LEGAL ACTIVISM, STATE POLICY, AND RACIAL INEQUALITY IN TEACHER SALARIES AND EDUCATIONAL ATTAINMENT IN THE MID-CENTURY AMERICAN SOUTH

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ABSTRACT

In the late 1930s, the NAACP launched a campaign to equalize Black and white teacher salaries
in the de jure segregated schools of the American South. Using newly collected county panel data
spanning three decades, this paper first documents heterogeneous within-state impacts of the
campaign on teacher salaries. In states that reinforced successful NAACP litigation by
introducing universal minimum salary schedules based on objective criteria, the relatively large
wage penalty historically suffered by Black teachers in districts with higher Black enrollment
shares disappeared by the mid-1950s. In states that resisted by adopting salary schedules using
the National Teacher Examination as a measure of teaching efficacy, that penalty remained. In
the second part of the paper, we estimate the effect of teacher pay on educational attainment
exploiting variation in Black salary gains over time across counties with different Black
enrollment shares, and across states by whether subsequent state policy reinforced or resisted
court rulings favorable to the NAACP. We find that Black teacher salary gains contributed to the
large reductions in racial inequality in school enrollment and grade progression in the South at
mid-century.

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An online appendix is available at http://www.nber.org/data-appendix/w30631

I.   Introduction

From the end of Reconstruction to the mid-20th century, *de jure* segregation characterized essentially all aspects of southern life. "Separate but equal" facilities were deemed constitutional by the U.S. Supreme Court in *Plessy v. Ferguson* (1896), but equality in general – and specifically as it applied to public education – was a slippery concept. For the first decades of the 20th century, glaring inequality in the resources available to Black and white public schools was in fact the norm (Margo, 1990), and it remained so despite the efforts of northern philanthropists like Julius Rosenwald (Donohue, Heckman, and Todd, 2002; Aaronson and Mazumder, 2011; Carruthers and Wanamaker, 2013).

Several forces converged in the late 1930s and early 1940s to prompt a shift toward racial equality in school resources. This paper focuses on the NAACP's campaign to force teacher salary equalization through the courts, along with its downstream effects on state policy. Sharp increases in the average salaries of southern Black teachers at mid-century, both in absolute terms and relative to their white counterparts, make a strong *prima facie* case for the efficacy of the NAACP's efforts.[1] Using cross-state variation in first filing dates of NAACP cases, Donohue, Heckman, and Todd (2002) conclude that NAACP litigation was an important driver of these changes, as well as the relatively large improvements in pupil-teacher ratios and term lengths in southern Black schools in the 1940s and 1950s.

This paper begins by re-examining these findings using newly digitized, county-level data on school resources by race spanning the 1930s through the 1950s.[2] We focus on six former Confederate states that accounted for most of the (still limited number of) NAACP-supported

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[1] See Appendix Figure 1 Panel A. Data are the state panel data from the southern and border region used in Card and Krueger (1992a). Average teacher salaries were converted to real (2018) dollars using the CPI-U (1982-84=100), and states are given equal weight.

[2] Race-specific school resource data are consistently available only for counties. However, school districts coincide with counties in many southern states.

teacher salary cases. Our empirical approach is founded on an observation by contemporaries (Bond, 1934; Johnson, 1941; Myrdal, 1944), replicated in our data: in the pre-campaign era, Black teachers in districts with higher Black student representation suffered a wage penalty, while white teachers reaped a pay premium. Black disenfranchisement was arguably at the heart of this phenomenon. Electoral devices instated at the turn of the century and still on the books in the 1930s left southern Black citizens with limited political recourse when white school leaders redirected state aid for their children to white schools. The higher the ratio of Black to white enrollment, the more funds per white child there were to be diverted (Margo, 1990).

Nothing about the campaign itself would have directly changed this practice. Even as Thurgood Marshall tried these cases in federal court, the southern Black population remained disenfranchised, and advantageous rulings only bound litigated districts. However, possibly incentivized by the threat of further litigation – or worse, a legal challenge to the dual system itself – some state governments followed NAACP victories with policy changes that effectively tied the hands of local white school leaders. We show that, in states that adopted universal minimum teacher salary schedules based on objective criteria, the larger wage penalty suffered by Black teachers in districts with higher Black enrollment shares was eliminated by the 1950s.[3] But in states where new minimum salary schedules incorporated the National Teacher Examination as a measure of teaching efficacy, the salary gradient in Black share remained.

In the second part of the paper, we estimate the effect of teacher pay on educational attainment, exploiting variation in Black salary gains over time across counties with varying Black shares and across states by whether subsequent policy reinforced or resisted court rulings favorable to the NAACP. This analysis builds on the seminal work of Card and Krueger (1992a,

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[3] Participation in state aid programs was made contingent on compliance, and compliance was incentivized by large increases in state aid to fund white teacher raises as well under the new schedules. See Section II.

1992b), who used state panel variation at mid-century to estimate the effect of school resources on educational attainment, earnings, and the return to schooling.[4] Looking within states, we sidestep biases from unobserved state-by-time varying determinants of human capital accumulation. Even with a within-state approach, however, we face potential biases; for example, Black students and teachers in counties with higher Black shares were poised to gain more from the high school movement (Goldin, 1998; Goldin and Katz, 1999, 2008). They may have also been affected differently by World War II (Margo, 1990). We incorporate controls, but the additional across-state difference is arguably more valuable: if changes in the relationship between attainment and Black share in resistant states capture what would have happened absent reinforcing policy changes, we isolate the effects of Black teacher salary gains.

Using county tabulations from the 1940 and 1960 Censuses, we find larger increases in 12th grade completion of Black 18- and 19-year-olds – and larger reductions in racial inequality in 12th grade completion – in counties with higher baseline Black enrollment shares. However, these changes are close to identical across the two groups of states, despite the much larger relative gains in Black teacher salaries where subsequent policy was reinforcing. A control-based approach in reinforcing states yields similar results. Raises for Black teachers may have been effective in promoting continued school enrollment at younger ages, however. Constructing school continuation rates from annual data on enrollment by grade for four states, we see large improvements in both absolute and relative Black continuation from 6th to 9th grade over the period of interest. This was true on average and especially in counties with higher baseline Black

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[4] Card and Krueger (1992a) showed that racial convergence in pupil-teacher ratios could explain in full the narrowing of the Black-white gap in educational attainment across cohorts of southern-born men born 1910 and 1949, and a quarter of inter-cohort convergence in Black relative earnings. (See also Card and Krueger (1996).) Also using state-by-cohort variation, Card and Krueger (1992b) found that reductions in pupil-teacher ratios and increases in teacher pay were associated with increased earnings and educational attainment among white men born across the U.S. between 1920 and 1949.

enrollment shares, though only in states where later policy reinforced court rulings favorable to the NAACP. Relative salary improvements of Black teachers also lowered the Black-white gap in progression from 1st to 2nd grade, which narrowed greatly over the period.

Our conclusions are thus nuanced. Large raises for Black teachers in the mid-century South do not appear to have contributed to higher rates of Black high school completion, or to a narrowing of the Black-white completion gap. However, they may have encouraged continuation on to high school of the subset of a cohort that made it to 6th grade, as well as narrowed Black-white gaps in earlier grade progression. This may register in cohort average years of completed schooling – an attainment outcome not available to us but used by Card and Krueger (1992a). The fact that Black teacher salary gains appear to have reduced racial inequality without raising Black attainment on some margins also implies negative spillovers of the campaign and later state policy changes on white students. This is not a surprise, given the political economy of school finance in the South at this time. Local white school leaders arguably sought to minimize spending on Black students, so meeting new teacher salary mandates may have required slowing growth in white school spending overall.

This paper makes several contributions. First, we illustrate the local incidence of teacher salary policy at mid-century that has to date only been evaluated at the state level in panel data (Donohue, Heckman, and Todd, 2002) and at the county level in the cross section (Card, Domnisoru, and Taylor, 2022). Our findings complement prior conclusions (e.g., Donohue, Heckman, and Todd, 2002; Tushnet, 1987) that external pressure from the NAACP promoted equalization before federal intervention in the mid-1960s finally brought southern school segregation to an end (Boozer, Krueger, and Wolkon, 1992; Ashenfelter, Collins, and Yoon, 2006; Cascio et al., 2010) and re-enfranchised southern Blacks (Cascio and Washington, 2014).

However, our conclusions are subtler, suggesting NAACP intervention did not always bring about positive change. Still, like Card, Domnisoru, and Taylor (2022), we show the critical role of minimum salary schedules in teacher wage determination in the mid-century South.

Second, we add to the literature pioneered by Card and Krueger (1992a, 1992b) that estimates the relationship between school spending and outcomes beyond test scores. Previous studies exploiting court-ordered and legislative shifts in state funding formulas in the 1970s, 1980s, and 1990s have shown that exposure to higher school spending can have meaningful effects on later-life outcomes, like educational attainment and earnings (Jackson, Johnson, and Persico, 2016; Rothstein and Schanzenbach, 2022).[5] By drawing quasi-experimental variation from an earlier historical episode in county panel data, we complement recent work by Card, Domnisoru, and Taylor (2022) on the role of teacher salaries in intergenerational mobility, based on a cross-section of counties in 1940.[6] Estimating the downstream impacts of school resource shocks in the 1940s and 1950s, we start to fill a temporal gap in this literature.

II. Historical Background

This section first describes the educational landscape in the South on the eve of the NAACP's campaign, providing more detail on how political forces likely generated systematic differences in Black-white school spending gaps within states – a key input to our research design. We then describe the campaign itself and how state governments reacted, which together form our remaining sources of variation.

II.A. *Suffrage Restrictions and the Importance of Black Enrollment Share*

[5] Card and Payne (2002), LaFortune, Rothstein, and Schanzenbach (2018), and Brunner, Hyman, and Ju (2020) study the impacts of state school finance reforms on test scores. Guryan (2001), Clark (2003), and Hyman (2017) focus on school finance reforms in specific states. Other policy changes involving shocks to federal aid have provided alternative sources of variation; see, for example, Cascio, Gordon, and Reber (2013).

[6] We also complement earlier studies linking 1940 Census outcomes to school resource exposure earlier in life (Aaronson and Mazumder, 2011; Carruthers and Wanamaker, 2017a, 2017b; Baker, 2019b). Orazem (1987) and Margo (1990) use within-state variation to estimate effects of school resources in the early 20th century South on earlier life outcomes.

Between 1890 and 1910, essentially all southern states passed suffrage restrictions designed to ensure one-party (Democratic) white rule (Kousser, 1974). While these devices certainly disenfranchised some white men, the impacts on Black male suffrage – compounded by intimidation, violence, and fraud – were profound. What political power Black men enjoyed during Reconstruction rapidly eroded as primary elections were limited to whites, poll taxes disproportionately drove Black men from the ballot box, and literacy tests allowed local registrars wide latitude to deny the franchise based on skin color (Keyssar, 2000).

The erosion of Black male voting rights coincided with a striking decline in resources devoted to Black relative to white schools in the South. Between 1890 and 1910, the typical southern state went from near racial equality in per-pupil school spending to a large Black deficit; in some instances, Black school spending fell in real terms even as spending on white schools skyrocketed.[7] Racial inequality is thought to have arisen through two funding mechanisms – new local (property and other) tax revenues that were directed toward white schools, and the expropriation of state aid for Black education by white school leaders politically unaccountable to local Black populations (Margo, 1990). Admissions of expropriation were egregious; for example, one school superintendent said: "We have twice as many colored children of school age as we have white, and we use their money. Colored children are mighty profitable to us" (Washburne, 1942, p. 115; as quoted in Margo, 1990).[8]

Intuitively, where Black children represented a higher share of the enrolled population, there was more state education aid for white school leaders to capture. The practice thus should

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[7] While this correlation does not necessarily imply a causal relationship, several studies have found that exogenous shocks to Black political power affected the provision of local public goods over this period (Naidu, 2012), as well as during Reconstruction (Logan, 2020) and in the 1960s and beyond (Cascio and Washington, 2014).

[8] Margo (1990) provides other quotes along these lines. For example, another superintendent from Louisiana noted, "…the Negro educables… bring into the parish from the state school fund $20,000 more than is now expended for Negro education" (Foote and Robertson, 1926, p. 21). Yet another said, "…the principal population is colored, and the whites … have all the money they want to run the white schools" (State of Louisiana, 1908, p. 60).

have given rise not just to a Black-white school spending gap on average, but also to a within-state relationship between the size of the gap and local Black enrollment share. With state tax revenue distributed on a per-capita basis, constant per-pupil local revenue, balanced budgets, and a constant expropriation rate across districts, there in theory should have been an increasing relationship between (district) Black enrollment share and white per-pupil school spending, but no relationship between Black share and Black per-pupil school spending (Online Appendix A). During the 1939-40 school year (our baseline), the former holds in our data but not the latter: counties with higher Black enrollment shares had on average higher white per-pupil spending, but lower Black per-pupil Black spending (Figure 1 Panel A). This negative relationship may have reflected lower average per-pupil local state revenues (Figure 1 Panel B)[9] or higher expropriation rates in these counties.[10]

The relationship between Black-white gaps in school spending and Black enrollment share was described by contemporaries, including Horace Mann Bond (1934), Charles Johnson (1941), and Gunnar Myrdal (1944). It has also been demonstrated in modern empirical work using historical data outside that used in this study (e.g., Margo, 1990; Reber, 2010, 2011; Cascio, Gordon, and Reber, 2013; Cascio and Washington, 2014). We argue that this long-standing relationship, particularly the negative relationship between Black enrollment share and Black average teacher salaries and the practices underlying it, was radically disrupted by the NAACP's teacher salary equalization campaign and the state policy changes that followed.

