Financial Incentives and the
Desegregation of Southern Public Schools[*]

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Abstract

This paper examines whether the financial incentives put in place by two pieces of federal legislation—the *Civil Rights Act of 1964* and the *Elementary and Secondary Education Act of 1965*—played a causal role in desegregating southern schools. The latter targeted a large federal education program toward the South, while the former tied the receipt of funds under this new program to nondiscrimination. Using a newly collected data set on school desegregation and school finance for the 1960s, we find that districts with relatively more to lose under federal funding allocation rules engaged in more student desegregation, were more likely to have desegregated their faculties, and were more likely to have received their federal funding by the fall of 1967. Qualitatively similar results are found for the fall of 1966. These results suggest that legislative and executive enforcement efforts—not just the courts—contributed to the desegregation of southern education.

I.   Introduction

More than a decade after the landmark 1954 Supreme Court decision in *Brown vs.*
Board of Education, the vast majority of southern school systems remained completely
segregated.[1] In the fall of 1964, only 2.25 percent of black children in the South attended
school with any whites, and in two-thirds of the region's biracial school districts, no blacks
had been admitted to white schools. Only two years later, nearly all southern school districts
had engaged in at least nominal desegregation, and the fraction of black children attending
school with whites had risen dramatically (Southern Education Reporting Service, 1967).

This paper examines whether the financial incentives put in place by two momentous
pieces of federal legislation played a causal role in these developments.   Title VI of the *Civil*
Rights Act of 1964 (CRA) authorized federal agencies to withhold financial assistance from
programs that discriminated on the basis of race. Though schools received little federal
funding in 1964, the *Elementary and Secondary Education Act of 1965* (ESEA) introduced large
grants for education that gave Title VI great leverage over southern school systems. Indeed,
in the first year of the program, almost half of all revenues under Title I—ESEA's largest
program—were directed toward the South. In the former Confederacy, the average district
in fact stood to raise per pupil expenditures by 20 percent if it made a "good faith effort" to
desegregate its schools for the first time.

Though compelling, the hypothesis that these incentives brought about an end to *de*
jure school segregation is difficult to test. The introduction of these incentives coincided
with myriad other policy developments that might have prompted school districts to
desegregate. For example, CRA granted the Justice Department greater scope to bring and

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[1] Southern states include states of the former Confederacy (Alabama, Arkansas, Florida, Georgia, Louisiana,
Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia) and Border states (Delaware,
Kentucky, Maryland, Missouri, Oklahoma, and West Virginia).

join lawsuits on behalf of black plaintiffs, strengthening the threat of litigation against segregated school systems. After passage of the *Voting Rights Act of 1965*, southern blacks might have also exerted newly won political power to change the pupil assignment policies of school boards. Thus, though suggestive (Boozer, Krueger, and Wolkon, 1992; Clotfelter, 2004; Reber, 2004), the mid-1960s trend break in school desegregation alone is not sufficient to establish a causal role of financial incentives.[2] At first pass, it is also difficult to find credible identifying variation in the magnitude of the incentives created by Title VI CRA and Title I ESEA, since funds under Title I—the largest federal program for education starting in 1965—were allocated to districts on the basis of poverty.

For this study, we have brought together a new collection of district-level data on school finance and student and faculty desegregation to test the incentives hypothesis. We also have identified a plausibly exogenous source of variation in federal funding in the Title I allocation rules: in the earliest years of the program, identical districts would have been entitled to different grants depending upon the state in which they were located. Given considerable overlap in the distributions of district-level characteristics across the nine states of the former Confederacy in our estimation sample[3], we are able to make comparisons of desegregation trends across observationally similar districts where different levels of federal funding would have been at stake. The credibility of these comparisons is bolstered by the fact that prior state spending—the key source of across-state variation in Title I funding—is not related to school desegregation prior to the program's introduction.

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[2] Data used by Boozer, Krueger, and Wolkon (1992), Clotfelter (2004), and Reber (2004) indicate a sharp reduction in school segregation in the mid-1960s. Each of these studies mentions the potential significance of financial incentives related to Title VI and the potential flow of federal revenues to school districts under Title I, but none conducts an explicit test of this hypothesis. Rosenberg (1991) shows a correlation between federal funding and school desegregation, concluding prematurely that the relationship is causal.

[3] These states are Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee.

Our analysis focuses on the period from 1964 to 1967, and our estimation sample includes nearly the universe of school districts at risk to change their behavior as a result of the threat of financial sanctions. Controlling for flexible functions of child poverty, enrollment, and prior spending, we find that by the fall of 1967, the amount of Title I funding at stake had a significant impact on the probability that a district had officially complied with Title VI. In both 1966-67 and 1967-68, we find potential Title I funding to be positively and significantly associated with the extent of student desegregation and with the probability of having desegregated faculty. Our estimates imply that a $100 increase in the amount of per pupil Title I funding at risk (in 2003 dollars) increased the percent of black students enrolled with whites students by between 7 and 11 percentage points and raised the chances of having desegregated faculty by between 6 and 8 percentage points. These results are robust to alternative specifications of the financial incentive, and their credibility as causal inferences is supported by a variety of specification checks.

These findings are interesting from both historical and contemporary policy perspectives. A substantial literature documents the role of courts in desegregating schools,[4] but the role of Congress in general and financial incentives in particular has received considerably less attention.[5] Further, the literature on court-ordered desegregation has focused on larger school districts and a later time period, generally starting in 1968 or later.

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[4] Using data collected by Welch and Light (1987) for a national sample of large school districts, Reber (2005) uses variation in the timing of implementation of major court-ordered desegregation plans to assess the effects of such plans on segregation and white enrollment, or "white flight." She concludes that court-ordered desegregation plans, largely implemented after 1968, did reduce segregation substantially. Guryan (2004) uses the variation in school desegregation induced by these plans to examine the relationship between desegregation and high school dropout rates.

[5] The role of financial incentives in desegregating other institutions has received more attention in the literature. For example, Executive Order 11246, signed in 1965, provided a similar financial incentive to Title VI CRA, but for the private sector. Under the executive order, firms could have government contracts withdrawn by the Office of Federal Contract Compliance if race remained a factor in their employment decisions. Heckman and Payner (1989) discuss the role of this financial incentive in integrating textile mills in South Carolina; the literature more generally is reviewed in Donohue and Heckman (1991). In general, this literature has not considered the possible endogeneity of the presence and size of government contracts.

