.e., other Louisiana school districts), with weights chosen so that the resulting "synthetic Tangipahoa" best reproduces the values of the dependent variables in the Tangipahoa Parish School District prior to the implementation of the court-ordered hiring criteria. Due to data limitations, the synthetic control group approach is limited to the hiring and representation gap outcomes, but cannot be extended to student achievement data because there are insufficient pre-treatment observations.

Second, we employ propensity score matching to adjust for pre-treatment observable differences between Tangipahoa Parish School District and the untreated school districts. To create the propensity scores, we estimate the following logistic regression for each outcome variable of interest, and use it to predict propensity scores:

$$(2) \quad TS_{it} = \beta_0 + \beta_1 Y_{1998i} + \beta_2 Y_{2000i} + \beta_3 Y_{2002i} + \beta_4 Y_{2004i} + \beta_5 Y_{2006i} + \beta_6 Y_{2008i} + \varepsilon_{it}$$

where $TS_{it}$ is a binary variable equal to one if the district is Tangipahoa Parish Schools and zero otherwise and $Y_i$ is the outcome variable for district $i$ in the denoted pre-treatment year. Using the resulting predicted propensity scores, we then select the districts that had a propensity score closest to Tangipahoa Parish's propensity score and estimate the same difference-in-differences models described above on the propensity-matched samples.

## V. Data

A primary challenge to evaluating a court-ordered hiring plan designed to increase the share of black teachers in a school district is that data on the racial

composition of school teachers generally is not publicly available. However, the Equal Employment Opportunity Commission (EEOC) collects teacher demographic data from every school district in the United States on a biennial basis through their EEO-5 form, which all school districts are legally required to submit. The EEO-5 form includes race-ethnicity data for all full-time teachers and new full-time teacher hires in the school district. The EEOC provided access to these district-level confidential data for all Louisiana school districts from 1998 through 2014.

To supplement the EEO-5 data, we use enrollment counts and student race and ethnicity characteristics at the district level over the same time period from the National Center for Education Statistics' Common Core of Data (CCD). We also use school-level teacher demographic data from 2007 through 2014 provided by the Tangipahoa Parish School District.

Data on district-level standardized test performance is publicly available through the Louisiana Department of Education (2007-2014), including End-of-Course exams (Algebra I and English II) and the state's standardized achievement exam results for tested subjects including Math, ELA, Science, and Social Studies.[5] The data include the percent of students scoring in each proficiency category (advanced, mastery, basic, approaching basic, and unsatisfactory), by subject, by grade, for every school district in the state. To be promoted to the next grade, students in grades four and eight must receive a score of "basic" or above on either the ELA or math LEAP test.

[5] Students in grades three, five, six, and seven are assessed using the Integrated Louisiana Educational Assessment Program (iLEAP), while students in grades four and eight are assessed using the Louisiana Educational Assessment Program (LEAP). Both the iLEAP and LEAP are comprised of sections covering English Language Arts, Mathematics, Science, and Social Studies.

Summary statistics can be found in Table 1. Prior to the court-ordered hiring reform, the Tangipahoa district hired a lower fraction of black teachers than did the rest of Louisiana's districts (19.8 percent vs. 24.1 percent), and their teacher workforce had fewer blacks (17.1 percent vs. 23.2 percent), as shown in Panel A. After the reform, Tangipahoa's new hires were substantially more likely to be black than those in the rest of the state (32.2 percent vs. 21.7 percent), and the difference in the share of the teaching workforce that is black declined to 2 percentage points. In the pre-reform period, Tangipahoa's students were 45.4 percent black—a rate nearly identical to the rest of the state (see Panel B). In the post-reform period, the share of Tangipahoa's students who are black increased to 48.0 percent, 2.3 percent higher than the average of the rest of the state's districts. The representation gap (the difference between the share of black students and black teachers) hovered around 28 percent in Tangipahoa, but increased from 22 to 24 percent in the rest of the state. As shown in Panel C, the average standardized test passing rates ranged from 55 to 70 percent, and the end-of-course passing rates ranged from 59 to 92 percent. Average passing rates were lower in Tangipahoa than in the rest of the state both before and after the hiring reform.

## VI. Impacts on the Composition of the Teacher Workforce

This section estimates the impacts of the court-ordered hiring reforms on the flows of new teacher hires that are black, the overall teacher employment share that is black, and the difference between the share of black students in the student body and the teaching force. Section A starts with difference-in-differences estimates, then the

subsequent section applies a synthetic control group approach, and section C concludes with additional robustness checks.

*A. Difference-in-differences estimates*

Table 2 presents difference-in-differences estimates of the effect of the court-ordered hiring reform on the employment of black teachers in Tangipahoa. The first two columns estimate the impact on black hiring share, calculated as the number of full-time black elementary and secondary teachers hired by a district in a given year divided by the total number of full-time elementary and secondary teachers of any race or ethnic group hired by the district in that year. Column (1) does not control for differential trends over time by district, and finds that the black hiring share increases by 15.6 percentage points for new teachers. Since pre-reform trends in new teacher hiring appear to be important in Figure 1, in column (2) we add separate linear trends for Tangipahoa and the control districts. This model is our preferred specification, and yields a smaller and not statistically significant estimate of a 7.3 percentage point increase in black new teacher hiring share.

Ultimately, since the court has ordered the district to achieve a 40:60 black-white ratio for all teachers in the district, it is also important to measure the racial diversity in the stock of the teaching force directly. Columns (3) and (4) consider the overall black teacher employment share, defined as the number of full-time black elementary and secondary teachers employed by the district in a given year divided by the number of full-time elementary and secondary teachers employed by the district in that year of any race or ethnicity. After the court-ordered reforms, the black share of employment rose by approximately 6 percentage points. The point estimates are larger for high-school

teachers than elementary school teachers, though we cannot statistically reject that the impacts are the same for teachers of older and younger students (results not shown).

The court's reasoning to impose a goal of 40:60 black-white teacher representation was to align the share of teachers who are black in the district with the share of students who are black in the district. Columns (5) and (6) estimate the impact of the court-ordered reforms on the student-teacher representation gap, defined as the percent of black students in the district minus the percent of black teachers in the district. The policy reduced the representation gap by between 3 and 4 percentage points—somewhat smaller than the increase in the black teacher employment share because the share of black students in the district was also increasing over this time period.

### *B. Synthetic cohort estimates*

A fundamental concern with inferences from a DD approach is the validity of the control group—that is, does the comparison group provide a valid counterfactual for what would have happened to the racial composition of the teaching force had the court-ordered hiring policy not been implemented? To construct an alternate synthetic control group, we take a weighted average of the available control units (i.e., Louisiana school districts), with weights chosen so that the resulting "synthetic Tangipahoa" best reproduces the values of the dependent variables in the Tangipahoa Parish School District prior to the implementation of the court-ordered hiring criteria. Results are shown in Figure 2. Panel A illustrates the trends in the share of new teacher hires who are black. Tangipahoa and the synthetic control districts track each other closely from 1998 through 2004, with both groups showing an upward trend in the share of new hires that are black.