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[9] While state aid formulas may have been specified purely on a per-capita basis in the early 20th century (Margo, 1990), this was no longer the case by the late 1930s. For example, Louisiana's State "Equalization Fund" in 1939-40 assumed lower "costs" of per Black teacher than per white teacher (e.g., 38% of white salaries and 20% of other costs). Equalization funds in the amount of the difference were then allocated to parishes where total program costs exceeded statutory revenue sources (State Department of Education of Louisiana, 1941). Because of their higher anticipated costs, more state revenue flowed to parishes with lower Black shares. See Online Appendix A.
[10] Expropriation rates may have been higher in districts with higher Black enrollment shares either due to more racism or, if mobility of Black labor was less of a threat, weaker incentives to maintain schools of sufficient quality for the Black population (Margo, 1991).

II.B.   The NAACP Campaign

A legislative path to racial equality in school resources not being an option, in the 1930s the NAACP developed an ambitious strategy to press for equality through the courts, with the goal of making Jim Crow ultimately too expensive to maintain. Recognizing the NAACP's limited resources and the futility of lawsuits on a district-by-district (and potentially year-by-year) basis, the "Margold Plan" – named for its crafter, New York attorney Nathan Margold – sought to challenge entire southern state education systems (Beezer, 1986; Tushnet, 1987). When the campaign was launched in 1936 in Maryland (*Gibbs v. Board of Education*), however, it was scaled back from Margold's vision; NAACP leadership decided that the time was not quite right for a direct attack on segregation. Still, the Margold Plan became "the Bible" for the NAACP's legal efforts during this era (Kluger, 1975; p. 136), establishing the importance of a well-organized effort that effected change well outside where rulings were binding.[11]

There were, in fact, not many cases brought under the campaign. By the time it was winding down in 1948, the NAACP had filed 28 cases across nine of the 11 former Confederate states (not including North Carolina and Mississippi) and seven cases across three of the six border states (Kentucky, Maryland, Missouri) (Murray, 1949). Not all these cases were decided favorably for the plaintiff, but most were. Figure 2 maps the filing year of the first (or only) favorably decided NAACP-backed case in a federal court, along with the total number of cases by state. Underlying data are based on reports by contemporaries, including NAACP attorney and future Supreme Court justice Thurgood Marshall (Marshall, 1947; Murray, 1949); Appendix Table 1 provides further details. There was not much variation in the timing of first cases across states; in the Old South (former Confederacy), for instance, filing years ranged from 1940 to 1943, with the modal year being 1942. Most states also experienced only one or two cases.

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[11] See Kluger (1975), Tushnet (1987), and Beezer (1986) for discussions of the NAACP equalization campaign.

Still, there were multiple mechanisms through which only one or two lawsuits could have spilled over to other school systems in the same state – a central hope of the NAACP's strategy. One was procedural. The first six NAACP cases, for example, brought "a mandamus action… in the appropriate state court, to compel salary-fixing authorities to fix salaries without regard to race or color" (Marshall, 1947; p. 41); minimum salary schedules in the South, where established, almost always varied explicitly by race at this time (Card, Domnisoru, and Taylor, 2022). While promising, this approach proved ineffectual,[12] prompting the NAACP to shift toward the federal courts and arguments regarding equal protection and due process under the 14th Amendment. The declaratory judgments and injunctions in these cases only bound the litigated district. However, strongly worded decisions or precedents set in federal court may have been a second mechanism for spillovers, incentivizing more widespread equalization in a state. A third mechanism was the specter of school integration; "voluntary" compliance may have been thought a means to deflate any drive to eliminate the dual system.

Whatever the motivation, the most effective spillovers came through subsequent changes to state law regarding teacher salaries akin to those that the NAACP initially sought. Of the six states in our analysis – which together account for 24 of the 28 NAACP cases in the Old South – four adopted new universal minimum teacher salary schedules within six years of the NAACP filing a first case. These states were Alabama (1946-47); Louisiana (1948-49); Tennessee (1947-48); and Virginia (1946-47). Each new minimum salary schedule was based on teacher training and experience only and had to be followed for a district to continue to receive state aid. This tied districts' hands vis-à-vis a large share of state aid, leaving less room for diversion of funds.[13]

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[12] Some of these cases resulted in local salary increases for Black teachers, either in response to pending decisions favorable to the plaintiff (*Gibbs*), settlement out of court, or after a case was dismissed. Others were dismissed without having an effect, either because plaintiffs were dismissed or on other legal grounds (Marshall, 1947).
[13] Online Appendix B provides details on the salary schedules.

Not all state policy changes supported the NAACP's cause, however. Florida and South Carolina – the two remaining states in our analysis – also changed minimum salary schedules for teachers, but in a way that "institutionalized new, more legally defensible forms of discrimination" (Baker, 1995; p. 49). In the early 1940s, court rulings in these states upheld the constitutionality of merit pay plans that were racially neutral on their face but discriminatory in practice.[14] These plans relied on standardized tests – namely the National Teacher Examination (NTE) – that had no proven association with effective teaching but a track record of lower scores among Black teachers. The use of the NTE was widespread in major Florida cities (Baker, 1995) and while the state minimum salary schedule Florida adopted in 1955 prohibited consideration of scores on the NTE, the GRE, "or a general knowledge test," it did allow counties to use "additional factors as incentives for determination and recognition of superior teaching ability and service" (National Education Association (NEA), 1968; p. 19). South Carolina incorporated teacher performance on the NTE directly into a minimum salary schedule introduced in 1945 (Baker, 1995; NEA, 1968), which remained on the books as late as 1968-69 (NEA, 1968; p. 37).

Regardless of whether reinforcing or resistant, new minimum teacher salary schedules were typically accompanied by massive increases in state aid for schools. With additional state revenue to fund Black teacher salary increases, white teachers could be "held harmless" by minimum salary schedule changes. However, the state revenue increases did more than that, helping to fund salary upgrades for white teachers as well. Indeed, the Black-white gap in average teacher salaries shrunk over time even as white average teacher salaries grew

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[14] Relevant cases were *Turner v. Keefe* (Florida, 1942), *Reynolds v. Board of Public Instruction for Dade County* (Florida, 1942), and *Thompson v. Gibbs* (South Carolina, 1943). A case filed in federal district court in Georgia in 1943 and decided in 1948, *Davis v. Cook* (Atlanta School Board) established that merit pay systems with subjective components that disproportionately disadvantaged Black teachers in practice constituted racial discrimination (Beezer, 1986; Donohue, Heckman, and Todd, 2002). However, this decision did not diminish the use of NTE in minimum salary schedules in Florida and South Carolina.

substantially in real terms (Table 1 Panel A). Increases in resources available to white schools provided an incentive to comply with new minimum salary guidelines.

When "reinforcing" states – Alabama, Louisiana, Tennessee, and Virginia – adopted universal statewide minimum teacher salaries, the Black teachers who stood to gain the most worked in districts with higher Black enrollment shares. It was there that Black average teacher salaries were the lowest – and Black-white gaps in average teacher salaries the highest – to start (Figure 1). We begin our analysis by looking for evidence of this change in the data, testing whether the gradient of Black teacher salaries in Black enrollment share became shallower over time in reinforcing states. We also show that this did not happen in resistant states. We then exploit the relatively large improvement in Black teacher salaries in counties with higher Black shares in reinforcing states to identify the effect of salaries on Black educational attainment.

III.   Data

Our analysis requires panel data on average teacher salaries (and other school resource measures) and educational outcomes at the local level. We rely on data at the county rather than school district level for two reasons: school district data are not consistently available for all states of interest, but where reported, they can be aggregated up to counties; and the lowest level of geographic aggregation for Census-based measures of educational attainment is the county.

III.A.   Data on School Resources

We digitized the school resource data for this paper from statistical tables in annual reports of state school superintendents in six states of the former Confederacy – Alabama, Florida, Louisiana, South Carolina, Tennessee, and Virginia. In each of these states, at least one school district was subject to NAACP teacher salary litigation in a federal court (Figure 2, Appendix Table 1). The available data for these states are annual and span the 1932-33 to 1959-

60 school years. With a few exceptions, all variables are our original data collection.[15] Data for all states except South Carolina are reported at the school district level and aggregated to the county level in the states where county and school district boundaries do not coincide.[16],[17]

The state annual reports offer richly detailed snapshots of local school systems. We digitized a variety of variables reported separately by race – average teacher salaries, expenditures on teacher salaries (if average teacher salaries were unavailable), teacher counts, and enrollment. Each of these variables was reported for all six states, though some stopped publishing teacher salaries by race and county following the 1954 *Brown v. Board of Education* decision.[18] We also gathered term length by race, but this information was unavailable for Virginia, and other states (Florida, Louisiana, and South Carolina) ceased reporting it in 1953-54 or 1954-55. School revenues by source (state and local) round out our data collection.

Table 1 give means [standard deviations] of key resource measures in the one to five years before and the 10 to 14 years after the NAACP had filed a teacher salary case in federal

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[15] For Alabama, Louisiana, South Carolina, and Tennessee, we drew 1932-33 to 1939-40 values for some variables (enrollment, average teacher salaries, and number of teachers) from the county panel data on school resources by race digitized and distributed by Carruthers and Wanamaker (2019). All other years of data for these variables in these states, all other variables (enrollment by grade, revenues by source), and all variables for Florida and Virginia are our original data collection. See Online Appendix C for more details.

[16] County and school district boundaries coincide in Florida and Virginia and nearly coincide in Louisiana. In Alabama and Tennessee, there are typically only one to two school districts per county.

[17] We also collected data for four of the five remaining states of the Old South: Arkansas and Georgia (which each had an NAACP teacher salary case) and Mississippi and North Carolina (which did not). Both the Arkansas and Georgia data are biennial. In addition, the Arkansas reports only offer a long panel on current expenditure per pupil in average daily attendance and total enrollment by race; information on average teacher salaries is limited and the number of teachers is not reported. The Georgia reports for 1945-46 and 1947-48 also lack statistical tables with resource information by district or county. The Mississippi and North Carolina data are both annual but limited in other ways: average teacher salaries or teacher salary expenditures by race are not reported at all in Mississippi and are not reported in North Carolina after 1950-51.

[18] Reporting of teacher salary data by race ends in 1955-56 in Florida and in 1956-57 in Louisiana. In the aftermath of *Brown*, the only policy lever to desegregate schools was a lawsuit, and these had to be brought against school districts one at a time. No school districts in Alabama, Louisiana, and South Carolina had any Black children attending school with white children by the 1959-60 school year. For the remaining states in our analysis, the number of school districts with any desegregation by 1959-60 was limited (e.g., one district in Florida, four in Tennessee, and six in Virginia), amounted to very small numbers of Black children attending white schools, and was almost entirely court-ordered (Southern Education Reporting Service, 1960). Racially identifiable schools did not begin to disappear in the South until the late 1960s, after more significant federal intervention (Boozer, Krueger, and Wolkon, 1992; Cascio et al., 2008, 2010).

court in a state. Statistics are separately reported for "reinforcing" states (Alabama, Louisiana, Tennessee, and Virginia; odd-numbered columns) and "resistant" states (Florida and South Carolina; even-numbered columns) and are weighted by the county share in total state enrollment in 1939-40.[19] For both groups of states, average salaries essentially tripled for Black teachers and nearly doubled for white teachers in real terms (2018 dollars) over this period (Panel A). In resistant states, the Black-white gap in average teacher salaries narrowed by more over time (64 versus 60 log points) but remained meaningful 10 to 14 years after litigation. In reinforcing states, the Black-white teacher salary differential was essentially eliminated.

These are not the only changes to school resources over this period, however. As shown in Card and Krueger (1992a) (see also Appendix Figure 1) – pupil-teacher ratios (constructed from enrollment and teacher counts) fell over time for Black and white children alike, albeit to a similar extent in both groups of states (Panel B). Combined with the improvements in teacher salaries, this meant that per-pupil spending on Black teacher salaries nearly quadrupled over the period (Panel C). With the caveat that the data are more limited, both Black and white term lengths also increased, but again to a similar extent across the two groups of states (Panel D).

While state means are useful to see, our main source of identifying variation is within states, across counties with varying Black enrollment shares. The final columns of Table 1 show the predictive power of 1939-40 Black enrollment share for school resources in the one to five years before an NAACP lawsuit; the model also includes state fixed effects, to match the specifications below. As suggested by Figure 1 Panel A, there is a strong negative relationship between Black enrollment share and every resource measure for Black schools. However, these

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[19] This gives each state equal weight, but more weight to larger counties within a state, in any given year. Appendix Table 2 describes how we arrived at our sample of 376 counties. Because Florida and Louisiana stop reporting teacher salary by race in 1955-56 and 1956-57, respectively, we impute real Black teacher salaries later in the decade for counties in these states using the observation in the county from the latest possible year. Black teacher salary trends in states with data suggest that this is a reasonable approximation.

gradients are not significantly different across reinforcing and resistant states, except in the case of per-pupil spending on teacher salaries. Here, relatively steep gradients in Black average salaries and pupil-teacher ratios in reinforcing states converge to a meaningful difference.