As a result, little is known about the segregation experience of smaller, rural districts and earlier in the 1960s, when most districts desegregated for the first time. Our results suggest that both legislation and executive enforcement efforts—not just the courts—contributed to the desegregation of education in the South. In future work, we plan to expand the sample of districts to include additional states and to extend the analysis to later years, allowing for a more complete accounting of trends in and causes of desegregation in the 1960s and 1970s.

From the perspective of current policy, the *Civil Rights Act* was in a sense the first federal school accountability program—a predecessor to the federal *No Child Left Behind Act of 2001* (NCLB). NCLB has required states to implement accountability programs and districts to make progress towards certain goals, or else risk losing their federal support.[6] While the amount of funding at stake (relative to total spending) is smaller under NCLB than it was under CRA, the first federal attempt to change school district behavior with financial incentives is instructive. Further work is needed to understand whether districts that initially desegregated in response to the financial incentives embodied in CRA needed further interventions to remain desegregated, or whether the threat alone had a lasting impact on their behavior.

The paper is organized as follows. The next section provides further background on the changes to federal education policy in the 1960s. Section III presents a simple model of school districts' choice of levels of spending and segregation and how Title VI is expected to affect district behavior. Section IV discusses the empirical strategy; the data and construction of the key variables for the analysis are discussed in Section V. We describe how we construct the sample for analysis and present descriptive statistics in Section VI. The results are reported in Section VII. Section VIII concludes.

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[6] Kane and Staiger (2002) provide an overview of the different accountability policies states adopted in response to NCLB.

II.   Institutional Background

A.   *Federal Involvement in Education: A Brief Overview*

Passed during President Johnson's War on Poverty, ESEA was a watershed in the history of federal funding of elementary and secondary education. Title I, which targeted funding toward programs for poor, "educationally disadvantaged" children, was by far the largest program authorized under ESEA. In its first year, Title I received a $1 billion appropriation (almost $5.5 billion in 2003 dollars), nearly doubling federal expenditure on elementary and secondary education. Grants were initially distributed to districts on the basis of child poverty counts and average per-pupil spending in the state several years prior.[7] Given their relative poverty, southern districts stood to be the primary beneficiaries of program, entitled to nearly half of this first-year appropriation.

ESEA was a watershed not only because of the magnitude of its funding, but also because of the eligibility requirements it set for districts. Under Title VI of CRA (section 601):

> No person in the United States shall, on the ground of race, color, or
> national origin, be excluded from participation in, be denied the benefits of,
> or be subjected to discrimination under any program of activity receiving
> Federal financial assistance.

The precise definition of "discrimination"—and the speed at which it had to be eliminated —were matters left to the Department of Health, Education, and Welfare (HEW), as discussed below. However, Title VI compliance was widely understood to involve the elimination of segregated schools in the South. Because southern districts received little federal funding when CRA was passed, the provision received little attention from either

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[7] The state funding component of the Title I funding formula evolved over time and is the key to our identification strategy. We therefore defer a more formal discussion of Title I allocation rules to Section IV.

federal or local policymakers during 1964-65; however, ESEA was a major catalyst for change.[8]

Together, ESEA and Title VI CRA marked a dramatic shift in federal education policy. [9] Before 1965, there were few federal programs for elementary and secondary education[10]; those that existed represented on average only a small share of school revenues[11]; and the federal Office of Education (OE) had little direct oversight over how federal grants were used (Orfield, 1969). Starting in 1965, the federal share of school revenues rose considerably, and the OE became much more involved in the everyday operations of school districts, both monitoring Title VI compliance and sanctioning districts that failed to meet desegregation targets. Like the more recent federal accountability policy established under NCLB, the guidelines themselves also required greater transparency in the way that school districts operated. For example, districts were required to give public notice of their desegregation plans and to submit statistics on race-specific enrollments to the OE.

Anecdotally, the financial incentives put in place by ESEA and Title VI did change school district behavior, though not always in the intended ways. Some districts did publicly tie their decisions to desegregate to the threat of losing federal funding. For example, the

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[8] For example, more than 80 percent of southern school districts did not submit desegregation plans for review during 1964-65, and those plans the HEW did receive were for the most part "wholly inadequate" (Orfield, 1969; p. 88, 79). By contrast, the HEW was inundated with desegregation plans during the summer of 1965, after ESEA had passed, and most of these desegregation plans were approved.

[9] The financial incentives put in place by Title VI reached beyond the domain of public schools to any institution receiving federal funding. For example, in their study of infant mortality in Mississippi, Almond, Chay, and Greenstone (2003) hypothesize that Title VI, in conjunction with the enactment of Medicare (as part of the 1965 Social Security Amendments), led to the desegregation of hospitals in Mississippi in the mid-1960s. However, they do not explicitly test this hypothesis, as they are interested more in the infant health effects of desegregation, rather than why desegregation itself occurred.

[10] The largest federal programs for elementary and secondary education were the School Lunch Program, Aid to Federally Affected Areas, and programs established under the Vocational Education Act and the National Defense Education Act.

[11] For example, in 1963, the average district received only $127 per pupil (4.6 percent of its per-pupil revenue) from the federal government. By 1965, the average federal contribution to school expenditures had risen to $263 per pupil (7.9 percent of per-pupil revenue). (Figures are in 2000 dollars and are enrollment-weighted averages of state figures presented in the *Digest of Educational Statistics*.)

school board in Vernon Parish, Louisiana, "faced with a certain loss of $330,000 in federal funds or 20 percent of its … operating budget," decided to desegregate voluntarily during the 1965-66 school year (*Southern Education Report*, September-October 1965, p. 33). On the other hand, instead of desegregating, other districts—particularly in Mississippi and Louisiana—chose to forego their federal funding, raising local taxes to cover revenue shortfalls and even to increase educational expenditures to what they would have been after receipt of new funding under Title I (*Southern Education Report*, November-December 1965, p. 31).