After the *Moore* case was reopened in 2006, hiring trends diverge with the share black continuing to increase in Tangipahoa Parish, and a leveling off in the synthetic control district. After the 2010 court order, the gaps persist with Tangipahoa hiring a substantially higher share of new black teachers than would have been predicted in the absence of the reforms.

Panel B repeats the exercise with the black share of total teacher employment. The black share of total employment is slowly trending down prior to 2006, at which points the trends diverge and Tangipahoa employs a larger share of black teachers than predicted by the synthetic control group. Panel C shows the representation gap. Prior to the reform the gap was drifting upward, with the share of black students between 26 and 30 percentage points higher than the share of black teachers. After the reform, Tangipahoa's representation gap started to trend down, in contrast to the synthetic control group. Appendix Figure 3 presents results from a series of placebo tests that apply the synthetic control method used to estimate the effect of the court-ordered hiring criteria on Tangipahoa Parish to every other district in the donor pool (Galiani & Quistorff, 2016). This procedure produces the distribution of estimated effects for the districts where no intervention took place, and allows the estimation of statistical significance.

According to the synthetic control method, the court-ordered hiring criteria had an average effect in the post-intervention era of increasing the black teacher employment share in Tangipahoa Parish by 4.7 percent in comparison to synthetic Tangipahoa, with an equivalent p-value of 0.09. The effect on new teacher hiring share under this method of 18.8 percent, however the equivalent p-value of 0.26 indicates the impact on new teacher hiring is not statistically significant. The representation gap decreased by a

2.3 percentage points with an equivalent p-value of 0.09. Together, the results from the synthetic control group approach are highly consistent with the difference-in-differences approach in terms of magnitude and statistical significance, suggesting that the court-ordered hiring criteria had an impact on the employment of black teachers.

### *C. Additional robustness checks*

We take two additional approaches to robustness checks. The first, shown in Appendix Table 1, conducts a difference-in-differences approach on a control group formed using propensity score matched samples. The table shows results using the 10 and 15 nearest neighbors in the odd and even columns, respectively.[6] Results are qualitatively similar to those already reported, though less precisely estimated.

Appendix Table 2 presents difference-in-differences results, similar to those in Table 2, but replacing the timing of the policy change with the date that the case was reopened (2006) instead of the date it was decided (2010). Again, the results are qualitatively similar but less precise, indicating an increase in the share of black teachers among new hires and employment share, and a decrease in the representation gap.

## VII. Impacts on Student Achievement

Although the interest of the court is to stop racial discrimination against black teachers and improve the black teacher employment share, a complete analysis of the impact of the ruling must consider potential impacts on student achievement. Evidence from previous studies indicates that the race of a teacher can impact the achievement of

[6] Results for 5 nearest neighbors are qualitatively similar and are available upon request.

their students, and that outcomes for black students improve when they have black teachers (Dee, 2004; Egalite et al., 2015; Gershenson et al. 2017).

To measure the impacts of the court-ordered hiring change on achievement, we investigate passing rates on state-wide tests. Note that the student achievement data cover a shorter time period (2007-2014) than do the teacher employment data (1998-2014), though the sample sizes are similar because the achievement data are reported annually while the teacher employment data are reported every other year.

Table 3 presents the DD results. Passing rates for elementary school students on the state standardized tests in math, ELA, science, and social studies range from 55 percent to 61 percent in Tangipahoa prior to the court-ordered reforms. Columns (1) through (4) indicate a small, statistically indistinguishable from zero impact on these passing rates. Columns (5) and (6) estimate the impact of the reforms on high school students' passing rates on end-of-course exams in Algebra I and English II. These results suggest that, although the court-ordered hiring policy did influence the composition of the teacher workforce, it did not measurably help nor harm student achievement in the five years after the reform was adopted.

## VIII. Understanding the Change in Teacher Employment

The court-ordered hiring reforms in the Tangipahoa Parish School District took the form of a "hard" affirmative action policy—that is, within the candidate pool for a given job, schools were required to use different hiring criteria based on race. As shown above, this court order resulted in an increase in the share of the teaching force in the district that is black. However, would a so-called "soft" affirmative action policy—that

is, a required change to the composition of the candidate pool—have had a different impact? In particular, in the context of hiring professional football coaches it has been shown that requiring teams to interview at least one minority candidate increases the share of black coaches (Dubois, 2016). Would such a "soft" affirmative action approach be more effective in the context of increasing the representation of black teachers than the "hard" affirmative action approach taken by the court?

A necessary condition for a "hard" affirmative action policy to be effective is that there must be qualified black teachers who apply to open teacher positions in the district. If there are no black applicants in the pool, however, the remedy ordered by the court in this case is not activated. While we were unable to obtain systematic data on the number or race of applicants, in order to address this question, we undertook a series of qualitative interviews with teachers in the district to better understand the hiring process. Teachers described a decentralized, accelerated, and insular hiring process in the district. For example, when asked how they became aware of the job opening, 81 percent of the teachers interviewed reported "word of mouth" or that they were contacted directly by the school without any contact with the district. This might raise concerns that some schools could attempt to "game" the court-order if they wanted to increase the probability of a white applicant being hired. For example, potential black applicants could be less likely than potential white applicants to hear about job openings through word of mouth, potentially due to differences in networks. A centralized job posting system would potentially alleviate such concerns.

Another feature of the court ruling is that the guidelines will be lifted when the district as a whole reaches a 40:60 black-to-white teacher employment ratio, but the

incentives for individual schools to increase their black teacher employment share are less strong. We investigated whether schools that already had a high share of black teachers or of black students were differentially responsive to the court-ordered reforms. We were able to obtain school-level teacher demographic data from the district, as reported in Table 4. Panel A breaks the sample by whether more than 40 percent of the school's teachers are black in the pre-reform period (2007-09). Prior to the reform, schools with a high share of black teachers ("unitary" schools) had on average 54 percent black teachers, while those with a low share ("non-unitary" schools) had 13 percent. After the reform, non-unitary schools saw an increase in their black share to 18 percent. Difference-in-differences estimates of the relative changes between unitary and non-unitary schools after the reform (column 7) indicate that the difference in their rates of black teachers narrowed by 8.5 percentage points. Panel B repeats the exercise, this time with unitary schools defined by the share of black student enrollment. While schools with a high share of black students employ a higher share of black teachers both before and after the reform, the difference narrowed by 6.4 percentage points after the court order. Note that these results are not driven by black teachers transferring across schools in the district. These results suggest that, even with a decentralized hiring system that provides little incentive for individual schools to advertise to and hire black teachers, the court-ordered hiring policy significantly increased black teacher employment share at predominately white schools.

Although the "hard" affirmative action policy resulted in a number of desired outcomes, did it change the way teachers perceive teacher quality in the district? "Hard" affirmative action policies tend to be less popular than "soft" affirmative action policies.