The initial within-state relationship between Black enrollment share and white teacher salaries is, however, meaningfully different across the two groups of states: the strong positive relationship between these variables in Figure 1 Panel A is driven by reinforcing states. This relationship was in theory explained by expropriation of state aid for Black schools by white school leaders with limited political accountability. This practice may have therefore been less common in resistant states. On the other hand, it may have been practiced just as vigorously but was less effective in raising white teacher salaries (if state education revenue was relatively limited), or counties with higher Black shares may have had lower local revenues with which to top up white salaries (see Online Appendix A). The latter is likely: resistant states were in fact more reliant on state aid for education on average (Table 1 Panel E), especially in counties with higher Black enrollment shares, where per-pupil local revenue was significantly lower.

III.B. Data on Schooling Attainment

Past studies linking school resources to later-life outcomes have assigned treatment using state of birth in the Census (Card and Krueger, 1992a, 1992a; Ashenfelter, Collins, and Yoon, 2006; Rothstein and Schanzenbach, 2022) or county of childhood residence in survey data (Jackson, Johnson, and Persico, 2016). We combine these approaches, using county of residence at ages 18-19 in the Census. For 1960, we construct race-specific school enrollment/12-year schooling completion rates by county of residence using Census tabulations purchased for 1960 for an earlier project and used in prior papers (e.g., Cascio, Gordon, and Reber, 2013).[20] We

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[20] The tabulations purchased for 1960 give counts of the population overall and the population still enrolled in school or with at least 12 years of reported schooling by single year of age, race, and county of residence. Our

created a comparable measure for 1940 from the full-count Census, which includes county of residence, school enrollment, and years of schooling (Ruggles et al., 2021).[21] School enrollment during one's teenaged years and ultimate educational attainment are of course not the same thing. However, a benefit of these data is that resource exposure is well-measured: teenagers residing in a county likely went to school there. Measures of attainment while young may also be less mismeasured than schooling reports later in life.[22]

The first two panels of Table 2 show mean enrollment/12-year completion rates at ages 18-19 from these data, by race and year. Reinforcing states had higher Black and lower white enrollment/completion rates in 1940, but the Black-white gap in these states was still substantial (e.g., for 19-year-olds, 24 percentage points versus 30 percentage points for resistant states). The Black-white gap narrowed by slightly more between 1940 and 1960 in resistant states, but this was driven by smaller improvements in white enrollment/completion rates, not larger improvements in Black rates. Black completion rates in 1940 were significantly negatively related to Black enrollment share in reinforcing states, and white completion rates in 1940 significantly positively related. However, the difference in Black share gradients across the two groups of states is statistically significant only for 19-year-old Black enrollment/completion.

A limitation of the Census-based analysis is that the high school completion margin may not be where teacher salaries have the most impact. We thus also construct school continuation rates from annual grade-specific school enrollment data, which are available by race and county

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calculations from public-use microdata for 1940 and 1960 (Ruggles et al., 2021) suggest that significant shares of 18- and 19-year-olds still enrolled or with at least 12 years of completed schooling had 12 or more years of schooling and were no longer enrolled. This was especially the case for white teens. See Appendix Table 3.
[21] We could estimate effects on enrollment rates at younger ages using Census data. However, three states changed their compulsory school ages over the period (Louisiana (14 to 16), Tennessee (16 to 17), and Virginia (15 to 16)), possibly raising enrollment in counties with higher Black shares by more and making results difficult to interpret.
[22] Using high school completion data gathered from state administrative reports, Goldin (1998) shows that the retrospective reports of educational attainment in the 1940 Census overstate high school completion rates, with the degree of overstatement growing in age. However, high school completion is not overstated among young people.

from the same reports from which we draw resource and revenue data for four of the six states in our analysis.[23] Building on Reber (2010), we use 6th grade enrollment to capture the number of potential high schoolers in a cohort. We focus on the ratio of 9th grade enrollment in year t to 6th grade enrollment in $t-3$ as our measure of high school continuation.[24] Using these data, we also construct a progression rate for younger students, specifically the ratio of 2nd grade enrollment in year t to 1st grade enrollment in $t-1$. At the beginning of our study period, it was not uncommon for a child to be in first grade for two or more years (Collins and Margo, 2006).

Sixth to 9th grade continuation rates improved substantially over the 1940s and 1950s. As shown in Table 2 Panel C, among Black children in reinforcing states, only an estimated 49 percent of 9th graders in 1939-40 had progressed in a timely fashion from 6th grade. Twenty years later, this figure stood at 83 percent, and the Black-white gap in high school continuation had greatly narrowed. Changes in resistant states were similar. And as was the case with the Census-based attainment measure, the relationship between Black share and Black (white) continuation rates was significantly negative (positive) for reinforcing states, though these gradients were not significantly different across the two groups of states. Gains in 1st to 2nd grade progression rates were similarly dramatic, but the relationship between Black share and baseline white continuation significantly stronger in reinforcing states (Panel D).

IV.   **Salary Intervention, Teacher Salaries, and Other School Resources**

IV.A.   Within-State Estimates

We begin by testing for sharp changes over time in the gradient of Black average teacher salaries – and the Black-white average teacher salary gap – in pre-campaign (1939-40) Black

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[23] There are no grade-specific enrollment data by race and county for Virginia. These data do exist for Louisiana, but only starting in 1940-41, rendering them unusable in our analysis.
[24] Reber (2010) focuses on progression from 8th grade to later grades (e.g., grades 11 or 12). That measure is not as informative for our period, given substantial attrition of children from school prior to 8th grade.

enrollment share. The solid dots in Figure 3 Panel A plot slopes from bivariate regressions of

log Black average teacher salaries on initial Black share by event year, limiting attention to

reinforcing states. We define event year as year t minus the filing year of the first successful

NAACP case in state s, t_s^* (see Figure 2 and Appendix Table 1). Regressions are weighted by

the county share in total state enrollment in 1939-40, and salaries are in 2018 dollars.

Consistent with statistics already presented, Black average teacher salaries in these states

were much lower in the pre-campaign period in counties with higher Black enrollment shares. In

the year of the case, however, this gradient started to become more shallow. Thus, even before

states changed minimum salary schedules, Black teachers in counties with higher Black student

representation experienced relatively large salary improvements.[25] However, schedule changes

appear to have been important for leveling up their salaries to their peers' elsewhere in the state:

the rate of increase accelerated four years after the filing date, when the first state (Alabama)

adopted a universal minimum salary schedule; another point of acceleration came when the

remaining states did so six years after. By a decade after the filing date, Black teachers in

counties with higher Black enrollment shares no longer suffered a wage penalty.

We test for statistically significant changes in the slope over time by estimating:

(1) $$x_{c(s),t}^B = \delta_{c(s)} + \gamma_{st} + \sum_{j \neq -1} \theta_j D_{st}^j B_{c(s)}^0 + u_{c(s),t}^B,$$

where $x_{c(s),t}^B$ is log Black average teacher salary in county c in state s in the school year that

starts the fall of year t, $B_{c(s)}^0$ is baseline (1939-40) county Black enrollment share in county c, the

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[25] The 1944 *Annual Report* for Louisiana (for 1943-44) described that the large increase in Black teacher salaries relative to 1939-40 "was due in large measure to the fact that Orleans Parish School Board, employing 12 percent of all Negro teachers in the state, equalized Negro and white salaries for the session." It went on to note that "strenuous effort is being made to improve the salaries of Negro teachers in other systems" (State Department of Education of Louisiana, 1944, p. 47). Between 1941 and 1945, following the 1940 U.S. Circuit Court of Appeals decision in *Alston v. Norfolk School Board* but before the adoption of a statewide minimum teacher salary schedule, the Virginia Department of Education also "made considerable progress toward equalizing the salaries of white and Negro teachers" (Ellis, Smith, and Watkins, 1969; p. 1302).

$D_{st}^{j} = 1[t - t_s^* = j]$ are event year indicators, and $\delta_{c(s)}$ and γ_{st} represent county and state-by-year fixed effects. The solid dots in Figure 4 Panel A present estimates of the θ_j, which represent the predicted change in the Black share gradient between event year j and the year prior to the NAACP filing year; capped vertical lines give 95% confidence intervals.[26] While the increase in the slope on Black enrollment share between the year prior to the first case and each of the three following years is not significant, it is in all subsequent years. By contrast, there are no significant slope differences between the year prior and any earlier years, consistent with a causal effect of the campaign and later adoption of universal state minimum salary schedules.

To explore magnitudes, the first row and column of Table 3 Panel A gives the coefficient on $D_{st}^{10-14}B_{c(s)}^{0}$ from a restricted version of (1) that pools event time into five-year bins. The reference event years are now -5 through -1 combined, and by presenting effects at event years 10 to 14, we focus on when the relationship between Black share and Black average teacher salaries appears to have stabilized. The estimate implies that, for each 10-percentage-point increase in pre-campaign Black enrollment share, the average salary of Black teachers increased by 4.3 log points more between the 5 years before and the 10 to 14 years after the first suit was filed. For a county with the average Black enrollment share in a reinforcing state (31.3 percent), the model thus predicts a 13.6 log point increase in Black teacher salaries. This represents 13% of the overall growth in Black teacher salaries in these states over this period, suggesting that much of that growth was shared across all districts in a state.

While the NAACP campaign explicitly targeted Black teacher salaries, the subsequent changes to salary schedules may have contributed to improvements in white teacher salaries as

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[26] This is the stacked version of a state-specific model, with event-study coefficients restricted to be the same across states. As was the case in Figure 3, we weight by the county share in 1939-40 state enrollment. Standard errors are clustered on county. We censor event year at -9 and 16 and include the corresponding event year-by-Black share indicators in the regression. However, we do not present these coefficients, since the state composition is different than for event years -8 through 15.

well. Given that white teacher salaries were already higher in counties with higher Black representation, however, white teachers in these places would have had less to gain. The solid dots in Figure 3 Panel B suggest this was the case: the positive relationship between pre-campaign Black enrollment share and the natural log of white teacher salaries in reinforcing states diminished over time. Changes in the gradient of white teacher salaries in Black enrollment share were statistically significant after but not before the filing date (Figure 4 Panel B) and stabilized at a reduction about half the size of the increase for Black teacher salaries (column 1 of Table 3 Panel B). The baseline estimates thus imply that improvements in Black average teacher salaries accounted for only two-thirds of the within-state narrowing of the Black-white salary gap in reinforcing states (Figures 3 and 4 Panel C, column 1 of Table 3 Panel C).

Within-state salary trends for Black teachers in resistant states were quite different. Returning to Figure 3 Panel A, the relationship between Black share and Black teacher salaries in these states was also negative in the pre-campaign period. But it got significantly more negative, not less, after the first ultimately successful NAACP case was filed, reversing an apparent trend toward improvement (Figure 4 Panel A). In other words, the adoption of salary schedules based on the NTE appears to have exacerbated the salary penalty for Black teachers in counties with higher Black student representation. While the gradient eventually reverted to pre-campaign levels, it did not flatten significantly: as shown in the second row of Table 3 Panel A, the long difference estimate, contrasting the one to five years prior to and 10 to 14 years after the filing date, is not significantly different from zero (-0.036 (s.e.=0.076)).

IV.B.   *Threats to Identification*

For these estimates to isolate the downstream impacts of the NAACP equalization campaign, it must be the case that there was no other reason for Black salaries to have changed

differently over time in districts with counties Black enrollment shares. But there are other channels through which these changes could have occurred. For example, high schools continued to be established in the South into the 1940s, especially for Black children (Goldin, 1998; Goldin and Katz, 1999, 2008), and high school teachers were often paid more. Districts with higher Black shares had lower pre-existing high school presence, and so more to gain from this movement. Salary increases for Black teachers would have also been a way to address the widespread shortages of Black teachers in the South during World War II (Margo, 1990).

If the high school movement in particular were a confounding factor, we might expect to see evidence in school resources not directly targeted by the NAACP that were more favorable in high schools – pupil-teacher ratios and term lengths.[27] The second and third columns in Table 3 present estimates from the restricted event-study model for the log of each of these outcomes in reinforcing states; Appendix Figures 2 and 3 give the full event-study estimates, maintaining the scale used in Figure 4 for comparison. Counties with higher initial Black shares did see larger reductions in Black pupil-teacher ratios and slower improvements in white pupil-teacher ratios after versus before the campaign. The changes contribute to even relative improvements in Black and Black-white gaps in per-pupil spending on teacher salaries than on salaries themselves (Table 3 column 4, Appendix Figure 4). With the caveat that the data are more limited and there are stronger pre-trends, a similar result appears to hold for term length.