Other school districts chose to desegregate in the mid-1960s, but for reasons besides the threat of losing federal funding. For example, school administrators in Beauregard Parish, Louisiana, claimed that the "dollar sign was not discussed at all" in their decision to desegregate; instead, the threat of litigation was salient: "Rather than face the court process… we decided we would go ahead and comply" (*Southern Education Report*, September-October, 1965, p. 33). Here, changes in federal education policy were once again likely to have been important. In particular, Title IV and Title IX of CRA gave the Justice Department the authority to bring and to join lawsuits on behalf of black plaintiffs. While the Justice Department was involved in only one school segregation-related lawsuit in 1963 and two lawsuits in 1964, it became much more active in suing southern school districts in the subsequent years.[12]

B.   *Evolution of the Title VI Compliance Guidelines and Enforcement Efforts*

Regardless of why school districts decided to desegregate in the mid-1960s, whether they were in fact in compliance with Title VI and in good standing to receive their federal funding was at the discretion of HEW. Issued in December 1964, the first Title VI

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[12] In 1965, the Justice Department was involved in 73 lawsuits related to school segregation in the Southern and Border region (U.S. Commission on Civil Rights, 1966).

regulations were vague, applying to all programs in HEW's purview. The OE translated this regulation into a series of informal "instructions" to school districts about what would constitute a "minimally acceptable plan" for school desegregation.[13] However, these first instructions for school desegregation were ineffective: not only were they issued halfway through the fiscal year to which they applied, but more than 80 percent of districts did not submit plans (Orfield, 1969, p. 88). There is furthermore no evidence that funds were cut off from any districts in this year.

The first true Title VI compliance guidelines were issued by HEW in April 1965, on the heels of ESEA. The *General Statement of Policies* provided three ways in which a southern district could be in compliance with Title VI: (1) through submission of an "Assurance of Compliance," or HEW Form 441; (2) through submission of an existing court-ordered plan for school desegregation; and (3) through submission of a "voluntary" desegregation plan. Voluntary desegregation plans were required of districts that had any semblance of a "dual or segregated school system," but were not already under court order to desegregate; for the most part, it was only acceptable for districts with student populations entirely of one race to submit HEW Form 441.

The earliest guidelines for voluntary desegregation plans were set so as not to conflict with the speed or intensity of existing court-ordered plans. Since little beyond token desegregation had been required by most existing court orders, the first acceptable voluntary plans were weak. For example, "freedom-of-choice" plans—where black students could apply for transfer to white schools—were deemed acceptable under the guidelines. Not

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[13] Desegregation plans were to be locally publicized, and assignment of students to first grade (or kindergarten, if offered) was to be done on a nonracial basis. Under so-called "freedom of choice" plans, local officials would have to pledge to uphold the decisions of blacks to attend formally all-white schools, and gerrymandering was to be prohibited under plans that used geographic rezoning for assignment of students to schools (Orfield, 1969; pp. 77).

surprisingly, nearly all districts in the Deep South that were not already under court order reportedly chose freedom-of-choice plans in 1965-66 (Bailey and Mosher, 1968; p. 154). These plans placed the burden of desegregation on blacks and, according to a report by the United States Commission on Civil Rights (1966), were rendered ineffective across the Deep South by widespread intimidation and harassment of black students and their families. Districts also reportedly abused one loophole in the guidelines, which allowed blacks to be denied access to white schools if "overcrowding" of the school would result (U.S. Commission on Civil Rights, 1966). The other form of acceptable plan discussed in the guidelines was geographic rezoning, where boundaries of school attendance areas were redrawn so that pupil assignment could be made on a nonracial basis.

Table 1 gives specifics about the rate of student and faculty desegregation required under the *General Statement of Policies* (effective as of 1965-66) and subsequent revisions to it.[14] During 1965-66, school districts were asked to make a "good faith effort" toward the goal of having every grade in the school system desegregated by 1967-68 (U.S. Department of Health Education and Welfare, April 1965; p. 4). In light of this target, districts were asked to desegregate at least four grades, though "for good cause shown" and taking "into account the steps which would be required to meet the 1967 target date," desegregation of only two grades would be acceptable (U.S. Department of Health Education and Welfare, April 1965; pp. 4-5). Regardless of plan type, the faculty was not required to desegregate, though teachers were asked to participate in some joint activities, such as meetings and in-service programs.

Given the perceived deficiencies in the 1965-66 guidelines, desegregation requirements were strengthened the following year. As shown in the next row of Table 1,

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[14] Desegregation of school services (such as transportation) and activities (such as athletics) was required from 1965-66 forward.

there was a notable acceleration in the expectations for student desegregation in 1966-67. The OE adopted the stance that the best way to judge whether "a free choice plan is a viable and effective means of completing the initial stages of desegregation" was to consider whether "a substantial percentage of the students have in fact been transferred from segregated schools" (U.S. Department of Health Education and Welfare, March 1966; p. 8). The *Revised Statement of Policies* set loose guidelines for acceptable developments on this front, with higher growth in student transfer rates expected from districts with lower prior year transfer rates.[15] Faculty desegregation was also expected for the first time.

Although the compliance guidelines were comparable to these in 1967-68, in March 1968, HEW announced a dramatic shift in policy for the 1968-69 academic year:

> A school system which has maintained a system of separate school facilities for students based on their race, color, or national origin has the affirmative duty under law to take prompt and effective action to eliminate such a dual structure and bring about an integrated unitary school system. Compliance with the law requires *integration* of faculties, facilities, and activities, as well as students, so that there are *no Negro…schools and no white schools—just schools* (U.S. Department of Health Education and Welfare, March 23, 1968; p. 4956). [*italics added*]

The March 1968 guidelines then went on to establish that if previous voluntary desegregation plans (particularly freedom-of-choice plans) had proven ineffective, districts would be expected to adopt new plans to eliminate segregation by no later than the fall of 1969. These new guidelines were given legal backing by the May 1968 Supreme Court decision in *Green vs. New Kent County, Virginia*, where the Supreme Court ruled that freedom of choice plans were unconstitutional if other types of plans would lead to "speedier … conversion to a unitary, nonracial school system."[16]

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[15] Orfield (1969) claims that the loose targets stated in the table were widely interpreted as requiring no more than 20 percent of black students to be enrolled with whites.

[16] *Green* itself provided a basis for subsequent litigation and the large-scale court-ordered plans that have been previously studied (Welch and Light, 1987; Reber, 2004; Guryan, 2004).