Survey data in the United States suggest that whites are much more sympathetic to special recruiting and training efforts targeted toward minorities (i.e., "soft" affirmative action) than to "preferential treatment" in hiring and promotion (i.e., "hard" affirmative action) (Lipset and Schneider, 1978; Kleugel and Smith, 1986; Kinder and Sanders, 1990; Holzer and Neumark, 2000). When asked specifically about the impact of the affirmative action policy on the school district, 61.5 percent of the teachers interviewed thought it had a negative impact, 11.5 percent thought it had a mixed impact, and only 7.7 percent thought it had no impact or a positive impact. Almost one-fifth of teachers interviewed reported that they were unaware of the policy.

However, this generally negative perception of the affirmative action policy did not translate to how teachers perceived new hires at their school or the quality of teachers in their department. When asked to describe the quality of new hires, 46.2 percent gave a completely positive review, while 46.2 percent thought new hires exhibited mixed quality. Nearly 60 percent of teachers described the quality of teachers in their department as increasing, while just over a quarter described the quality of teachers as decreasing. A common refrain regarding teacher quality—regardless of race—was articulated by a Tangipahoa Parish teacher during our interview: "With every school you've got some standout [teachers] that absolutely everybody knows, and then you've got some that are horrific and everybody knows, and then you've got the rest of 'em in the middle."

## IX. Conclusions

A long history of racial segregation in American schools has resulted in a number of court-ordered desegregation policies that relate to both students and teachers. However, primarily due to data limitations, student, rather than teacher, outcomes have been more thoroughly analyzed. *Moore v. Tangipahoa Parish School Board* provides a modern case study for assessing the effect of a court-ordered affirmative action policy on teacher hiring and student achievement. Tangipahoa Parish is not particularly unusual in the state. When *Moore* was reopened in 2006, 46 percent of Louisiana school districts had a smaller black teacher employment share than Tangipahoa Parish and 24 percent had a larger student-teacher representation gap.

We find that the court-ordered hiring policy increased the black teacher employment share in the Tangipahoa Parish School District by between 2.0 to 5.6 percentage points in the half-decade after its enactment. It also decreased the student-teacher representation gap in the district by between 2.3 to 4.0 percentage points. Increases in black teacher employment share in primarily white schools were significantly greater than in schools with a high prior share black teachers or students, even though all schools regardless of their racial composition are subject to the court-ordered hiring criteria.

Although the court-ordered hiring policy changed the composition of teachers in the district, it had no significant effect on student achievement at the district level as measured by a number of state standardized examinations. Qualitative evidence from surveys of teachers indicate that while many teachers have a negative view of the court-

ordered hiring policy, nonetheless they do not think that the quality of newly hired teachers has diminished.

There is great interest in diversifying the teacher workforce in the United States (Hansen and Quintero, 2017), with considerable attention on improving the diversity of the pipeline for new teachers (Boser 2011; Lindsay et al. 2017). This study finds a potentially important role for changes to hiring policies to help increase the share of minority teachers employed. Further research into the potential impacts of “soft” vs. “hard” affirmative action policies to diversify the teacher workforce is needed.

## References


Abadie, Alberto, Alexis Diamond, and Jens Hainmueller. "Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program." *Journal of the American Statistical Association* 105 (2010): 493-505.

*Arthur v. Nyquist*, 514 F.Supp. 1133 (1981).

Ashenfelter, Orley, William J. Collins, and Albert Yoon. "Evaluating the Role of *Brown v. Board of Education* in School Equalization, Desegregation, and the Income of African Americans." *American Law and Economics Review* 8 (2006): 213– 248.

Boser, Ulrich. "Teacher Diversity Matters: A State-by-State Analysis of Teachers of Color" Center for American Progress, Washington, DC. (2011).

*Brown v. Board of Education of Topeka*, 347 U.S. 483 (1954).

*Brown v. Board of Education of Topeka*, 349 U.S. 294 (1955).

Cascio, Elizabeth U., Nora E. Gordon, Ethan Lewis, and Sarah J. Reber. "From Brown to Busing," *Journal of Urban Economics* 64 (2008): 296-325.

Cascio, Elizabeth U., Nora E. Gordon, Ethan Lewis, and Sarah J. Reber. "Paying for Progress: Conditional Grants and the Desegregation of Southern Schools." *Quarterly Journal of Economics* 125 (2010): 445-482.

Coleman, James, Sara Kelly, J. Moore. "Trends in School Segregation 1968–73." The Urban Institute, Washington, DC. (1975).

Cowen Institute for Public Education Initiatives. "Louisiana Desegregation Case Studies: East Baton Rouge, West Carroll, and Tangipahoa." Last modified August 2010. http://www.coweninstitute.com/wp-content/uploads/2010/08/Louisiana-Desegregation-Case-Studies.pdf

Dee, Thomas. "Teachers, Race, and Student Achievement in a Randomized Experiment." *The Review of Economics and Statistics* 86 (2004): 195-210.

DuBois, Cynthia. "The Impact of 'Soft' Affirmative Action Policies on Minority Hiring in Executive Leadership: The Case of the NFL's Rooney Rule." *American Law and Economics Review* 18 (2016): 208-233.

Egalite, Anna J., Brian Kisida, Marcus A. Winters. "Representation in the Classroom: The Effect of Own-Race Teachers on Student Achievement." *Economics of Education Review* 45 (2015): 44-52.

Farley, Reynolds, T. Richards, and C. Wurdock. “School Desegregation and White Flight: An Investigation of Competing Models and Their Discrepant Findings.” *Sociology of Education* 53 (1980): 123–139.

Galiani, Sebastian, and Brian Quistorff. “The synth_runner Package: Utilities to Automate Synthetic Control Estimation Using synth,” http://econweb.umd.edu/~galiani/files/synth_runner.pdf (2016).

Gershenson, Seth, Cassandra M.D. Hart, Constance A. Lindsay, and Nicholas W. Papageorge. “The Long-Run Impacts of Same-Race Teachers,” IZA the Institute of Labor Economics Discussion Paper Series #10630, March (2017).

*Green v. County School Board of New Kent County*, 391 U.S. 430 (1968).

Guryan, Jonathan. “Desegregation and Black Dropout Rates.” *The American Economic Review* 94 (2004): 919-943.

Hansen, Michael, Diana Quintero. "4 Ways to Measure Diversity Among Public School Teachers.” *Brown Center Chalkboard*. The Brookings Institute, Washington, DC. (2017).

Harvard Law Review. “Race-Based Faculty Hiring and Layoff Remedies in School Desegregation Cases.” *Harvard Law Review Association,* vol. 104, no. 8, 1991, pp. 1917 – 1936.

Holzer, Harry J., and David Neumark. “What Does Affirmative Action Do?” *ILR Review* 53 (2000): 240-271.

Jackson, C. Kirabo. “Student Demographics, Teacher Sorting, and Teacher Quality: Evidence from the End of School Desegregation.” *Journal of Labor Economics* 29 (2009): 213-256.

Kinder, Donald R., and Sanders Lynn M. “Mimicking Political Debate with Survey Questions: The Case of White Opinion on Affirmative Action for Blacks.” *Social Cognition* 8 (1990): 73–103.