These findings suggest that the baseline within-state salary estimates could be contaminated by other forces at work to affect teacher salaries in the South during this period. One way to address this is by adding controls to the restricted event study model. Adding state-by-time varying effects baseline enrollment/completion rates (as a predictor of potential salary

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[27] The 1940s and 1950s also saw widespread consolidations of the rural, one-teacher schools that were often present in Black communities. This too could have affected these alternative resource measures and could have affected trends in educational attainment. However, it is less clear how it would have affected salary growth.

changes due to the establishment of high schools) and pupil-teacher ratios themselves, the effects on Black salaries are however very similar to the baseline specification (Appendix Table 4). This suggests that, at least for the Black teacher salary estimates, any bias from the expansion of high schools in particular is not large.[28] But the effects on white teacher salaries fall with these controls, suggesting that the estimates in the first column of Table 3 may owe more to the spread of high schools than the new minimum salary schedules. The fact that white teacher salaries also fall significantly more in the higher Black share counties of resistant states (without controls) also suggests that these changes may in large part owe to other forces.

To capture the potential salary impacts of World War II, we carry out a similar exercise using the share of land area in a county accounted for by farms in 1940 (Haines and ICPSR, 2010), as a proxy for war mobilization.[29] This has more effect on the estimates, but they remain significant (Appendix Table 4).

IV.C. Adding Cross-State Variation

An alternative approach to estimating the salary effects of the campaign in reinforcing states is to use resistant states (Florida and South Carolina) as an additional comparison group, moving from what is essentially a difference-in-differences model to a triple-difference specification. The idea is that changes in the gradient of teacher salaries with respect to Black share in these states capture what would have happened to that gradient in reinforcing states in the absence of the changes in their state salary schedules described above. The appeal of this approach is that it removes bias from differential trends in all unobserved county characteristics correlated with Black share, insofar as those trends are shared by reinforcing and resistant states.

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[28] Relatedly, these controls do not alter the relationship with Black pupil-teacher ratios (Appendix Table 5), suggesting that those changes may owe to other factors and may be occurring in lower grades.
[29] Holding constant the nonwhite population share, war mobilization rates were lower in states with a higher share of farmers in the population (Acemoglu, Autor, and Lyle, 2004).

The solid dots in Figure 5 plots the difference in event-study estimates for Black teacher salaries across the two groups of states (with 95% confidence intervals). These are the $\tilde{\theta}_j$ from:

$$(2) \qquad\qquad x^B_{c(s),t} = \delta_{c(s)} + \gamma_{st} + \sum_{j\neq-1} D^j_{st} B^0_{c(s)} \left(\theta_j + \tilde{\theta}_j T_s \right) + u^B_{c(s),t},$$

where T_s is indicator for set to one is s is a reinforcing state. The third row of Table 3 Panel A (column 1) gives the long triple-difference estimates that correspond to (2). The improvements in Black teacher salaries in counties with higher Black enrollment shares were significantly larger in reinforcing than resistant states. However, the growth in white average teacher salaries was not significantly slower (Figure 5 and column 1 of Table 3 Panel B). Differencing across the two groups of states, nearly all the narrowing of the Black-white gap in teacher salaries is thus driven by improvements in Black teacher salaries (Figure 5 and column 1 of Table 3 Panel C). The magnitudes of the estimates are very similar to those from of the restricted version of (1) estimated on reinforcing states only, with additional controls (Appendix Table 4).

Unlike the first approach, however – and Donohue, Heckman, and Todd (2002) – this empirical approach does not imply any downstream impacts of the NAACP campaign on Black pupil-teacher ratios or term length. Appendix Figures 5 and 6 show the difference in event study estimates for these resource measures; they are also summarized in columns 2 and 3 of Table 3. Relative gains in Black pupil-teacher ratios and term lengths in counties with higher Black enrollment shares are statistically indistinguishable across the two groups of states. Over the long run, improvements in Black average teacher salaries thus explain essentially all gains in per-pupil spending on teacher salaries in Black schools (Appendix Figure 7, Table 3 column 4). This result makes the triple-difference approach a cleaner one for estimating impacts of Black teacher salaries on educational outcomes.

Still, there may be differential effects on school resources unobserved to us. While per-pupil spending on teacher salaries accounts for a large share of overall per-pupil school spending, it does not account for all of it. Indeed, we expect to see slower relative gains in white school resources in the higher Black share counties of reinforcing states, if their new salary schedules left less state aid for Black schools available for expropriation. This is an important consideration for interpretation of attainment findings.

As anticipated, the difference in effects on Black teacher salaries across these two groups of states is not coming from relatively large increases in revenue to higher Black share counties in reinforcing states; instead, it's about how the additional revenue was distributed. While counties with higher Black representation experienced larger increases in state revenue after the campaign was launched and minimum salary schedules changed, those changes are statistically indistinguishable across reinforcing and resistant states (see Appendix Figure 8 and Appendix Table 6). There were no appreciable relative changes in local revenue in these counties in either group of states or in the difference, though these estimates are noisier.

V.   School Resources and Educational Attainment

Did increases in Black teacher salaries raise the educational attainment of Black children? To address this question, we begin with an analysis of enrollment/12-year schooling completion rates of 18- to 19-year-olds in the 1940 and 1960 Censuses. We then supplement these findings with an exploration of school continuation rates constructed from grade-specific enrollment data observed for four of the six states in our main analysis.

V.A.   Estimates from the Census

Figure 6 plots, against Black enrollment share, 1940 to 1960 changes in enrollment/12-year schooling completion rates of Black 18- and 19-year-olds and in log real Black teacher

salaries, the latter averaged across the years when the cohort would have been high school age.

Panel A echoes the patterns of resource allocation and change already shown in the annual data:

Black teacher salaries on average increased more the higher a county's Black enrollment share,

but only in reinforcing states. Panel B shows that this relatively large gain in Black teacher

salaries was not accompanied by a relatively large gain in Black enrollment/12-year completion

rates.[30] In other words, there does not appear to be a relationship between Black teacher salaries

and Black high school completion.

We formalize this using an instrumental variables approach, where the first-stage model

relates average log Black teacher salaries for cohort h observed in year t, $\bar{x}^B_{c(s),h(t)}$, to

interactions between baseline Black share and an indicator for 1960, $d^{1960}_t = 1(t = 1960)$, and

between that variable and the reinforcing state indicator, T_s:

$$(3) \qquad \bar{x}^B_{c(s),h(t)} = \delta_{c(s)} + \gamma_{s,h(t)} + (\pi + \tilde{\pi}T_s)d^{1960}_t B^0_{c(s)} + v^B_{c(s),h(t)}$$

Mirroring (2), this model includes county fixed effects ($\delta_{c(s)}$), state-by-cohort fixed effects

($\gamma_{s,h(t)}$), and time-varying effects of baseline Black enrollment shares that vary across

reinforcing and resistant states. We use the triple interaction, $d^{1960}_t B^0_{c(s)} T_s$, as the excluded

instrument in estimating the following with two-stage least squares (TSLS):

$$(4) \qquad y^B_{c(s),h(t)} = \tau_{c(s)} + \mu_{s,h(t)} + \beta_1 \bar{x}^B_{c(s),h(t)} + \beta_2 d^{1960}_t B^0_{c(s)} + \varepsilon^B_{c(s),h(t)},$$

where $y^B_{c(s),h(t)}$ is the Black enrollment/12-year schooling completion rate in county c for cohort

h. This model thus includes a direct time-varying effect of Black enrollment share, $d^{1960}_t B^0_{c(s)}$.

Table 4 presents the estimates. Instead of going directly to this IV approach, we build it

up from separate regressions in the reinforcing and resistant states, to parallel Figure 6. The

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[30] Dot sizes represent the share of the state's population of 18- or 19-year-olds residing in that county in 1940. For 18-year-olds, salary data are averaged across 1936-37 to 1939-40 (in 1940) and 1956-57 to 1959-60 (in 1960). For 19-year-olds, the average is across 1935-36 to 1938-39 (in 1940) and 1955-56 to 1958-59 (in 1960).

coefficient on $d_t^{1960}B_{c(s)}^0$ in predicting Black average teacher salaries (column 1) is positive and statistically significant for reinforcing states (Panel A) but not for resistant states (Panel B). The difference (Panel C) is the coefficient on the instrument in model (3): 0.347 (0.152). This estimate is smaller and noisier than what we saw in the long difference (Table 3), owing to the positive though insignificant change in Black share slope for resistant states. The reduced form estimates in column 2, relating the same variables to outcomes $y_{c(s),h(t)}^B$, do not follow the same pattern. As in Figure 6 Panel B, the slope estimates on $d_t^{1960}B_{c(s)}^0$ are positive for both groups of states; enrollment/completion rates of 18- and 19-year-olds on average increased by more in counties with higher Black shares. Yet, neither slope estimate is statistically significant, and the difference in the slope estimates – the reduced form of interest – is close to zero (Panel C).

The corresponding Wald estimate, estimated by TSLS, is therefore also close to zero. The conclusion would have been different had we focused just on reinforcing states, without additional controls: as shown in column 3 of Panel A, a TSLS estimate using $d_t^{1960}B_{c(s)}^0$ as an instrument for Black average salaries implies a 1.54 percentage point increase in the Black enrollment/completion rate at ages 18-19 for every 10 log point increase in Black teacher salaries. However, this estimate is not statistically significant. Adding time-varying effects of 1940 enrollment/completion rates of both black and white 18- and 19-year-olds (Panel D), the first stage coefficient on the instrument remains large and significant, but the reduced form coefficient becomes negative and is more precisely estimated than that based on the triple-difference approach. The IV estimate is likewise more precise, but still a noisy zero.

The fourth column of Table 4 presents ordinary least squares (OLS) estimates for comparison. The sign and significance of these estimates is not consistent across samples or specifications. OLS implies a small and significantly positive effect on educational attainment in

reinforcing states (Panel A), but as with TSLS, this result goes away with controls (Panel D). In the triple difference, the OLS estimate is positive but about half as big and no longer statistically significant (Panel C). The change with the expansion of the sample appears to stem from a negative (but insignificant) relationship between Black teacher salaries and attainment in resistant states (Panel B). Changes in salary schedules like those seen in resistant states arguably would have rewarded Black teachers and students who were already doing relatively well, and so had less to gain. Notably, these estimates just use panel variation regardless of its origins, like in Card and Krueger (1992a), but within rather than across states.

Card and Krueger (1992a) did not find a significant relationship between teacher salaries and earnings and did not present estimates of the relationship between teacher salaries and years of schooling. However, their estimates focused on Black-white gaps in earnings, attainment, and resources, not Black levels of these variables. Table 5 presents estimates for the Black-white gap in enrollment/completion, using the Black-white gap in log average teacher salaries as the treatment variable. In Panel A, we consider reinforcing states only, without controls, to parallel Panel A of Table 4. In addition to a strong first-stage (column 1), there is a strong reduced-form relationship between Black enrollment share and the 1940 to 1960 change in Black-white gap in enrollment/completion (column 2).[31] The implied effect of the salary gap on the attainment gap is large: every 10 log point reduction in the Black-white gap in teacher salaries appears to generate 3.7 percentage point reduction in the Black-white gap in enrollment/12-year schooling completion. This estimate is considerably larger in magnitude than the OLS (column 4).

However, these findings do not hold up in our preferred empirical approach. While the TSLS estimates continue to exceed OLS using resistant states as a comparison group (Panel B)

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[31] Appendix Figure 9 shows scatterplots of the 1940 to 1960 changes in the Black-white log teacher salary gap and the Black-white attainment gap against baseline Black enrollment share.

or adding controls to the model for reinforcing states only (Panel C), they are smaller in magnitude (though still substantial) and no longer statistically significant. Thus, counties with higher Black shares in resistant states experienced reductions in the Black-white attainment gap as well, and the additional reduction occurring in reinforcing states is not statistically different from zero (Panel B). Consistent with the spread of high schools, controlling for time-varying effects of 1940 enrollment/12-year completion rates greatly reduces the reduced-form, TSLS, and OLS estimates for reinforcing states, too (Panel C).[32]

One difference between these approaches is that the identifying variation is correlated with changes in Black-white gaps in pupil-teacher ratios in the second approach and not the first, as described in Section IV. Controlling directly for the Black-white gap in pupil-teacher ratios does not substantively change the estimated effect of reductions in the log teacher salary gap in the model for reinforcing states only (Panel D). Moreover, unlike in Card and Krueger (1992a), the estimated relationship between the Black-white gap in (log) pupil-teacher ratios is positive – as class sizes got relatively *worse* for Black schoolchildren, their relative attainment improved. (A model with the log pupil-teacher ratio gap only yields a similar coefficient.) Perhaps we would have found a different result had we been able to use the same outcome as in Card in Krueger (1992a) – years of completed schooling later in adulthood.

Still, given the standard errors, we cannot reject that narrowing race gaps in pupil-teacher ratios or in teacher salaries gaps led to large reductions Black-white gaps in 12-year schooling completion. Contrasting the estimates in Tables 4 and 5, we see that this result comes more from

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[32] We also estimated these models using a dependent variable that keeps the same values as the original for cohorts observed in 1960 but assign cohorts observed in 1940 the population share either enrolled or with 9 or more (rather than 12 or more) years of schooling. A benefit of this variable is that it may better reflect the distribution of educational attainment in the South at this time (Card, Domnisoru, and Taylor, 2022). With this measure of schooling outcomes, our preferred approaches continue to yield noisy zeros for Black attainment but slightly more precisely estimated (but still insignificant) effects for the Black-white attainment gap. See Appendix Tables 7 and 8.

changes in white than Black completion. Educational resources available to white schools in

reinforcing states (unobserved to us) may have been reduced by increases in Black teacher

salaries, or white attainment at this time may have been particularly responsive to white teacher

pay.[33] Either way, this is an important caveat on these results.