The HEW guidelines provide some useful benchmarks for how much school desegregation to expect during the second half of the 1960s, particularly if desegregation occurred largely in response to the threat of lost federal funding. The guidelines are, however, not very informative for this analysis if they were not enforced. While the initial HEW efforts at enforcement were weak (Bailey and Mosher, 1968; Orfield, 1969), funds were cut off from at least some non-complying districts in each year of the program, as shown below. It was also reportedly common for federal funds for non-complying districts to be delayed, even if not terminated (Orfield, 1969). In general, enforcement efforts were likely to have strengthened over time, particularly once responsibility was moved from the OE to the Office for Civil Rights (OCR) in 1967. As a result, our data on measures of segregation may be of higher quality starting in that year.

III.   Theoretical Considerations

This study identifies the contribution of financial incentives put in place by Title VI, in conjunction with Title I, to the large increase in the number of southern school districts that desegregated for the first time around 1965 and to the intensity with which districts desegregated. Because the decision to desegregate was voluntary unless a district was already under court order, we begin this section with a simple theoretical framework that provides some predictions about the choice to desegregate and how the policies described above might have changed it.[17] The framework also provides some useful insights for the empirical analysis.

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[17] Court orders were rare in the first year of the program. For example, in our estimation sample, which appears highly representative of districts "at risk" of desegregating, less than 5 percent of districts were under court order in the fall of 1964.

The decision to desegregate was the result of a complex optimization problem on the part of southern school boards. At the same time that it decided whether or not to desegregate, a school board decided how much revenue to raise through local taxation and—to the extent that it maintained complete segregation or only nominally desegregated—how the resulting budget would be split between white and black students.

Through the mid-1960s, school boards in the South were largely in the hands of whites. Building on Margo (1990), suppose that the utility function of the average white in some southern district was given by

$$U\left(e_w, Y - \mu z, s\right)$$

where e_w represents average school expenditure per white pupil; $Y - \mu z$ is white per capita income, Y, net of the average adult white's contribution to the school budget, μz (where $0 < \mu < 1$); and s is some index of segregation. Assume that each of these "goods" raises utility, but at a decreasing rate. Taking prices and per-capita income as given, the board would then have chosen e_w, z, and s so as to maximize this utility function subject to the budget constraint

$$e_w \delta + e_B\left(1 - \delta\right) + s\,\tau = z + f$$

where e_B represents average school expenditure per black pupil; δ is the fraction of students who are white (the "price" of raising white school expenditure by one dollar), and $s\,\tau$ is the expense to the district (per pupil) of maintaining segregation.[18] The term f then

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[18] The requirement under *Plessy vs. Ferguson* (1896) that the black and white schools be "separate but equal" put some limits on how different expenditure in the black and white schools could be; however, in the early 20th century, large gaps in spending on black and white schools was common throughout the South (Margo, 1990).

represents the district's federal funding, which prior to CRA would have been unrelated to the chosen level of segregation (s).[19]

Given these circumstances, which districts would have desegregated? Before *Brown*, the expense of maintaining segregation was close to zero for all Southern and border districts.[20] Since segregation was an unambiguous "good," and its price was effectively zero (i.e., $\tau = 0$), all districts would have found it optimal to purchase the maximum "quantity" of segregation available—the operation of completely separate black and white schools. After *Brown*, by contrast, the probability that a district could be sued by private citizens increased the price of maintaining segregation; not only would the district have potentially needed to pay the expense of litigation itself, it might have engaged in costly activities to forestall it.[21] All else constant, districts with relatively high costs of engaging in litigation or relatively weak preferences for segregation would have found it optimal to reduce their consumption of segregation.[22]

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[19] The locally-raised school budget per pupil, z, is the sum of state and local per-pupil revenue.

[20] For some school districts, particularly smaller ones, providing separate schools for black and white students may have entailed some additional costs, requiring districts to forgo some economies of scale. Students typically went to the closest school for their own race, which was not always the closest school to their home: thus, segregation may have involved some cost even in some larger school districts. All Southern and Border states had state legislation or constitutional requirements that local districts maintain segregated schools. It is possible that some districts would have preferred to provide integrated schools—given the economies of scale—but due to state law, could not. The continued resistance to desegregation throughout the region after such laws were struck down by *Brown* suggests that this was rare, so we assume that districts chose to be at the corner solution of complete segregation before *Brown*.

[21] For example, between *Brown* and CRA, southern states passed a variety of laws to deter desegregation. These included, among others, pupil placement laws, laws permitting use of public funds to pay for private schools, and laws repealing compulsory school attendance. A variety of state laws were also passed to limit the power and influence of the NAACP, which was actively attempting to bring lawsuits against segregated districts during this period. For example, many southern states passed laws to require licensing of out-of-state and dues-collecting organizations. In several instances, the state then used these laws as a basis for suing the NAACP (Southern Education Reporting Service, 1964). The determent efforts might have worked: the NAACP was only able to assist in filing lawsuits in about 30 school districts in the decade following *Brown* (Rosenberg, 1991).

[22] In future work, we plan to address potential nonlinearities in marginal costs of desegregating. These nonlinearities may be particularly relevant at the extensive margin, for districts moving away from the corner solution.

These changes are seen formally by considering the conditions satisfied at the optimum. Before *Brown*, nearly all southern districts were at a corner solution, finding it optimal to consume the maximum possible level of segregation, $s^* = \bar{s}$. After *Brown*, districts continued to maintain complete segregation if

$$\frac{U_s}{U_{e_w}} > \frac{\tau}{\delta} \text{ and } \frac{U_s}{U_{Y-\mu z}} > \tau \cdot \mu .$$

where U_s, U_{e_w}, and $U_{Y-\mu z}$ represent the partial derivatives of utility with respect to s, e_w, and $Y - \mu z$, respectively. These conditions imply that, even at the maximum level of segregation, the typical white adult was willing to give up more school spending on his children and more disposable income than necessary to maintain the status quo. Districts that consumed less than the maximum level of segregation after *Brown* ($s^* < \bar{s}$) would have satisfied the condition for an interior solution:

$$\frac{U_s}{U_{e_w}} = \frac{\tau}{\delta} \text{ and } \frac{U_s}{U_{Y-\mu z}} = \tau \cdot \mu .$$

Holding prices constant, these were districts with less of a taste for segregation and (or) with relatively strong tastes for school spending and disposable income. Holding preferences constant, these were districts that faced relatively high relative prices of segregation. In fact, most of the districts that engaged in token desegregation after *Brown* were in Border states, where the relative taste for segregation was arguably low and the relative price of segregation—that is, the threat of litigation—was relatively high.[23]

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[23] As shown Guryan (2004), in a legal setting where precedent is important, it should optimal to bring lawsuits in places where the likelihood of victory is high, as was probably the case in the Border region. This suggests that the likelihood of litigation (and the associated costs) potentially increased more in the Border area after *Brown*.