Kluegel, James R., and Smith Eliot R. *Beliefs about Inequality: Americans' Views of What Is and What Ought to Be*. New York: Aldine De Gruyter, 1986.

Lindsay, Constance A., Erica Blom, Alexandra Tilsley. “Diversifying the Classroom: Examining the Teacher Pipeline.” The Urban Institute, Washington, DC. (2017).

Lipset, Seymour Martin, and Schneider William. “The Bakke Case: How Would It Be Decided at the Bar of Public Opinion?” *Public Opinion*, March-April (1978): 38-48.

*Moore v. Tangipahoa Parish School Board*, 594 F.2d 489, 491 (5th Cir. La. 1979).

*Morgan v. Burke,* 926 F. 2d 86 (1991).

*Morgan v. Kerrigan*, 401 F. Supp. 216 (1975).

*Morgan v. O'Bryant,* 671 F. 2d 23 (1982).

Orfield, Gary. "The 1964 Civil Rights Act and American Education." In: Groffman, B. (Ed.), *Legacies of the 1964 Civil Rights*. Univ. of Virginia Press, Charlottesville and London, (2000) 89–128.

*Oliver v. Kalamazoo Board of Education,* 640 F. 2d 782 (1980).

*Plessy v. Fegurson*, 163 U.S. 537 (1896).

Reber, Sarah J. "Court-Ordered Desegregation: Successes and Failures Integrating American Schools since Brown versus Board of Education." *The Journal of Human Resources* 40 (2005): 559-590.

Rosenberg, Gerald N. *The Hollow Hope: Can Courts Bring About Social Change?* University of Chicago Press, Chicago, IL (1991).

Welch, Finis., and Audrey Light. *New Evidence on School Desegregation*. US Commission on Civil Rights, Washington, DC. (1987).

**Figure 1.**
Black Teacher Hiring Share and Black Teacher Employment Share in Tangipahoa School District Over Time

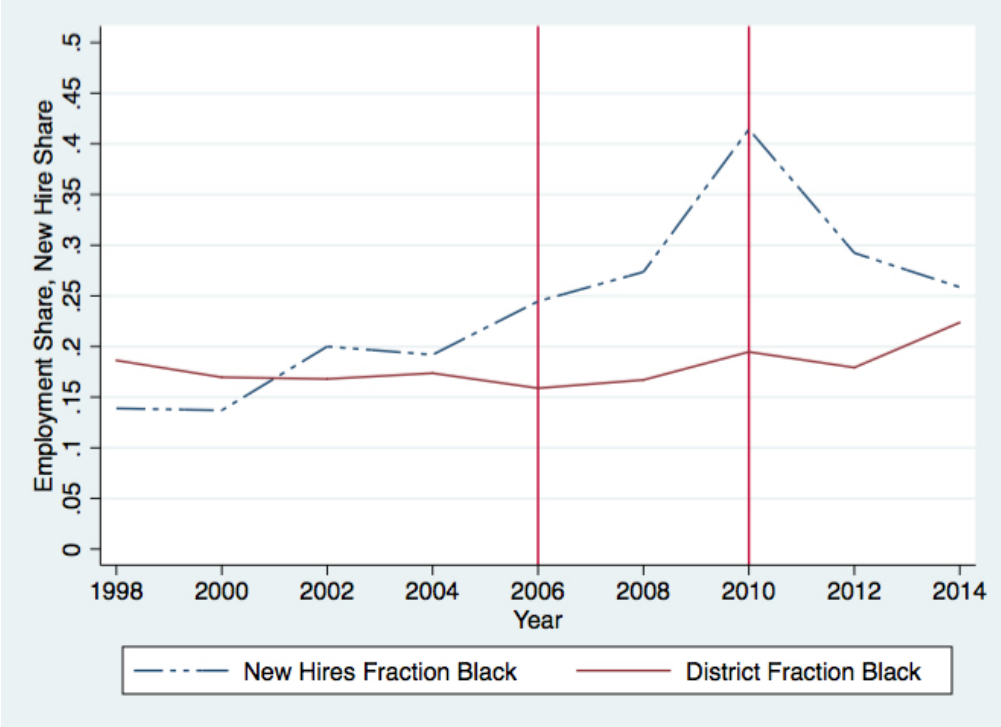
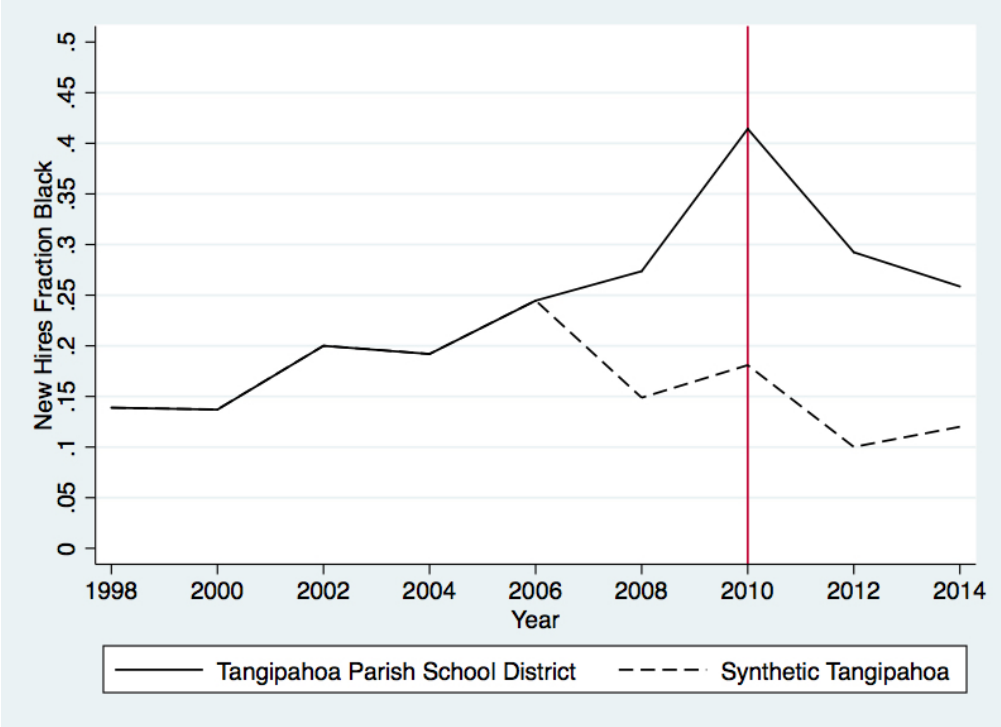
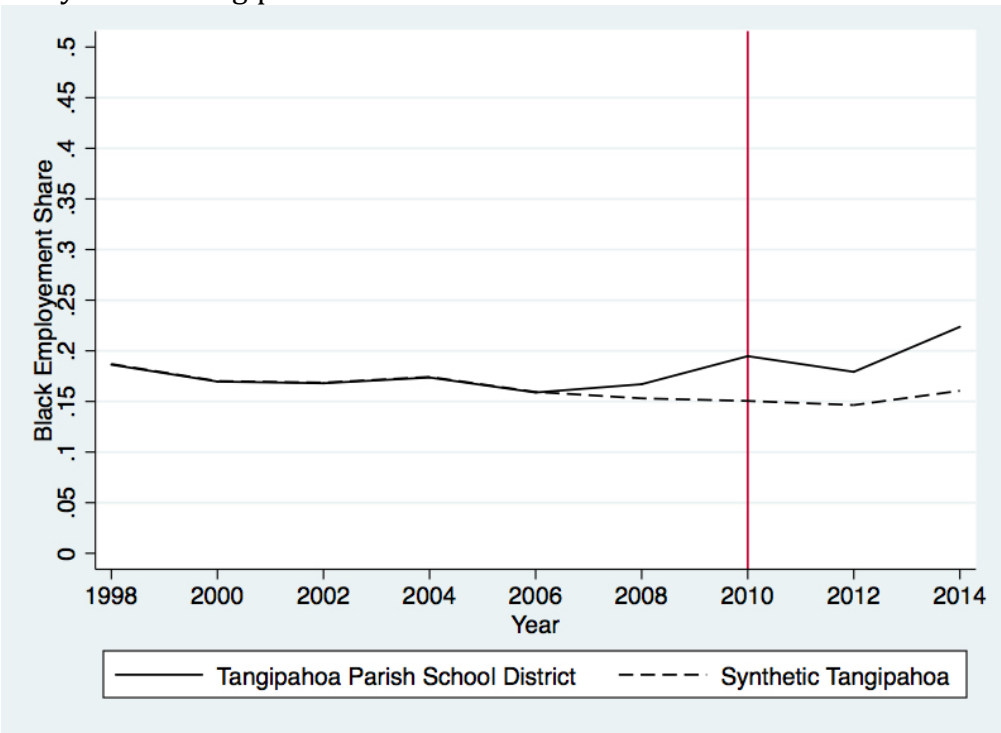