V.B.   Estimates from Administrative Enrollment Data

The Census analysis is constrained by the measure of educational attainment available in

1960. An analysis of grade continuation and progression rates, described in Section III and

available for four of our original states, provides a useful complement. Figure 7 Panel A plots

the change in Black 6th to 9th grade continuation between 1939-40 and 1959-60 against 1939

Black enrollment share; Panel B does the same for the Black-white gap in 6th to 9th grade

continuation rates. The plots suggest a salary effect: as was the case with Black teacher salaries

(Figure 6 Panel A), counties with relatively high Black enrollment shares experienced relatively

large improvements in (relative) Black continuation on to high school from 6th grade.[34]

Table 6 formalizes these observations, applying the same approach as we did to the

Census data.[35] In levels (column 1), the reduced form estimates for reinforcing states are

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[33] Black school spending may have already been as low as it could be without inviting legal scrutiny or a loss in
Black labor. Consistent with this idea, Baker (2019a) shows that exogenous shocks to school budgets in early 20th
century Georgia reduced white but not Black school spending. In turn, these shocks lowered white educational
attainment and earnings in adulthood (Baker, 2019b).

[34] Appendix Figure 10 Panels A and B give event-study estimates for Black and the Black-white gap in 6th to 9th
grade continuation in the annual data. We assign event year based on the year in which 9th enrollment is observed;
the cohort observed in event year 0 would have thus had one year of exposure to NAACP litigation (the year the
case was filed), that observed in event year 1 would have had two years of exposure, and so on. The first cohort
fully exposed over grades six to nine is thus observed in event year 4, and exposure over those grades is constant
thereafter. Using the share of 6th to 9th grade years exposed as an instrument, we arrive at smaller estimates of the
impact of Black (and Black-white gaps in) average teacher salaries on continuation rates. However, we think that
this specification is flawed due to the potential positive effect of Black teacher salaries on Black progression to 6th
grade. For this reason, we prefer long difference. Appendix Figure 10 Panels C and D give the event-study
estimates for 1st to 2nd grade progression rates based on the annual data. In this case, using the share of 1st and 2nd
grade years exposed to NAACP litigation as in instrument, we arrive at similar estimates of the impact of Black (and
Black-white gaps in) average teacher salaries on progression rates.

[35] To economize on space, we do not directly report the first stage coefficients on the instrument. These estimates
are very similar to what we found in the Census analysis.

statistically significant and actually larger in magnitude with controls (Panels A, C, and D); the triple-difference approach, using resistant states as a comparison group, also yields a similarly-sized but less precise reduced form coefficient on the instrument (Panel C). The pattern of effects for the Black-white difference is also broadly similar, though controls take a more substantial bite out of coefficient magnitudes for reinforcing states (column 4).

The implied effects, based on the TSLS estimates, are substantial: for every 10 log-point reduction in the Black-white gap in average teacher salaries, for example, the gap in high school continuation fell by an estimated 3.7 to 5 percentage points. Given that the salary gap fell by nearly 60 log points in reinforcing states over the 1940s and 1950s (Table 1 Panel A), the TSLS estimates thus imply that Black relative salary improvements can fully explain the relative improvement in Black high school continuation over the period (Table 2 Panel C). Alternatively, for the average county in a reinforcing state (with a Black enrollment share of 31.3 percent), the reduced-form estimates imply a 6.8 to 7.6 percentage point reduction in the Black-white gap in high school continuation – between 37% and 46% of the observed closure in the gap.

While there is no visual evidence of an impact of teacher salaries on Black progression from 1st to 2nd grade (Figure 7 Panel C), there is such evidence for the Black-white gap in this measure (Figure 7 Panel D). This once again suggests that white children were negatively affected by teacher salary equalization on some margins of attainment, possibly due to a decline in unobserved school resources for white children needed for school districts to meet new minimum salary schedules. Table 7 shows that the effect sizes here are substantial as well.

Taken together, the estimates imply that relative gains in Black teacher salaries during the 1940s and 1950s reduced racial inequality in educational attainment on some margins more than others. These effects may have been apparent in years of completed schooling, but this is not an

outcome at our disposal. For some outcomes, racial inequality also fell without necessarily improving Black attainment; instead, white attainment declined in relative terms.

VI.   Conclusion

Rapid increases in educational expenditure occurred in the South starting in the 1940s, when the salaries of Black teachers were leveled up to whites'. Our first goal in this paper was to examine the contribution of the NAACP's teacher salary equalization campaign to this convergence, using newly digitized county panel data. The second was to use the results of this analysis to revisit the pioneering work of Card and Krueger (1992a) on school quality and educational attainment using county panel data and a novel research design.

We find that the effects of the NAACP's campaign were heterogeneous, dependent on subsequent state policy. In states that followed successful NAACP lawsuits by introducing universal minimum salary schedules based on criteria like experience and education, the relatively large wage penalty historically suffered by Black teachers in school districts with higher Black enrollment shares disappeared by the mid-1950s. That penalty however remained in states that instead followed NAACP litigation by adopting salary schedules incorporating a standardized test, the NTE, as a measure of teaching efficacy. By demonstrating that the campaign did not universally raise salaries and may have had limited positive effects on other resources, like pupil-teacher ratios and term lengths, we offer a more nuanced interpretation of the NAACP's efforts than Donohue, Heckman, and Todd (2002). Like Card, Domnisoru, and Taylor, 2022), we also show the importance of salary schedules to teacher pay during this era.

We then estimate the effect of teacher pay on educational attainment exploiting variation in Black salary gains over time across counties with different Black enrollment shares, and across states by whether later minimum salary schedules reinforced or resisted court rulings

favorable to the NAACP. Point estimates based on data from the 1940 and 1960 Censuses suggest a modest decrease in the Black-white 12-year completion gap, but no impact on Black completion. However, these estimates are noisier than those for grade progression and continuation, based on administrative data.   While Black teacher pay raises did not contribute to improvements in early grade progression of Black children in the 1940s and 1950s, they did lower the Black-white gap in progression from 1st to 2nd grade. They also encouraged continuation to high school of the select group of Black children making it to 6th grade. Collectively, these findings suggest that higher Black teacher salaries raised Black schooling attainment and reduced Black-white attainment gaps on some margins, but not others.

The implications of this historical episode for the human capital accumulation of the southern Black population are nevertheless broader than what we have documented here. At base, the Black teacher salary increases prompted by the NAACP campaign represented a massive transfer to individuals of one race working in one occupation in one region of the country – all over a short period of time. This would have exogenously shocked the resources available in some households, possibly affecting children's human capital accumulation outside of school. It would have also affected the balance of bargaining power within some households and changed incentives to pursue higher education among potential future teachers. Future research might consider these issues.

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Figure 1. Relationship between Black Enrollment Share and Per-Pupil School Spending and Revenue, 1939-40
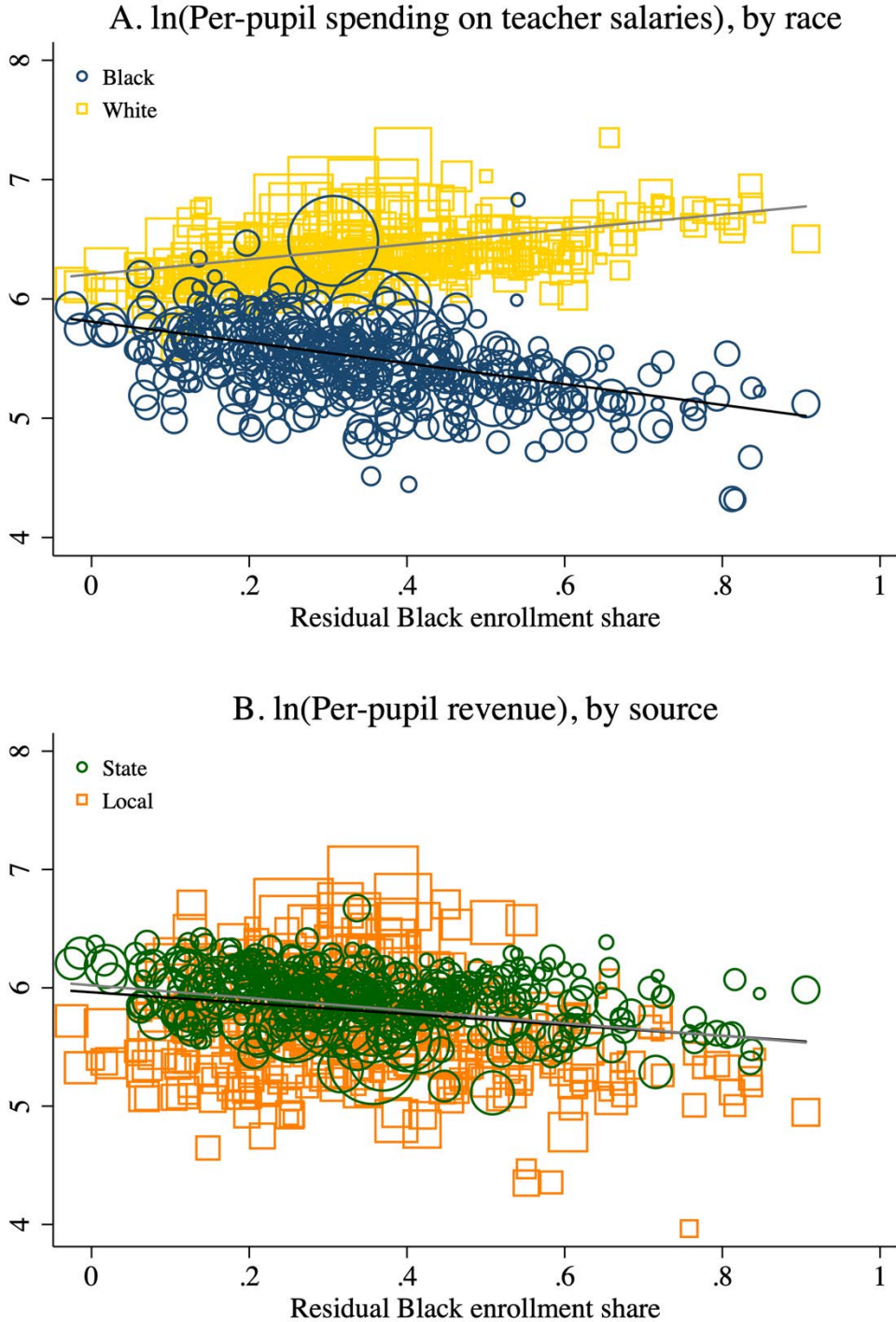
A. ln(Per-pupil spending on teacher salaries), by race

B. ln(Per-pupil revenue), by source

Source: County-level data are from state administrative reports of six former Confederate states: Alabama, Florida, Louisiana, South Carolina, Tennessee, and Virginia. See Online Appendix C.

Note: The figure plots residual per-pupil spending on teacher salaries by race (Panel A) and residual per-pupil revenue by source (Panel B) against residual 1939-40 Black enrollment share, where the residuals are from regressions on state fixed effects weighted by the county share of 1939-40 total state public school enrollment. Dot sizes represent these weights, and the x- and y-axes are rescaled to reflect (weighted) mean values of the variables.