These were the conditions likely to have prevailed on the eve of the momentous policy changes of the mid-1960s. For the majority of districts, the most salient change to this choice problem at this time would have been to the budget constraint:

$$e_w \delta + e_B (1 - \delta) + s\,\tau' = z + f(s),$$

where $\tau' > \tau$ is a new, higher cost of segregation-related litigation (or of attempts to forestall it) that is due to the increased ability of the Justice Department to bring or join lawsuits under CRA, and $f(s)$ represents the district's federal funding, which after CRA would have become a function of whether it continued to be segregated.[24] The form taken by this function would have depended on the Title VI compliance guidelines and enforcement efforts discussed above. In 1964-65, for instance, federal funding would have effectively remained exogenous. In 1965-66, by contrast, the guidelines suggest that federal funding would have been terminated if a district remained completely segregated ($f(\bar{s}) = 0$), but would have otherwise been received in full ($f(s*) = \bar{f}$ for $s* < \bar{s}$).[25] In the years that followed, $f(\cdot)$ would have in general been a more complicated function of the degree of segregation in the district.

Under these new conditions, which districts would have continued to maintain separate schools and which would have begun to desegregate? Consider optimization under the "rule" for 1965-66. If all else (including preferences) remained the same, districts that desegregated starting in 1965 would have experienced relatively large shocks to the price of segregation as a result of the program. Using the above intuition, these were districts where at $\bar{s}$:

$$\frac{U_s}{U_{e_w}} \leq \frac{\tau' + \overline{f}}{\delta} \quad \text{and} \quad \frac{U_s}{U_{Y-\mu z}} \leq \left(\tau' + \overline{f}\right) \cdot \mu.$$

For these districts, it was thus optimal to substitute away from segregation. For the remaining districts, which remained at the corner solution with $s^* = \overline{s}$, the relative price increase was not great enough or the relative taste for segregation too high to start desegregation along this extensive margin.

Regardless, note that the relative price of segregation (or the relative benefit of desegregation) would have increased at $\overline{s}$ for two reasons: the increased threat of litigation and the fact that federal expenditure became tied to the board's desegregation decision. Note also that the relative price of segregation is not constant given $f(\cdot)$: after desegregating a small amount, the price of segregation relative to expenditure and disposable income would have reverted to τ'/δ and $\tau'\mu$, respectively. Thus, if the financial sanctions under Title VI were large and well enforced, we would expect the typical southern school district to have done little more in any given year than what was required under the guidelines.

Similar exercises to these can be conducted to think about which districts would have met compliance guidelines in the years that followed. In general, the compliance guidelines outlined above suggest that in each year of the program, there was some threshold level of desegregation, at or above which a district would be ensured the continued flow of federal funds. The relative price of segregation would also have changed over time, given changes in allocation rules and appropriations for federal education programs, the threat of litigation, and Title VI enforcement efforts.

B.   Insights

The model provides several useful insights for the empirical analysis. First, it points to the difficulty of identifying the effects of financial incentives separate from other factors:

observing only changes in the rate of desegregation, it is unclear whether marginal districts responded to the threat of lost funding, to the threat of litigation, to some change in preferences, or to some combination of these factors. Identifying the contribution of Title VI-related financial incentives requires variation in the amount of federal funding at stake across districts with similar preferences and threats of litigation. As shown immediately below, we identify the effects of financial incentives using variation in the Title I grant related to the peculiarities of the formula used to allocate Title I funding.

Second, marginal districts in any given year would have been a non-random subsample of all districts in the South. Thus, even with some source of exogenous variation in federal funding amounts, we can at best identify an average effect for the subsample of districts that changed their behavior due to the changed incentive. Third, it suggests that if the possibility of lost federal funding were driving the behavior of the typical southern district at this time, credible identifying variation in the incentive should uncover effects only along desegregation margins stated (or implied) by the guidelines.

IV.   Empirical Strategy

Our identifying variation derives from the Title I funding formula, which determined how the Congressional appropriation for the program was allocated across local governments. Although Title I allocations were linearly related to district poverty—and therefore not likely to have been otherwise independent of trends in desegregation—they were also tied somewhat idiosyncratically to the state in which a district was located. Our empirical strategy exploits the fact that two districts with similar observable characteristics—most importantly, poverty rates and pre-program spending—and in different states would

have received different Title I allocations due to differences in *average* pre-program spending in their respective states.

An example is instructive. In the 1960s, North Carolina had high pre-program spending relative to Tennessee; this meant that a district in North Carolina would have a larger potential Title I grant (conditional on desegregating adequately) compared to a district in Tennessee *with the same poverty rate and spending.* Intuitively, our approach is to compare the desegregation experiences of such districts. We control for flexible functions of observable characteristics and bolster our findings with several specification checks.

A.   The Title I Funding Formula

During the period of interest, the Title I grant to a district d in state s in the fall of year t ($TITLEI_{dst}$) was determined by the formula

$$(1) \qquad TITLEI_{dst} = FUNDING_{st} \cdot POOR_{dt} .$$

$POOR_{dt}$ represents the estimated number of poor school-aged children residing in district d in the academic year beginning t. [26] This figure was primarily calculated using county-level counts of 5 to 17 year old children residing in families with incomes under \$2000 in the 1960 Census. To take account of the possibility that the number of children in poverty could have risen between 1960 and 1965, from the outset $POOR_{dt}$ also incorporated a count of children in families receiving support under Aid to Families with Dependent Children (AFDC), but with incomes over \$2000. Over time, the administrative definition of child