**Figure 2. Teacher Employment: Synthetic Control Comparison**
A. Black Elementary and Secondary Teacher Hiring Share, Tangipahoa Parish School District vs. Synthetic Tangipahoa



B. Black Elementary and Secondary Teacher Employment Share, Tangipahoa Parish vs. Synthetic Tangipahoa




C. Student-Teacher Representation Gap, Tangipahoa Parish School District vs. Synthetic Tangipahoa

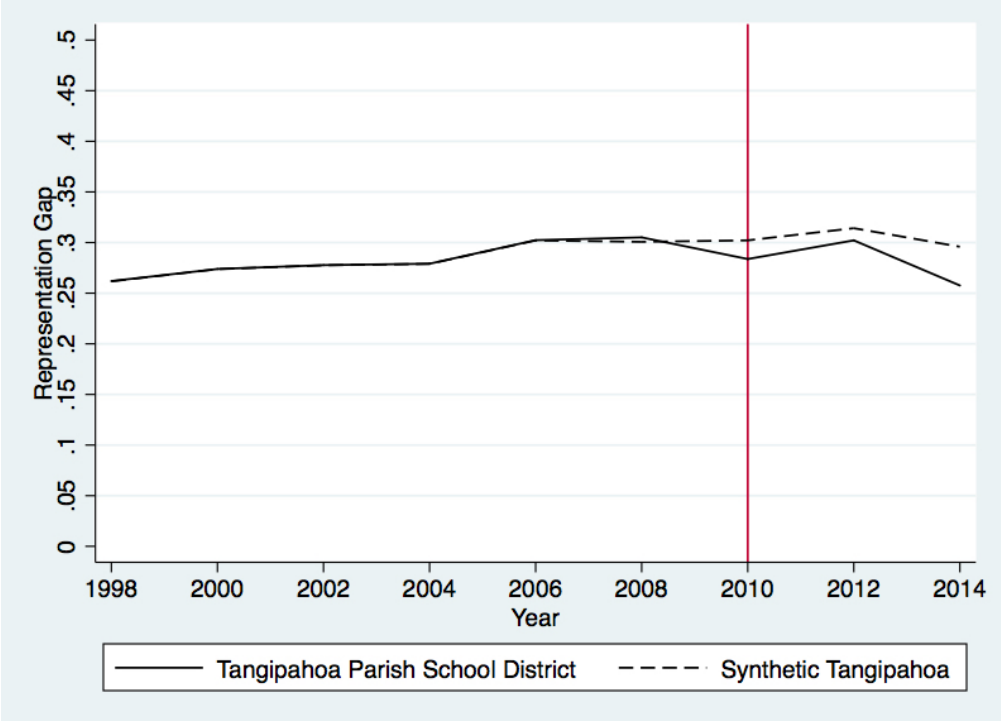


**Table 1. Summary Statistics**

| | Tangipahoa Parish School District | Other Louisiana School Districts | Difference | Tangipahoa Parish School District | Other Louisiana School Districts | Difference |
|---|---|---|---|---|---|---|
| | | A. Teacher Demographics | | | | |
| Sample Period | | 1998-2008 | | | 2010-2014 | |
| New Hires | 0.198 | 0.241 | -0.044 | 0.322 | 0.217 | 0.105 |
| Percent Black | [0.055] | [0.191] | (0.078) | [0.082] | [0.179] | (0.104) |
| | (n=6) | (n=297) | | (n=3) | (n=150) | |
| Total Percent | 0.171 | 0.232 | -0.062 | 0.199 | 0.220 | -0.020 |
| Black | [0.009] | [0.200] | (0.082) | [0.023] | [0.190] | (0.110) |
| | (n=6) | (n=314) | | (n=3) | (n=157) | |
| Percent Black | 0.170 | 0.230 | -0.060 | 0.201 | 0.214 | -0.013 |
| Elementary | [0.011] | [0.197] | (0.081) | [0.023] | [0.185] | (0.107) |
| | (n=6) | (n=314) | | (n=3) | (n=157) | |
| Percent Black | 0.172 | 0.235 | -0.062 | 0.195 | 0.226 | -0.030 |
| Secondary | [0.024] | [0.213] | (0.087) | [0.031] | [0.203] | (0.118) |
| | (n=6) | (n=314) | | (n=3) | (n=157) | |
| | | B. Student Demographics | | | | |
| Sample Period | | 1998-2008 | | | 2010-2014 | |
| Total Percent | 0.454 | 0.451 | 0.003 | 0.480 | 0.457 | 0.023 |
| Black | [0.011] | [0.215] | (0.088) | [0.002] | [0.225] | (0.130) |
| | (n=6) | (n=315) | | (n=3) | (n=157) | |
| Representation | 0.283 | 0.219 | 0.065 | 0.281 | 0.237 | 0.044 |
| Gap | [0.017] | [0.093] | (0.038) | [0.022] | [0.105] | (0.061) |
| | (n=6) | (n=314) | | (n=3) | (n=157) | |
| | | C. Student Achievement | | | | |
| Sample Period | | 2007-2009 | | | 2010-2014 | |
| Percent | 0.590 | 0.672 | -0.082 | 0.752 | 0.807 | -0.055 |
| Passing | [0.075] | [0.129] | (0.075) | [0.024] | [0.095] | (0.043) |
| Algebra I EOC | (n=3) | (n=202) | | (n=5) | (n=340) | |
| Sample Period | | 2008-2009 | | | 2010-2014 | |
| Percent | 0.715 | 0.789 | -0.074 | 0.882 | 0.915 | -0.033 |
| Passing | [0.078] | [0.111] | (0.079) | [0.023] | [0.055] | (0.025) |
| English II EOC | (n=2) | (n=134) | | (n=5) | (n=340) | |
| Sample Period | | 2007-2009 | | | 2010-2013 | |
| Percent | 0.571 | 0.634 | -0.063 | 0.592 | 0.685 | -0.094 |
| Passing | [0.030] | [0.105] | (0.061) | [0.025] | [0.093] | (0.047) |
| Standardized | (n=3) | (n=203) | | (n=4) | (n=245) | |
| Mathematics | | | | | | |
| Percent | 0.609 | 0.650 | -0.040 | 0.633 | 0.693 | -0.060 |
| Passing | [0.013] | [0.101] | (0.058) | [0.010] | [0.094] | (0.047) |
| Standardized | (n=3) | (n=203) | | (n=4) | (n=245) | |
| ELA | | | | | | |
| Percent | 0.552 | 0.586 | -0.035 | 0.585 | 0.640 | -0.054 |
| Passing | [0.028] | [0.120] | (0.069) | [0.008] | [0.112] | (0.056) |
| Standardized | (n=3) | (n=203) | | (n=4) | (n=245) | |
| Science | | | | | | |
| Percent | 0.604 | 0.627 | -0.023 | 0.609 | 0.661 | -0.051 |
| Passing | [0.022] | [0.110] | (0.064) | [0.016] | [0.106] | (0.053) |
| Standardized | (n=3) | (n=203) | | (n=4) | (n=245) | |
| Social Studies | | | | | | |