Figure 2. Filing Year of 1st NAACP Teacher Salary Equalization Case
and Number of Cases, by State: Southern and Border Region
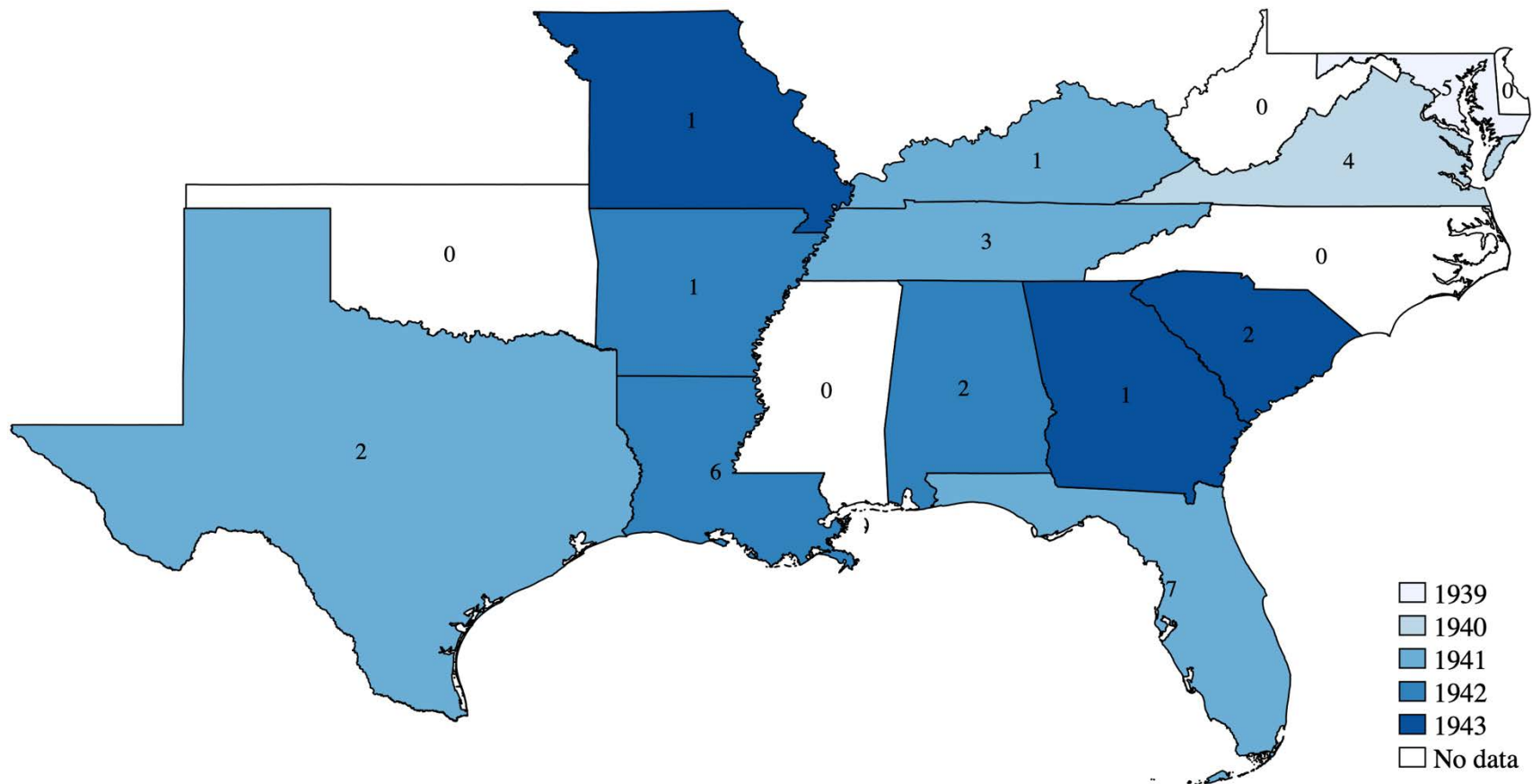
Source: Marshall (1947), Murray (1949).
Note: Case counts include cases brought with the assistance of the NAACP in state or federal court, regardless of their disposition. The first successful case is the first case successfully litigated in a federal, not state, court. See Appendix Table 1 for more details.

Figure 3. Trends in the Relationship between Black Enrollment Share and Average Teacher Salaries by Race
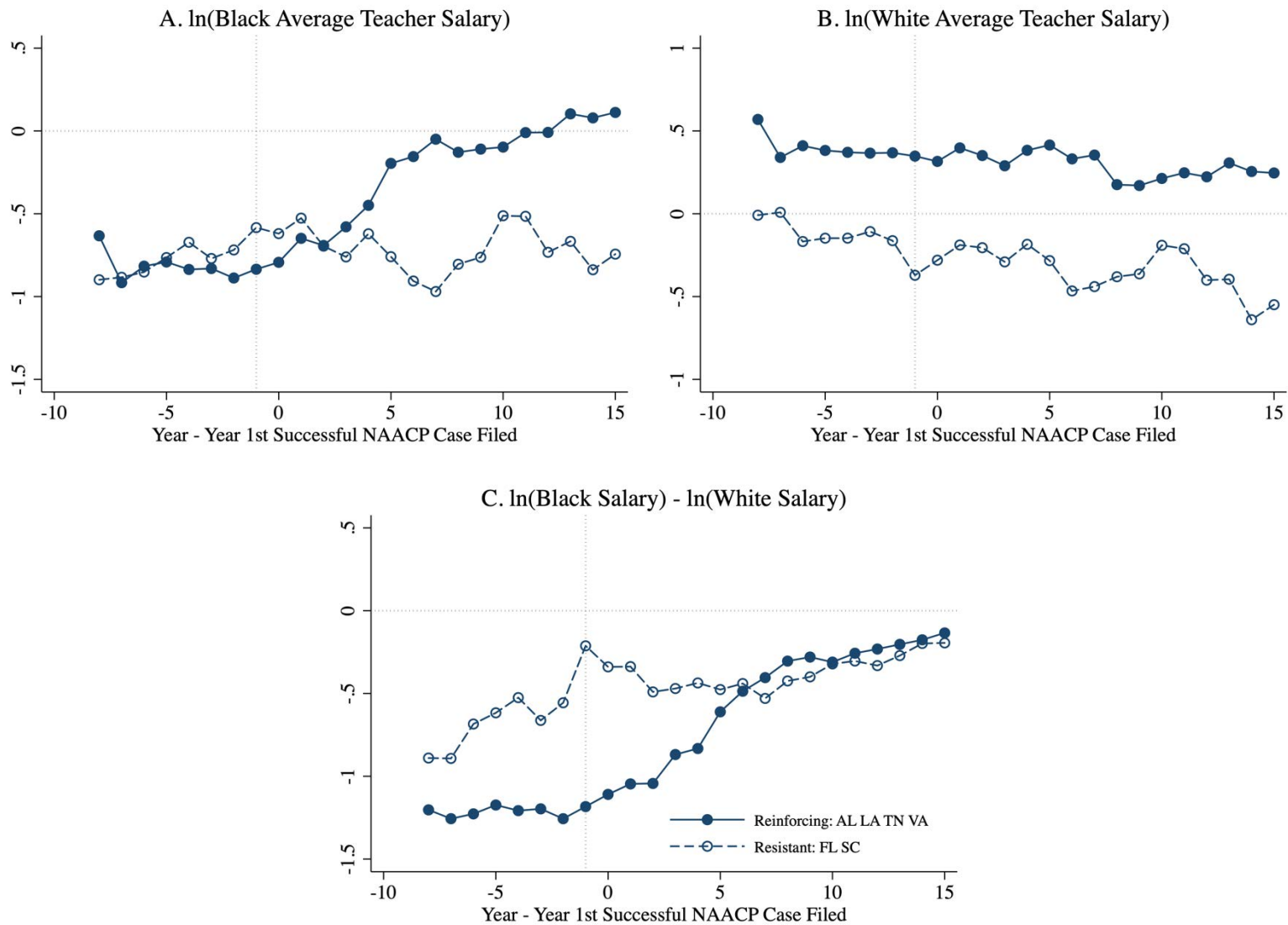
A. ln(Black Average Teacher Salary)

B. ln(White Average Teacher Salary)

C. ln(Black Salary) - ln(White Salary)

Reinforcing: AL LA TN VA
Resistant: FL SC

Source: County-level data are from state administrative reports of six former Confederate states (AL, FL, LA, SC, TN, and VA). See Online Appendix C.
Note: The figures plot the slope on 1939-40 Black enrollment share from a bivariate regression with the dependent variable stated. The unit of observation is a county, and regressions are weighted by the county share of 1939-40 total state public school enrollment.

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Figure 4. Event-Study Estimates for Average Teacher Salaries by Race, by State Reaction to NAACP Litigation
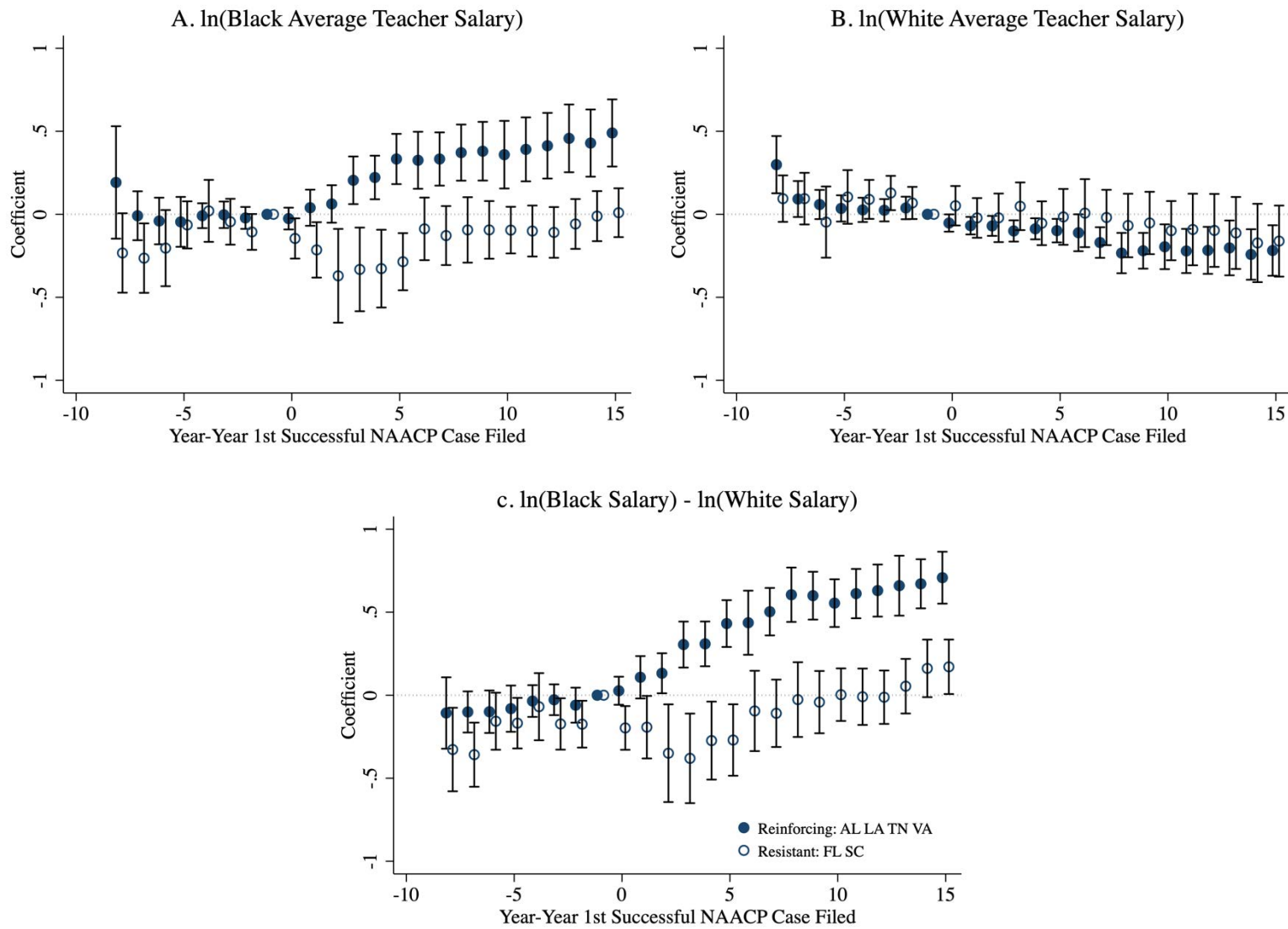
Source: County-level data are from state administrative reports of six former Confederate states (AL, FL, LA, SC, TN, and VA). See Online Appendix C.
Note: Dots represent estimates of the event-study coefficients from model (1); capped vertical lines represent 95% confidence intervals. Standard errors are clustered on county. The unit of observation is a county, and regressions are weighted by the county share of 1939-40 total state public school enrollment.

Figure 5. Difference in Event-Study Estimates
for Average Teacher Salaries:
Reinforcing versus Resistant States
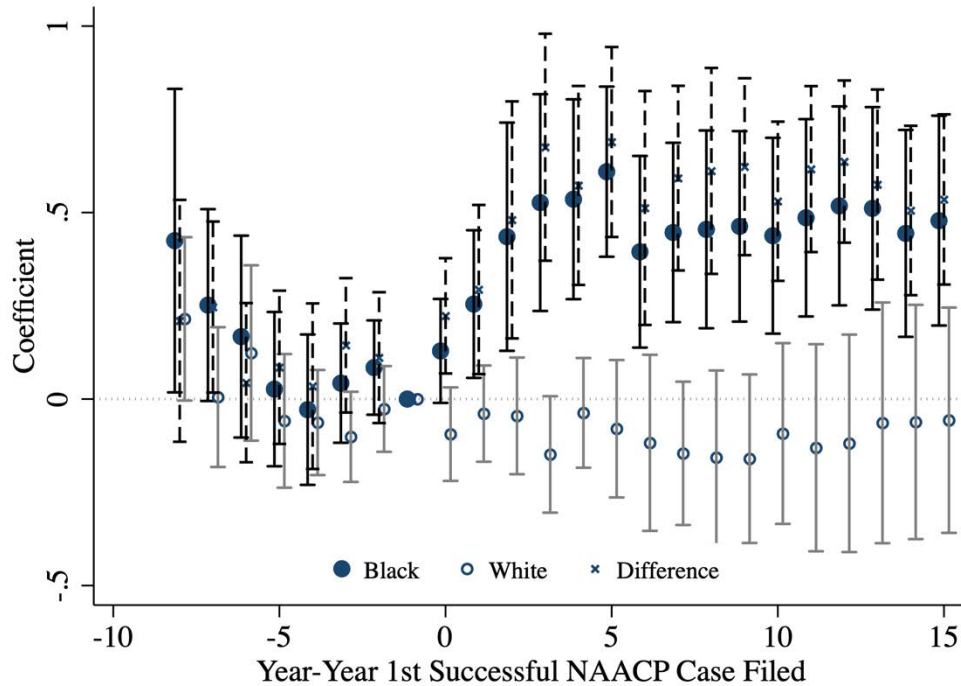
Source: County-level data are from state administrative reports of six former Confederate states (AL, FL, LA, SC, TN, and VA). See Online Appendix C.