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[26] This formula is exact for districts that coincide with county boundaries, but otherwise it is only an approximation. Under ESEA 1965 and subsequent revisions to the original legislation, basic grants were made on the basis of county-level poverty counts. States could choose from a number of data sources, including Census tract-level data tabulated for minor governmental subdivisions supplied to state governments by the OE and administrative data from the AFDC program, in allocating grants to districts within the county; they were required to use the same method consistently throughout the state (Bailey and Mosher, 1968).

poverty was extended, but child counts in the additional categories of need were in practice relatively small, particularly in the South. [27]

Equation (1) shows that Title I was a compensatory program: districts with higher poverty rates would have received larger Title I grants per student. At the same time, however, the amount of funding that a district received per poor child differed across states. During the first two years of the program, Title I funding per poor child was a linear function of average per-pupil expenditure in the state two years prior ($EXPP_{st-2}$):

$$(2) \qquad FUNDING_{st} = ratred_{st} * 0.5 * EXPP_{st-2},$$

where $ratred_{st}$ represents some fraction, constant within state, by which entitlements were reduced when the program was not fully funded.[28] In its first year, the program was fully funded, so $ratred_{s1965}$ was equal to one for all states. Thus, if the funding "stuck" to compensatory programs targeted to poor children, the average poor child in any given state was expected to see a 50 percent increase in educational services during 1965-66.[29] In 1966-67, Title I was not fully funded, so district entitlements were reduced (the ratable reduction was less than one). In 1967-68, the formula was changed so that the per-poor-student grant

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[27] These additional poverty categories include neglected children, delinquent children, children in foster homes, and children in correctional facilities. Congress also changed the poverty threshold from $2000 to $3000 during the 1967-68 academic year, but this had no effect on actual grants received since the program was not fully funded (U.S. Department of Health, Education, and Welfare, 1972).

[28] In practice, we determine the ratable reduction by dividing the "ratably reduced amount," which incorporates the ratable reduction, by the "formula amount," which does not.

[29] It is not clear that this would have occurred. Although districts were encouraged to use Title I to "supplement, not supplant" existing sources of revenue, there is evidence that districts used Title I funding to reduce state and local revenues. The degree of substitution might not have been that high in the 1970s (Feldstein, 1978). However, using a different research design for the 1990s, Gordon (2004) finds that shocks to Title I revenue are offset by changes in state and local funding several years after they occur and little change in instructional spending (compensatory or otherwise) results. The authors are currently evaluating the degree of "stickiness" in Title I in its early years. The above statement also assumes that the average poor child was in a district with spending similar to the average for its state. To the extent that poor children were in lower-spending districts, spending on poor children would have risen by more than 50 percent (again, assuming the spending was directed to programs for poor children) and vice-versa.

depended on the maximum of the average spending in the state and the average spending

nationally:

$$(3) \qquad FUNDING_{st} = ratred_{st} * 0.5 * \max\left(EXPP_{st-2}, EXPP_{t-2}\right).$$

where $EXPP_{t-2}$ represents average per-pupil funding at the national level in 1965. In theory,

this change would have increased the grant per poor child across the South, as all states in

the region were spending below the national average. In practice, however, the program

continued to be less than fully funded and the ratable reduction was adjusted so that there

was little change in the relative position of states between 1966-67 and 1967-68.[30]

As discussed above, our empirical approach uses variation in $FUNDING_{st}$ arising

from differences in average state spending to identify the effects of financial incentives on

school desegregation. This requires that pre-program average spending in the state be

uncorrelated with other determinants of districts' decisions to desegregate. If this is the case,

we would expect to find no relationship between $FUNDING_{st}$ and desegregation decisions

in 1964, before the program was in effect. Figure 1 plots two measures of school

desegregation—the state-level fraction of districts with any student desegregation and the

state average fraction of blacks attending school with any whites—against $FUNDING_{st}$ for

the first two years of the program.[31] There is considerable variation in $FUNDING_{st}$ among

the nine states in our estimation sample. For instance, in 1965-66 (panels a and b), Title I

funding per poor student in Florida ($193) was 60 percent higher than in Mississippi ($121);

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[30] By 1969-70, there is no longer any variation in $FUNDING_{st}$ for the states in our sample: all spent below the national average two years prior and have similar ratable reductions. Lacking appropriations data for 1968-69, we cannot determine whether the across-state variation in $FUNDING_{st}$ exhibited for 1967-68 persisted to the next year. The last academic year in our current analysis is therefore 1967-68.
[31] For comparability to the results presented below, the desegregation averages are based only on districts in our estimation sample. See Section V.

this is due to the significantly lower average spending in Mississippi before the program.[32]

Some of the variation is more surprising: for example, Louisiana has relatively high average pre-program spending and was second only to Florida in Title I funding per poor student in 1965-66, while Tennessee received funding per poor child on par with that received by Alabama. Across-state variation in funding continues to the second year of the program (panels c and d).

In general, Figure 1 shows little relationship between $FUNDING_{st}$ and the amount of desegregation the average district in the state had achieved by 1964. This provides support for the assumption that variation in Title I grants per poor pupil across states—and the intensity of the associated incentives to desegregate—was not related to other determinants of desegregation. We return to this point below in the district-level analysis, showing that this conclusion continues to hold when we control for differences in observable characteristics of districts. We find that the program had little predictive power for desegregation before it went into effect.

B.   *Empirical Framework*

Our empirical strategy is characterized by the following equation:

$$(4) \qquad s_{dt}^* = \beta_0 + \beta_1 titlei_{dt} \cdot POST64_t + h(X_{dt}) + \varepsilon_{dt}$$

where s_{dt}^* is the level of segregation chosen by district d in the fall of year t; $titlei_{dt}$ is the Title I funding per student to which district d was entitled at time t; $POST64_t$ is an indicator for whether $t > 1964$; and $h(X_{dt})$ is a flexible function of observable district and and possibly time-varying characteristics. The theory outlined above predicts that $\beta_1 < 0$: the greater is the amount of Title I funding at stake, the less segregation the average district

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[32] All dollar figures from here forward are in real 2003 dollars.

will consume after 1964, all else constant.[33] Notice that federal funding is constrained to affect segregation decisions only after CRA has passed. This is a testable restriction, as noted above, and one that is important to examine in light of the identifying variation in the model.