Notes: N's represent the number of district-year observations in each cell. Standard deviations in brackets; standard errors in parentheses. Sample Period "1998-2008" ends in 2008, rather than 2009, due to the fact that the EEO-5 survey is administered only in even years.

**Table 2. Difference in Differences Analysis of Teacher Employment Effects**

| | Black New Teacher Hire Share | | Black Teacher Employment Share | | Representation Gap | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Court order imposed | 0.156** | 0.073 | 0.063*** | 0.056** | -0.034** | -0.040* |
| | (0.006) | (0.092) | (0.015) | (0.022) | (0.013) | (0.021) |
| District FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Time trends | No | Yes | No | Yes | No | Yes |
| Sample Size | 456 | 456 | 480 | 480 | 480 | 480 |
| Pre-order treatment mean | 0.198 | | 0.171 | | 0.283 | |
| R-squared | 0.797 | 0.797 | 0.971 | 0.971 | 0.847 | 0.847 |

Notes: Data reported at the district level every other year from 1998 through 2014. Each column provides estimates from a separate OLS regression. The sample includes all Louisiana school districts. The percent of new elementary and secondary teacher hires who are black is the dependent variable for columns (1) and (2). The percent of the overall stock of elementary and secondary teachers who are black is the dependent variable for columns (3) and (4). The difference between the share black students and black teachers in the district is the dependent variable for columns (5) and (6). Time trends are included in the even columns, and separate trends are estimated for Tangipahoa vs. the control districts. "Court order" estimates the effect of the 2010 court ordered hiring criteria in Tangipahoa. Standard errors in parentheses are clustered by year.
***p≤0.01, **p≤0.05, *p≤0.10.

**Table 3. Difference in Differences Analysis of Student Achievement**

| | State Standardized Test Passing Rate | | | | Algebra End of Course Exam | English End of Course Exam |
|---|---|---|---|---|---|---|
| | Math | ELA | Science | Social Studies | | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Court order | -0.006 | -0.013 | -0.014 | -0.025 | 0.008 | 0.028 |
| | (0.020) | (0.012) | (0.014) | (0.017) | (0.035) | (0.027) |
| District FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Student demog. | Yes | Yes | Yes | Yes | Yes | Yes |
| Time trends | Yes | Yes | Yes | Yes | Yes | Yes |
| Sample Size | 476 | 476 | 476 | 476 | 550 | 481 |
| Pre-order treatment mean | 0.571 | 0.609 | 0.552 | 0.604 | 0.590 | 0.715 |
| Grades covered | 3-8 | 3-8 | 3-8 | 3-8 | High School | High School |
| R-squared | 0.931 | 0.943 | 0.957 | 0.952 | 0.775 | 0.790 |

Notes: Data reported annually by district from 2007 to 2014. Each column provides estimates from a separate OLS regression. The sample includes all Louisiana school districts. The dependent variables in columns (1) through (4) are the share of students passing (i.e., scoring "Advanced," "Mastery," or "Basic") the state standardized exam in mathematics, English/Language Arts, Science, and Social studies, respectively. The dependent variables in columns (5) and (6) are the share of students passing (i.e., scoring "Excellent," "Good," or "Fair") the Algebra I end-of-course exam and English II end-of-course exam, respectively. "Court order" estimates the effect of the 2010 court-ordered hiring criteria in Tangipahoa. Standard errors in parentheses are clustered by year.
***p≤0.01, **p≤0.05, *p≤0.10.

**Table 4. Black Teacher Enrollment Share in Tangipahoa Schools by Racial Composition of School, Before and After Reform**

| | Unitary Schools | Non-Unitary Schools | Difference | Unitary Schools | Non-Unitary Schools | Difference | Difference-in-Differences |
|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| *A. Unitary Schools Defined as Black Teacher Employment Share > 40%* | | | | | | | |
| | Before Court Order (2007-2009) | | | After Court Order (2010-2014) | | | |
| Black Teacher Employment Share | 0.536 | 0.131 | 0.404 | 0.497 | 0.180 | 0.317 | -0.085* |
| | [0.107] | [0.086] | (0.023) | [0.081] | [0.089] | (0.020) | (0.041) |
| | (n=20) | (n=76) | | (n=23) | (n=138) | | |
| *B. Unitary Schools Defined as Black Student Enrollment Share > 40%* | | | | | | | |
| | Before Court Order (2007-2009) | | | After Court Order (2010-2014) | | | |
| Black Teacher Employment Share | 0.313 | 0.073 | 0.241 | 0.300 | 0.133 | 0.167 | -0.064*** |
| | [0.187] | [0.037] | (0.030) | [0.145] | [0.059] | (0.018) | (0.017) |
| | (n=57) | (n=39) | | (n=89) | (n=72) | | |

Notes: Sample includes Tangipahoa schools only. Standard deviations in brackets; standard errors in parentheses. Schools categorized as "unitary" by whether during the pre-period their black teacher employment share is greater than 40 percent (Panel A), or if their black student share is greater than 40 percent (Panel B). Difference-in-differences estimate in column (7) includes school and year fixed effects, and tests whether the gap in black teacher employment share narrows between non-unitary schools and unitary schools after the court-ordered hiring reforms in 2010.