Note: Dots represent estimates of the difference in event-study coefficients from model (2); capped vertical lines represent 95% confidence intervals. Standard errors are clustered on county. The unit of observation is a county, and regressions are weighted by the county share of 1939-40 total state public school enrollment.

Figure 6. Relationship between Black Enrollment Share and 1940 to 1960 Changes in Black Teacher Salaries and Attainment

A. Change in ln(Black average teacher salary)*

B. Change in Black share enrolled/completed HS
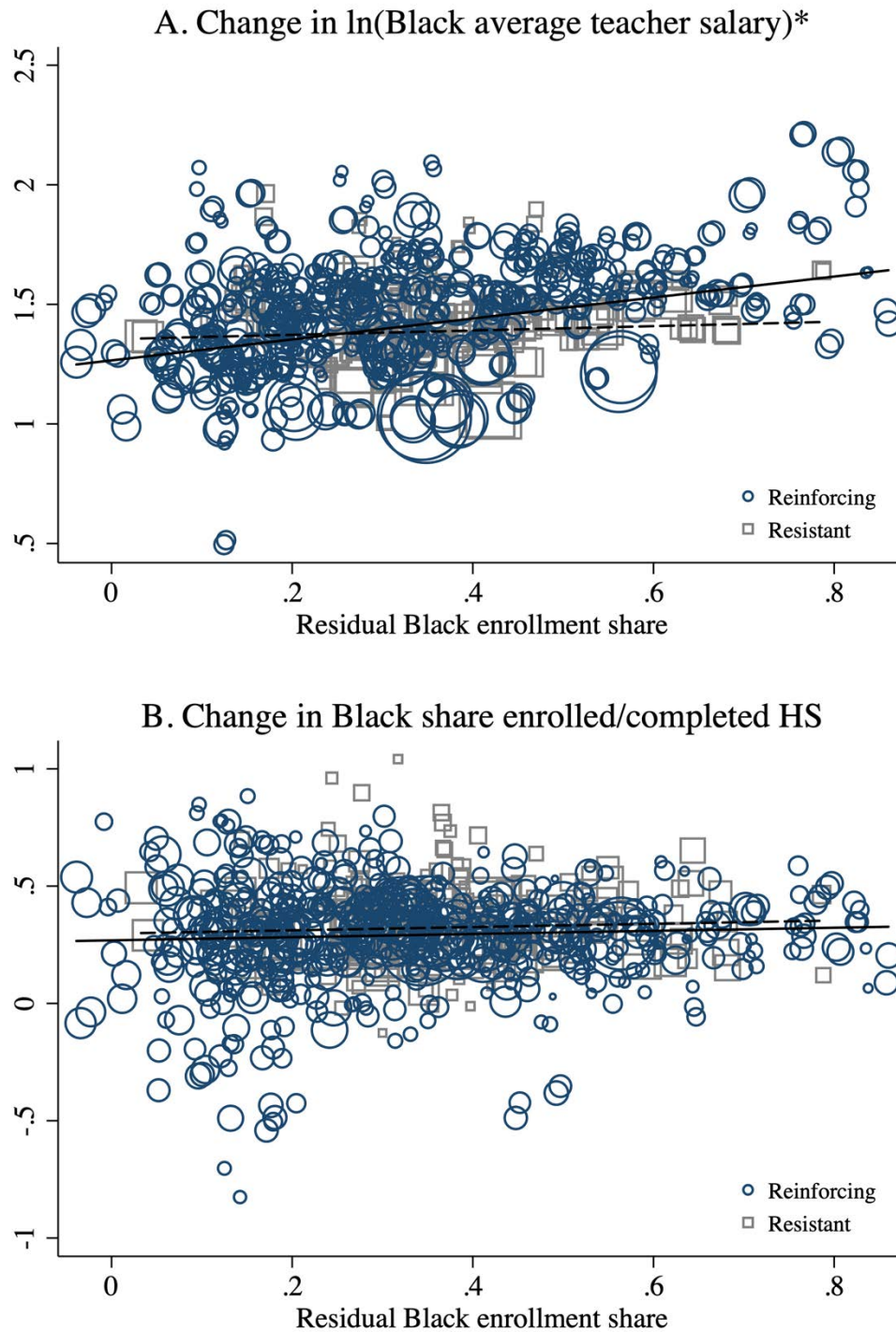
Source: County-level data on average teacher salaries from state administrative reports (Panel A) and enrollment/12-year schooling completion from the 1940 and 1960 Censuses. See Online Appendix C.
Note: The figure plots 1940 to 1960 changes in residual Black teacher salaries (Panel A) and residual Black enrollment/high school completion (Panel B) against residual 1939-40 Black enrollment share. The unit of observation is a county-by-age (18 or 19). Residuals are from regressions on state-by-age fixed effects weighted by the county share of 1940 total state population. Dot sizes represent these weights, and the x- and y-axes are rescaled to reflect (weighted) mean values of the variables. * Average Black teacher salary taken over the four years the cohort would have been high school age.

Figure 7. Relationship between Black Enrollment Share and 1939-40 to 1959-60 Changes in Grade Progression Rates
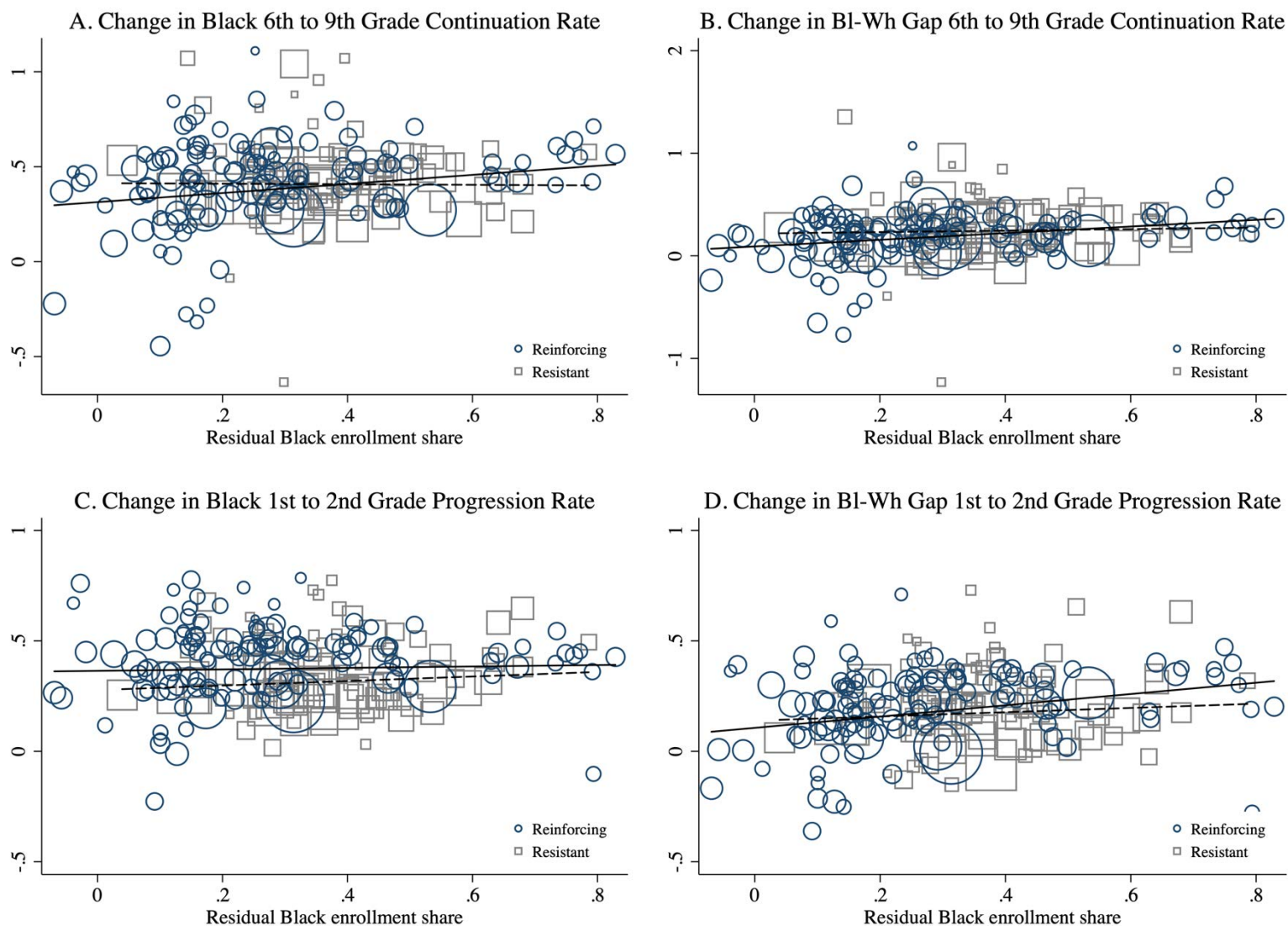
Source: County-level data on enrollment by grade from state administrative data. See Online Appendix C.
Note: The figure plots 1940 to 1960 changes in residual Black and Black-white difference in 6th to 9th grade continuation rates (Panels A and B) and Black and Black-white difference in 1st to 2nd grade progression rates (Panels C and D) against residual 1939-40 Black enrollment share. The unit of observation is a county. Residuals are from regressions on state fixed effects weighted by the county share of 1939-40 total state public school enrollment. Dot sizes represent these weights, and the x- and y-axes are rescaled to reflect (weighted) mean values of the variables.

Table 1. School Resources and Revenue Before and After NAACP Litigation: Six Southern States

	Mean [s.d.]				Coef. (s.e.) on 1939-40 Black Share in Pre Period*	
	1 to 5 Years Before		10 to 14 Years After			Reinforcing -
	Reinforcing	Resistant	Reinforcing	Resistant	Reinforcing	Resistant
Average teacher salary						
Black	10,253	9,170	28,884	28,888	-3,972	-1,311
	[4,844]	[2,281]	[5,620]	[5,669]	(1,198)	(1,680)
White	17,915	18,708	29,534	31,005	6,189	5,564
	[5,583]	[3,708]	[5,770]	[4,166]	(2,273)	(3,246)
Difference (ln)	-0.61	-0.72	-0.02	-0.08	-0.85	-0.51
	[0.35]	[.1622]	[0.11]	[0.09]	(0.08)	(0.09)
Pupil-teacher ratio						
Black	39.0	36.0	30.8	30.7	18.5	4.2
	[9.1]	[5.7]	[5.4]	[3.4]	(4.0)	(5.4)
White	30.1	29.0	27.6	28.6	-10.9	-0.9
	[5.0]	[3.0]	[3.6]	[2.7]	(1.7)	(2.5)
Difference (ln)	0.25	0.21	0.10	0.07	0.88	0.12
	[0.27]	[0.19]	[0.21]	[0.16]	(0.05)	(0.10)
Per-pupil salary exp.						
Black	279	261	964	960	-254	-98
	[154]	[74]	[239]	[245]	(36)	(43)
White	616	645	1,095	1,089	410	150
	[231]	[111]	[298]	[131]	(53)	(84)
Difference (ln)	-0.86	-0.93	-0.12	-0.15	-1.73	-0.63
	[0.55]	[0.29]	[0.26]	[0.22]	(0.10)	(0.14)
Term length						
Black	155	158	176	180	-20	6
	[17]	[13]	[4]	[0.4]	(7)	(10)
White	168	173	177	180	16	11
	[12]	[6]	[2]	[0.1]	(3)	(5)
Difference	-13	-15	-0.3	-0.1	-36	-5
	[17]	[14]	[4]	[0.4]	(6)	(7)
Per-pupil revenue						
State	330	437	953	975	-188	-52
	[176]	[129]	[447]	[209]	(27)	(52)
Local	433	326	555	582	28	254
	[267]	[141]	[385]	[379]	(119)	(156)
Observations	1415	465	1415	465	1415	1880
Counties	283	93	283	93	283	376

Notes: Standard deviations in square brackets; standard errors in parentheses. * Regression includes state fixed effects. Weighted by county share of 1939-40 state public school enrollment. Reinforcing states include AL, LA, TN ,and VA, and resistant states include FL and SC.