The credibility of the comparisons that we are able to make on the basis of equation (4) relies on which characteristics of districts we are able to observe, X_{dt}; how flexibly we allow these characteristics to enter the model; and given the degree of flexibility in $h(\cdot)$, the extent to which there are comparable districts receiving different Title I grants. β_1 is identified by least squares regression if there were no unobserved shocks to the district's segregation decision that were correlated with $titlei_{dt}$.

The set of observable district characteristics is large given the historical nature of this study. First, and perhaps most importantly, we control for the district-level poverty rate, because we want the identifying variation in the model to derive from across-state differences in $titlei_{dt}$, rather than from across-state (or within-state) differences in poverty rates. We also control for average per-pupil current expenditures in the years prior to the program's introduction. As noted above, the decision over per-pupil spending was made along with a district's decision regarding desegregation. Implicit in a district's previous funding decisions—particularly once prior desegregation decisions are also taken into account—is information about its preferences, its income, and the "prices" that it faced. Finally, we observe district enrollment (both current and in the years prior to the program). As shown in Tables 2a and 2b, enrollment was highly correlated with the probability that a district had been litigated by 1964, as well as with the probability that it would be under

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[33] In the specifications below, the dependent variable is cast in terms of desegregation, not segregation. We therefore expect to find this coefficient to be positive.

court order by 1967.[34] Although the association between enrollment and litigation changed over time, enrollment should be highly correlated with the threat of litigation in any cross section.

There are some characteristics that we unfortunately cannot measure. The model above suggests that X_{dt} should include prices (τ, μ, and δ), per-capita white income (Y), and correlates of the typical white voter's preferences. Prior spending and segregation decisions might be thought of as sufficient statistics for these district-level characteristics. We also observe a strong correlates of these characteristics, particularly in enrollment and the district's child poverty rate.[35] Nonetheless, it is worth noting that some factors likely to be correlated with a district's "consumption" of segregation will in practice subsumed in the error term, ε_{dt}. However, if these factors are not correlated with the size of districts' Title I grants, the coefficient of interest will be unbiased.

In light of these data limitations and the identifying assumption noted above, we test the sensitivity of our results to a number of different methods of controlling for observables. As a benchmark, we begin the analysis by entering these characteristics linearly and additively in the model. We then include more flexible functional forms of these variables (e.g., polynomials and fixed effects) and their interactions. In general, it is worth bearing in mind that, although more saturated models may reduce bias, they will also reduce precision. Fortunately, however, the institutional features of this application afford several tests of the

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[34] We also observe several county-level characteristics for 1960, such as the fraction of county that is black, the fraction of families with incomes under $3000, and median family income. In future work, we will add these county-level variables tentatively and primarily as a robustness check, since district and county boundaries generally do not coincide, and county-level characteristics might very well differ from their district-level counterparts.

[35] For example, there is a very strong correlation between the child poverty rate and county-level racial composition, poverty, and median family income in Florida and Louisiana, where district and county boundaries coincide. This is particularly important for fraction black. As noted in Section III, there are theoretical reasons that the racial composition of districts might be important to segregation decisions. In other applications, fraction black has been shown to be highly correlated with how resources are distributed between black and white students (Bond, 1934; Margo, 1990; Card and Krueger, 1996; Reber, 2004).

credibility of the research design, which we perform as additional specification checks. We discuss these tests in Section VII.

V.   Data Sources and Key Variables

The data for this study come from a variety of administrative sources. We discuss these sources and key variables briefly below.[36]

A.   Desegregation, Title VI Compliance, and Title VI Enforcement

Outcomes explored in this study include student and faculty desegregation and official measures of Title VI compliance and enforcement. The desegregation data come from two sources. For 1964 and 1966, district-level data on school desegregation are drawn from reports published by Southern Education Reporting Service (SERS), a private organization funded by the Ford Foundation that monitored desegregation activity after *Brown.* The 1964 data were collected by SERS directly; the 1966 data were compiled from district-level Title VI compliance reports filed with the OE for that year.[37] The SERS consistently reported the number of black and white children attending desegregated schools. This allows us to construct the two measures of segregation we use in the analysis: an indicator variable equal to one if the district has *any* black students in school with whites (the extensive margin of student desegregation) and the fraction of black students in school with whites[38] (the intensive margin of student desegregation).[39] We construct these variables

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[36] More details will be given in a Data Appendix in a future draft of this paper.

[37] Unfortunately, desegregation data for the 1965-66 school year only exists for one state in our estimation sample (Tennessee). We therefore cannot examine desegregation responses directly during the first year of the HEW guidelines.

[38] More commonly used measures of the intensity of desegregation include the dissimilarity index (which can be interpreted as the share of black students who would have to switch schools in order to achieve the same racial composition in every school in district) and exposure of black students to white students (the exposure index, which can be interpreted as the white share of enrollment in the average black's school). As districts achieved greater levels of desegregation, the measure we use (the share of blacks in school with any whites) becomes less sensitive to changes in segregation. For example, once a school is less than 100 percent white,

for 1967 using school-level data on enrollment by race collected by the OE. Most districts in the South are included in this survey since it was conducted to monitor progress in desegregation.[40]

Although comparable data were collected by OCR for 1968, 1970, and 1972, at this point we limit attention to the 1964 to 1967 period, when financial incentives were likely to have had a larger effect and can be identified using the Title I funding formula. We also employ data on the number of black teachers on desegregated faculties from SERS/OE data; we construct another indicator variable equal to one if any black teachers are working on faculties with white teachers. There is little work on teacher desegregation, so this variable is of interest in itself. In addition, the HEW guidelines required some teacher desegregation, so we examine whether districts responded to financial incentives along this margin in addition to desegregating students.

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further reductions in segregation are not registered in the share of blacks in school with any whites but will change the exposure and dissimilarity indexes. In 1967—when there was potentially more desegregation in the intensive margin and we can construct all three measures—the correlations between the percent of blacks in school with any whites and the dissimilarity and exposure indexes are -0.78 and 0.95, respectively, so our measure is probably doing a reasonable job of capturing the intensive margin of desegregation for the period under study here. By 1970, however, the correlations had fallen to -0.38 and 0.48, respectively. In future work, we hope to examine alternative measures of desegregation for later periods.

[39] For 1966, SERS did not report the total number of black students enrolled in the district. We therefore use the number of black students enrolled in the district in 1967 as the denominator in constructing the percent of blacks in school with whites where available for 1967. This procedure introduces some noise into the measure of the percent of blacks in school with whites, but we do not expect this to be systematic. The measure of whether a district has any blacks in school with whites is unaffected by this imputation procedure.