**Appendix Table 1. Propensity Score Matched Comparison Analysis of Teacher Employment Effects**

| | Black New Teacher Hire Share | | Black Teacher Employment Share | | Representation Gap | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| No. Neighbors | 10 | 15 | 10 | 15 | 10 | 15 |
| Court order imposed | 0.089 | 0.097 | 0.018 | 0.020 | -0.044 | -0.036** |
| | (0.101) | (0.087) | (0.010) | (0.011) | (0.036) | (0.016) |
| District FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Time trends | Yes | Yes | Yes | Yes | Yes | Yes |
| Sample Size | 97 | 142 | 99 | 144 | 98 | 143 |
| R-squared | 0.679 | 0.708 | 0.984 | 0.963 | 0.648 | 0.727 |

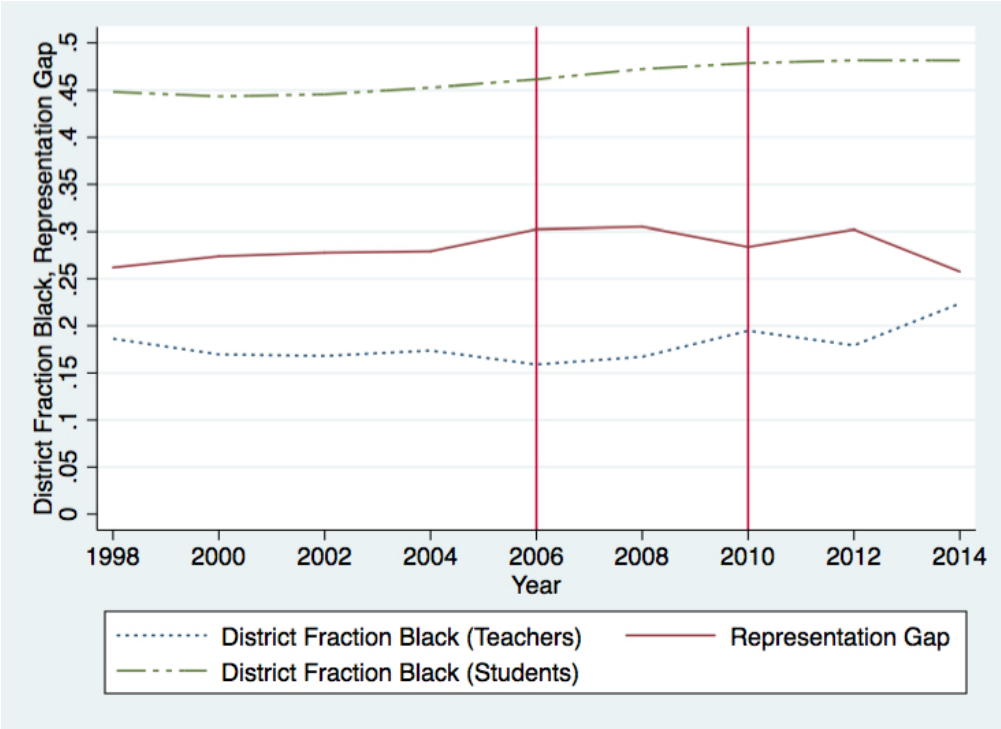
Notes: Each column provides estimates from a separate OLS regression. Regression specifications mirror the even columns in Table 2, and include district and year fixed effects plus differential linear time trends in the treatment and control districts. "No. Neighbors" denotes how many school districts with propensity scores closest to Tangipahoa Parish are included in the regression. The percent of new elementary and secondary teacher hires who are black is the dependent variable for columns (1) and (2). The percent of the overall stock of elementary and secondary teachers who are black is the dependent variable for columns (3) and (4). The difference between the share black students and black teachers in the district is the dependent variable for columns (5) and (6). "Court order" estimates the effect of the 2010 court order in Tangipahoa. Standard errors in parentheses are clustered by year.
***p≤0.01, **p≤0.05, *p≤0.10.

**Appendix Table 2. Difference in Differences Analysis of Teacher Employment Effects – Alternate Timing of Policy**

| | Black New Teacher Hire Share | | Black Teacher Employment Share | | Representation Gap | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Court case filed (2006) | 0.148*** | 0.068 | 0.039* | 0.022 | -0.015 | -0.022 |
| | (0.045) | (0.070) | (0.020) | (0.027) | (0.015) | (0.020) |
| District FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Time trends | No | Yes | No | Yes | No | Yes |
| Sample Size | 456 | 456 | 480 | 480 | 480 | 480 |
| R-squared | 0.797 | 0.797 | 0.971 | 0.971 | 0.847 | 0.847 |

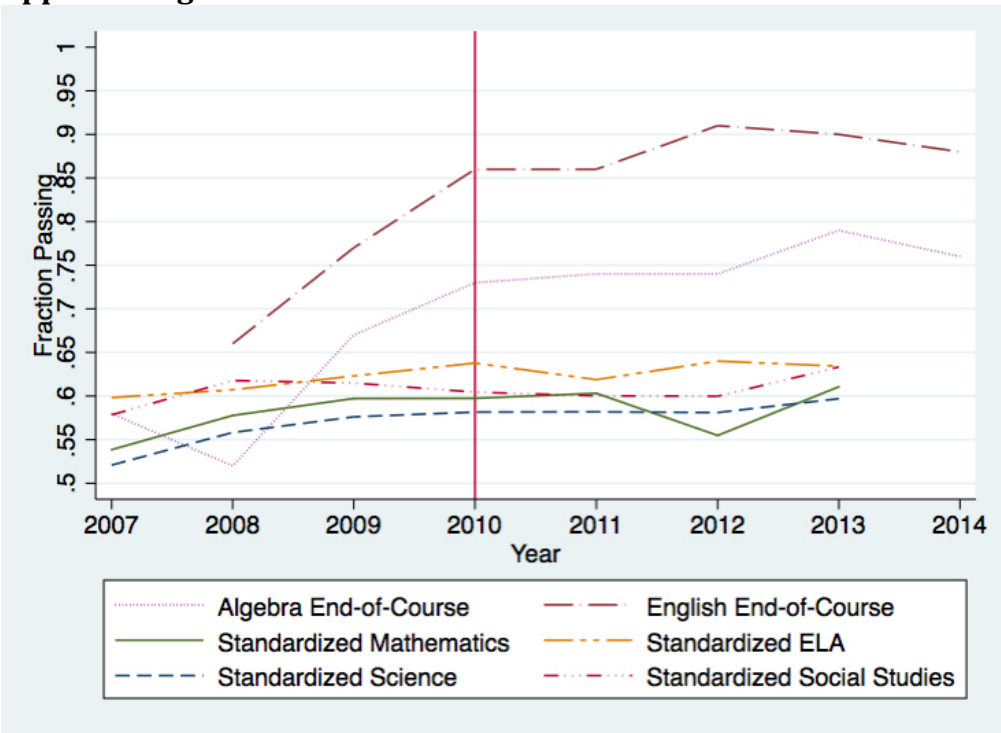
Notes: Each column provides estimates from a separate OLS regression. The sample includes all Louisiana school districts. The percent of new elementary and secondary teacher hires who are black is the dependent variable for columns (1) and (2). The percent of the overall stock of elementary and secondary teachers who are black is the dependent variable for columns (3) and (4). The difference between the share black students and black teachers in the district is the dependent variable for columns (5) and (6). Time trends are included in the even columns, and separate trends are estimated for Tangipahoa vs. the control districts. "Court case filed" estimates the effect of the 2006 reopening of the *Moore* case in Tangipahoa, four years prior to the court's decision. Standard errors in parentheses are clustered by year.
***p≤0.01, **p≤0.05, *p≤0.10.