Table 2. School Enrollment and High School Completion Before NAACP Litigation: Six Southern States

| | Mean [s.d.] | | | | Coef. (s.e.) on 1939-40 Black Share in Pre Period* | |
| | 1939-40 | | 1959-60 | | | Reinforcing - |
	Reinforcing	Resistant	Reinforcing	Resistant	Reinforcing	Resistant
A. Age 19						
Black	0.23	0.20	0.52	0.47	-0.13	-0.10
	[0.13]	[0.06]	[0.18]	[0.12]	(0.04)	(0.05)
White	0.47	0.50	0.65	0.65	0.36	0.04
	[0.14]	[0.10]	[0.13]	[0.10]	(0.06)	(0.09)
Difference	-0.24	-0.30	-0.13	-0.18	-0.49	-0.14
	[0.14]	[0.10]	[0.19]	[0.13]	(0.06)	(0.08)
B. Age 18						
Black	0.30	0.26	0.61	0.57	-0.09	-0.07
	[0.13]	[0.07]	[0.16]	[0.11]	(0.04)	(0.06)
White	0.51	0.54	0.70	0.68	0.32	0.04
	[0.13]	[0.09]	[0.10]	[0.09]	(0.05)	(0.08)
Difference	-0.21	-0.28	-0.09	-0.11	-0.41	-0.11
	[0.14]	[0.10]	[0.18]	[0.14]	(0.05)	(0.08)
Observations	283	93	283	93	283	376
C. 6th to 9th Grade Progression						
Black	0.49	0.44	0.83	0.83	-0.32	-0.18
	[0.23]	[0.16]	[0.14]	[0.13]	(0.10)	(0.13)
White	0.71	0.79	0.88	0.94	0.17	0.03
	[0.11]	[0.10]	[0.077]	[0.13]	(0.06)	(0.09)
Difference	-0.22	-0.36	-0.05	-0.11	-0.49	-0.21
	[0.23]	[0.15]	[0.14]	[0.16]	(0.08)	(0.13)
D. 1st to 2nd Grade Progression						
Black	0.53	0.59	0.86	0.88	-0.06	0.18
	[0.16]	[0.14]	[0.13]	[0.079]	(0.09)	(0.12)
White	0.76	0.80	0.94	0.95	0.31	0.28
	[0.13]	[0.10]	[0.057]	[0.055]	(0.07)	(0.09)
Difference	-0.23	-0.21	-0.09	-0.07	-0.38	-0.10
	[0.19]	[0.14]	[0.13]	[0.078]	(0.06)	(0.12)
Observations	119	93	119	93	119	212

Notes: Standard deviations in square brackets; standard errors in parentheses. * Regression includes state fixed effects. Weighted by county share of 1940 state population in age group (Panels A and B) or county share of 1939-40 state public school enrollment (Panels C and D). Reinforcing states include AL, LA, TN, and VA, and resistant states include FL and SC. States in Panels C and D limited to AL, TN, FL, and SC.

Table 3. NAACP Litigation, State Policy, and School Resources by Race: Long Difference Estimates

	Dependent variable is natural log of:			
	Average Teacher Salary	Pupil-Teacher Ratio	Term Length (Days)	Per-pupil Salary Spending
	(1)	(2)	(3)	(4)
A. Black				
Reinforcing states:	0.426	-0.180	0.117	0.606
AL, LA, TN, VA	(0.101)	(0.066)	(0.049)	(0.100)
Resistant states:	-0.036	-0.172	0.174	0.136
FL, SC	(0.076)	(0.086)	(0.044)	(0.091)
Difference	0.462	-0.009	-0.057	0.470
	(0.126)	(0.108)	(0.066)	(0.135)
B. White				
Reinforcing states:	-0.240	0.176	-0.106	-0.416
AL, LA, TN, VA	(0.086)	(0.036)	(0.019)	(0.085)
Resistant states:	-0.193	0.063	-0.029	-0.255
FL, SC	(0.089)	(0.053)	(0.019)	(0.086)
Difference	-0.048	0.113	-0.077	-0.161
	(0.123)	(0.064)	(0.027)	(0.120)
C. Black - White Difference				
Reinforcing states:	0.666	-0.356	0.222	1.023
AL, LA, TN, VA	(0.073)	(0.063)	(0.043)	(0.096)
Resistant states:	0.157	-0.235	0.203	0.391
FL, SC	(0.072)	(0.085)	(0.036)	(0.108)
Difference	0.510	-0.122	0.019	0.631
	(0.102)	(0.105)	(0.056)	(0.144)
D. Sample Sizes				
Reinforcing States	8,377	8,377	4,912	8,188
Resistant States	2,664	2,664	2,349	2,412

Notes: Average salaries and per-pupil spending on teacher salaries converted to real 2018 dollars. Underlying regression includes interactions between county fraction black in 1939-40 and dummies for 5-year bins relative to year of first successful NAACP lawsuit (Appendix Table 1); the interaction with the dummy for event years -5 to -1 is omitted, and the coefficient on the interaction with 10 to 14 years after the lawsuit is shown in the table. All regressions include state by year and county fixed effects and are weighted by the county share in 1939-40 state public school enrollment. Standard errors clustered on county.

Table 4. Impacts of Black Teacher Salaries on Black Teen School Enrollment/High School Completion

Dep. variable:	ln(Black Average Teacher Salary)	Share of Black 18-19 year olds Enrolled or with 12+ Years Completed School		
	First stage	Reduced form	TSLS	OLS
	(1)	(2)	(3)	(4)
A. Reinforcing States Only (N=1,128)				
Fraction Black, 1939 x Year = 1960	0.438	0.067		
	(0.113)	(0.052)		
R^2	0.975	0.758		
ln(Black Average Teacher Salary)			0.154	0.059
			(0.121)	(0.031)
Root MSE			0.109	0.126
B. Resistant States Only (N=372)				
Fraction Black, 1939 x Year = 1960	0.091	0.069		
	(0.102)	(0.084)		
R^2	0.99	0.852		
ln(Black Average Teacher Salary)			no f.s.	-0.081
				(0.071)
Root MSE			-	0.0795
C. Resistant States as Comparison Group (N=1,500)				
Fraction Black, 1939 x Year = 1960 x Reinforcing (=1)	0.347	-0.002		
	(0.152)	(0.098)		
R^2	0.979	0.779		
ln(Black Average Teacher Salary)			-0.006	0.032
			(0.282)	(0.030)
Root MSE			0.099	0.115
D. Panel A + Additional Controls (N=1,128)				
Fraction Black, 1939 x Year = 1960	0.68	-0.045		
	(0.103)	(0.059)		
R^2	0.978	0.794		
ln(Black Average Teacher Salary)			-0.067	-0.025
			(0.086)	(0.033)
Root MSE			0.100	0.116

Notes: Salaries converted to real 2018 dollars. Regressions include controls for state by year and county fixed effects and are weighted by the county share of 1940 state population in the relevant age group. Standard errors are clustered on county. The "additional controls" (Panel D) are interactions of a 1960 dummy with each of the 1940 values of black and white share 18- and share 19-year-olds with 12+ years school (four controls). Reinforcing states are AL, LA, TN, and VA, and resistant states are FL and SC.

**Table 5. Impacts of Black-White Teacher Salary Gaps on
Black-White Gaps in School Enrollment/High School Completion**

Dep. variable:	Difference in ln(Teacher Salary)	Difference in Share of 18-19 year olds Enrolled or with 12+ Years Completed School		
	First stage	Reduced form	TSLS	OLS
	(1)	(2)	(3)	(4)
A. Reinforcing States (N=1,128)				
Fraction Black, 1939 x Year = 1960	0.755	0.283		
	(0.077)	(0.053)		
R^2	0.95	0.614		
Difference in ln(Teacher Salary)			0.374	0.174
			(0.077)	(0.048)
Root MSE			0.116	0.131
B. Resistant States as Comparison Group (N=1,500)				
Fraction Black, 1939 x Year = 1960	0.441	0.086		
x Reinforcing (=1)	(0.111)	(0.103)		
R^2	0.958	0.635		
Difference in ln(Teacher Salary)			0.194	0.044
			(0.236)	(0.047)
Root MSE			0.105	0.121
C. Reinforcing States + Additional Controls (N=1,128)				
Fraction Black, 1939 x Year = 1960	0.671	0.071		
	(0.090)	(0.061)		
R^2	0.953	0.632		
Difference in ln(Teacher Salary)			0.106	0.048
			(0.092)	(0.043)
Root MSE			0.110	0.128
D. Panel C + Difference in Pupil-Teacher Ratio (N=1,128)				
Difference in ln(PT Ratio)	0.098	0.024	0.013	0.012
	(0.069)	(0.056)	(0.053)	(0.052)
Fraction Black, 1939 x Year = 1960	0.705	0.080		
	(0.094)	(0.065)		
R^2	0.953	0.633		
Difference in ln(Teacher Salary)			0.113	0.048
			(0.094)	(0.043)
Root MSE			0.110	0.128

Notes: Salaries converted to real 2018 dollars. Regressions include controls for state by year and county fixed effects and are weighted by the county share of 1940 state population in the relevant age group. Standard errors are clustered on county. The "additional controls" (Panels C and D) are interactions of a 1960 dummy with each of the 1940 values of black and white share 18- and share 19-year-olds with 12+ years school (four controls). Reinforcing states are AL, LA, TN, and VA, and resistant states are FL and SC.

Table 6. Impacts of Teacher Salaries on Progression to High School

Dep. variable:	Black 6th to 9th Grade Progression			Black-White Difference in 6th to 9th Grade Progression		
	Reduced form	TSLS	OLS	Reduced form	TSLS	OLS
	(1)	(2)	(3)	(4)	(5)	(6)
A. Reinforcing States (N=238)						
Fraction Black, 1939 x Year = 1959	0.239			0.325		
	(0.109)			(0.091)		
ln(Teach Sal): Black (cols 1-3) /		0.575	0.237		0.420	0.107
Black-White Diff in (cols 4-6)		(0.273)	(0.074)		(0.157)	(0.075)
Root MSE	*0.142*	*0.106*	*0.139*	*0.140*	*0.112*	*0.145*
First-Stage F-stat		*8.78*			*23.60*	
B. Resistant States as Comparison Group (N=424)						
Fraction Black, 1939 x Year = 1959	0.254			0.253		
x Reinforcing (=1)	(0.156)			(0.155)		
ln(Teach Sal): Black (cols 1-3) /		0.798	0.166		0.498	0.097
Black-White Diff in (cols 4-6)		(0.594)	(0.069)		(0.354)	(0.074)
Root MSE	*0.125*	*0.104*	*0.123*	*0.141*	*0.107*	*0.141*
First-Stage F-stat		*3.93*			*7.89*	
C. Reinforcing States + Additional Controls (N=238)						
Fraction Black, 1939 x Year = 1959	0.344			0.202		
	(0.136)			(0.125)		
ln(Teach Sal): Black (cols 1-3) /		0.521	0.209		0.375	0.016
Black-White Diff in (cols 4-6)		(0.228)	(0.087)		(0.246)	(0.067)
Root MSE	*0.141*	*0.104*	*0.0969*	*0.139*	*0.109*	*0.0975*
First-Stage F-stat		*12.58*			*10.65*	

Notes: Salary in real 2018 dollars. Regressions include controls for state by year and county fixed effects and are weighted by the county share of 1939-40 state public school enrollment. Standard errors are clustered on county. The "additional controls" (Panel C) are interactions of a 1960 dummy with each of the 1940 values of black and white share 18- and share 19-year-olds with 12+ years school (four controls). Reinforcing states are AL and TN, and resistant states are FL and SC.

Table 7. Impacts of Teacher Salaries on Progression to Second Grade

Dep. variable:	Black 1st to 2nd Grade Progression			Black-White Difference in 1st to 2nd Grade Progression		
	Reduced form	TSLS	OLS	Reduced form	TSLS	OLS
	(1)	(2)	(3)	(4)	(5)	(6)
A. Reinforcing States (N=238)						
Fraction Black, 1939 x Year = 1959	0.019			0.240		
	(0.076)			(0.077)		
ln(Teach Sal): Black (cols 1-3) /		0.044	0.123		0.310	0.078
Black-White Diff in (cols 4-6)		(0.177)	(0.070)		(0.110)	(0.048)
Root MSE	*0.118*	*0.0816*	*0.116*	*0.122*	*0.0946*	*0.126*
First-Stage F-stat		*8.78*			*23.60*	
B. Resistant States as Comparison Group (N=424)						
Fraction Black, 1939 x Year = 1959	-0.084			0.144		
x Reinforcing (=1)	(0.116)			(0.130)		
ln(Teach Sal): Black (cols 1-3) /		-0.261	0.116		0.290	-0.015
Black-White Diff in (cols 4-6)		(0.414)	(0.062)		(0.280)	(0.054)
Root MSE	*0.101*	*0.0781*	*0.0999*	*0.110*	*0.0835*	*0.110*
First-Stage F-stat		*3.93*			*7.89*	
C. Reinforcing States + Additional Controls (N=238)						
Fraction Black, 1939 x Year = 1959	0.298			0.334		
	(0.103)			(0.132)		
ln(Teach Sal): Black (cols 1-3) /		0.468	0.137		0.616	0.058
Black-White Diff in (cols 4-6)		(0.192)	(0.070)		(0.283)	(0.056)
Root MSE	*0.114*	*0.0885*	*0.0795*	*0.124*	*0.116*	*0.0883*
First-Stage F-stat		*12.58*			*10.65*	

Notes: Salary in real 2018 dollars. Regressions include controls for state by year and county fixed effects and are weighted by the county share of 1939-40 state public school enrollment. Standard errors are clustered on county. The "additional controls" (Panel C) are interactions of a 1960 dummy with each of the 1940 values of black and white share 18- and share 19-year-olds with 12+ years school (four controls). Reinforcing states are AL and TN, and resistant states are FL and SC.