**Appendix Figure 1. Share of Black Teachers and Students in Tangipahoa Parish Over Time**




Note: The student-teacher representation gap is defined as (percent black students – percent black teachers) in the district.

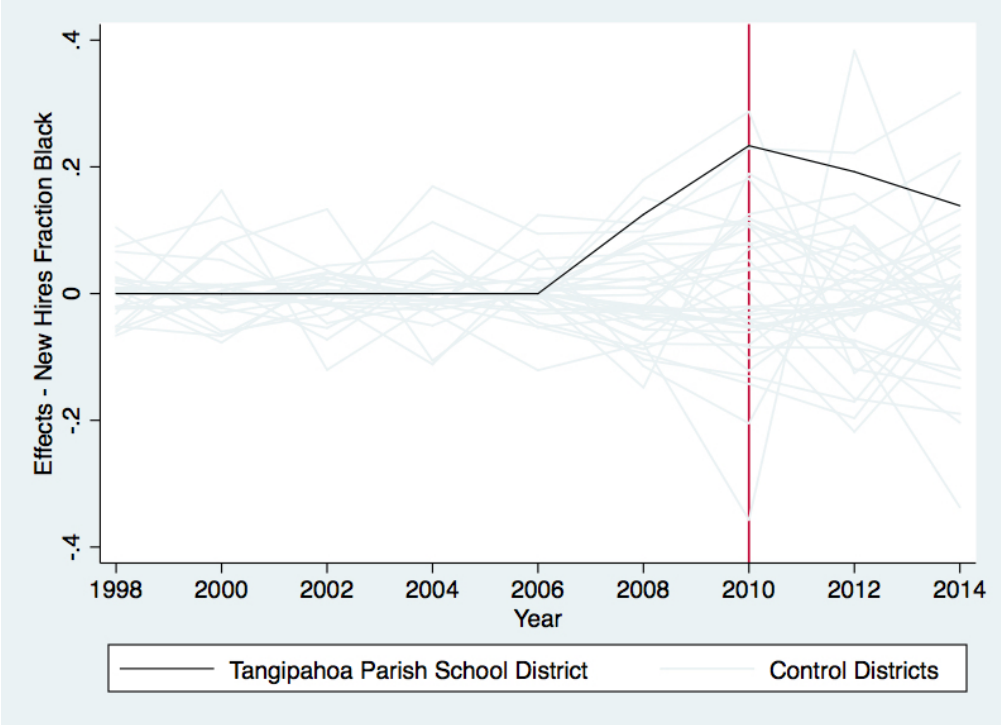
**Appendix Figure 2. Raw Trends in Student Achievement**



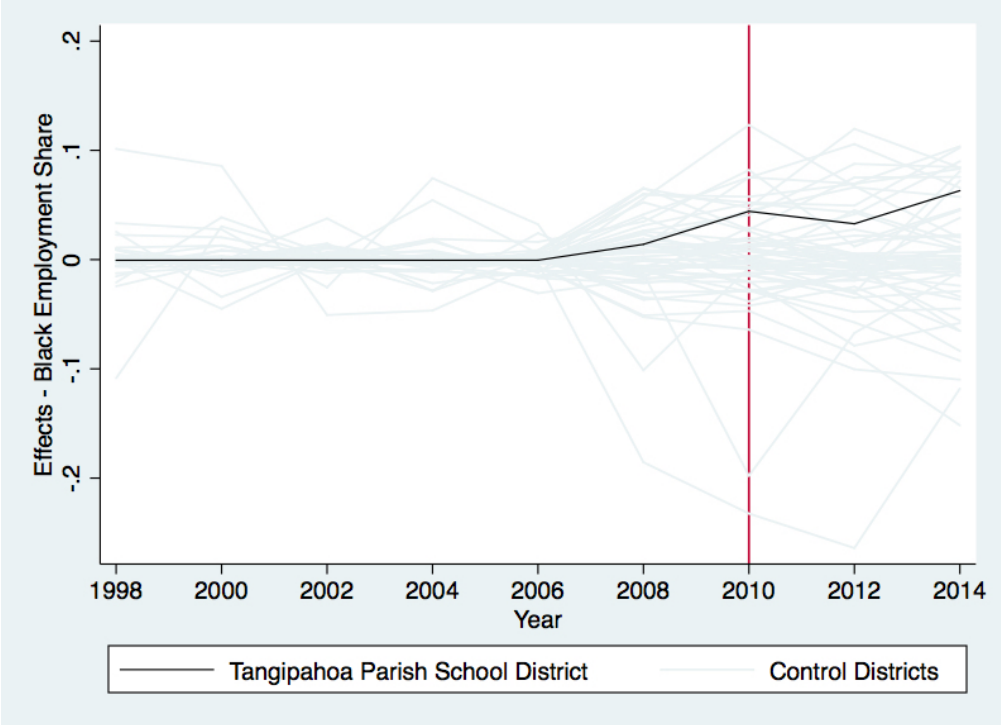

Notes: "Algebra End-of-Course" refers to the Algebra I EOC exam. "English End-of-Course" refers to the English II EOC exam. "Standardized Mathematics" refers to the Mathematics section of the LEAP/iLEAP. "Standardized ELA" refers to the English Language Arts section of the LEAP/iLEAP. "Standardized Science" refers to the Science section of the LEAP/iLEAP. "Standardized Social Studies" refers to the Social Studies section of the LEAP/iLEAP. "Fraction Passing" refers to the fraction of students in grades 3, 4, 5, 6, 7, and 8 who scored "Advanced," "Mastery," or "Basic" on the requisite LEAP/iLEAP section or the fraction of students who scored "Excellent," "Good," or "Fair" on the EOC exams.

**Appendix Figure 3. Placebo Analysis of Synthetic Control Approach**

A. Effect of Court-Ordered Hiring Criteria on New Hires Fraction Black in the Tangipahoa Parish School District and Placebo Effects in all 37 Control Districts




B. Effect of Court-Ordered Hiring Criteria on Black Employment Share in the Tangipahoa Parish School District and Placebo Effects in all 53 Control Districts



C. Effect of Court-Ordered Hiring Criteria on the Student-Teacher Representation Gap in the Tangipahoa Parish School District and Placebo Effects in all 53 Control Districts