[40] The SERS data on segregation were somewhat incomplete; we believe this was often due to the fact that districts did not take any steps to desegregate. We therefore imputed zero desegregation values to districts in a number of situations: 1) The 1964 SERS data listed only districts that had taken some steps to desegregate; we therefore assume that districts that are not listed in the 1964 SERS had zero blacks in school with whites. 2) If a district was listed as not receiving federal funds in 1966 and had never before reported taking any desegregation, we impute zero desegregation for 1966. 3) The 1966 SERS provided a much more complete listing of districts, including many reporting no desegregation; however, some were missing. In cases where a district was not listed in the 1966 SERS and had not previously reported some desegregation, we assigned zero desegregation for 1966. 4) If desegregation was confirmed to be zero in any year according to rules (1)-(3), we assigned zero desegregation for all prior years (assuming no prior desegregation was reported). Finally, (5) if the segregation measures were missing for any year but available in the next year, we assigned the next year's value (values of segregation were carried back only one year).

Data on official Title VI compliance and withholding of federal funds come from several sources. For the fall of 1967, we compile these variables from an official OCR report covering the universe of southern districts. The key outcome here is an indicator for whether the district had funds terminated or deferred; however, the OCR compliance report also contains useful information on the form of compliance (Form 441, voluntary plan, or court order).[41] As discussed below, this variable is helpful in defining the sample (particularly once combined with a list of districts filing an approved Form 441 for 1965-66) and in conducting specification checks. For the 1966-67 school year, information on federal fund termination is drawn from the above-referenced 1966 SERS report; for 1965-66, it is taken from a congressional report, and pertains only to Title I, not federal funding more generally.

B.   *School Finance*

The only national dataset on the finances of school districts for the early 1960s is the Census of Government (COG), which was conducted every five years and collected information on enrollment, current and total expenditure, and revenue from state, local and federal sources. We use the 1962 survey, which refers to the 1961-62 school year. Unfortunately, only data for districts with 3,000 or more students were reported in the published version of the COG.[42] For five states in our estimation sample, we have collected school finance data directly from the relevant state department of education publication for as many years as possible between 1960 and 1964. These data have the advantage of

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[41] In a future draft of this paper, we hope to incorporate additional years of data on compliance and funding termination.

[42] There are several other differences between the COG and the state school finance data worthy of note. First, states with dependent school districts (such as North Carolina, Virginia, Maryland, and Tennessee) do not appear in the COG school finance data. While we have already collected administrative data for North Carolina and Tennessee, we are in the process of collecting school finance data for Virginia and Maryland for the early 1960s so that these states can be included in a future analysis. Second, the state finance data are generally administrative, whereas the COG was based on a survey. The state data are therefore likely to be of higher quality.

covering the universe of school districts in the state (with few exceptions); this is particularly important for states with smaller school districts.

We control for current expenditure per pupil in the analysis. It is the most consistently available variable and is also generally less noisy than total revenue and total expenditure, which include capital outlays. Where we have state school finance data, we use the average current expenditure for 1960-1964 to reduce noise. We also use data on enrollment from the COG and school finance data to construct the measures of per-pupil current expenditure.

C.   Title I Allocations

As discussed above, grants under Title I initially were based on a simple formula involving counts of poor children and lagged state (or national, depending on the state and the year) per pupil expenditure. For 1965-66, 1966-67, and 1967-68, we have located the relevant poverty counts at the county level and expenditure figures (along with ratable reductions) in various congressional reports. Since the analysis is conducted at the school district level, we need to allocate county-level Title I entitlements to school districts, which are generally smaller geographic units. For the first year of the program (1965-66), we have located district-level entitlements from a congressional report. From these district level entitlements, we derive district-level poverty counts in the first year of the program, which we then will use to estimate district-level grants for later years. [43] This estimation procedure will add some noise to per pupil grant amounts at the district level.

D.   Enrollment

We use district-level enrollment both to normalize the Title I grant amounts, as well as to control directly for the threat of litigation. Where available, enrollment data are drawn

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[43] Specifically, we assign each district a constant share of the county Title I allocation based on the share of the county allocation it received in 1965-66.

from the state school finance reports. Although finance data are available in the early 1960s only for the five states mentioned above, we have these data for more states in the late 1960s.[44] Where finance data are missing, district-level enrollment data are drawn from *Education Directory: Public School Systems*, an annual publication of the OE.

VI.   Sample and Descriptive Statistics

A.   *Defining the Sample*

Our estimation sample is defined in three steps. First, we have to date collected data on desegregation, Title VI compliance, and school finance for nine states of the former Confederacy. Our baseline sample is therefore limited to these states and consists of 1395 district observations.[45]

Second, we restrict attention to districts that should have been at risk to change their behavior as a result of the financial incentives put in place by Title VI and Title I. As mentioned above, the group of districts at risk of losing federal funding consisted of biracial districts that historically had maintained separate schools for blacks and whites by law, so we eliminate districts with no blacks (or whites) from the sample. Because district-level data on the racial composition of the student population are not universally available at this time, we eliminate districts from the sample using the OE/OCR records on Title VI compliance. In particular, if a school district filed an approved Assurance of Compliance (Form 441) in *both* the fall of 1965 *and* the fall of 1967, we assume that its student population was entirely of one race or that it had already eliminated racially separate schools and therefore was not at

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[44] Mississippi is the only state in our sample for which we do not have any finance data in the late 1960s.
[45] These states include Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee. These are all states of the former Confederacy, save Virginia and Texas. For consistency with the figures presented below, the count of districts presented here is based on the 1967 Title VI compliance data.

risk of losing federal funding in the period under study here.[46] As a result of this restriction,

the number of districts in the sample falls to 1204.[47]

Our third sample selection criterion is driven by data constraints. To conduct the

analysis discussed above, we need district-level data on school desegregation (for all available

years between 1964 and 1967), Title I grant amounts, and school finances prior to the

introduction of the program.[48] For four states in the sample, we have finance data only from

the COG, which consists only of large districts. As a result, the number of districts in the

estimation sample from these states falls by more than half.[49] For the five remaining states

with school finance data from state departments of education, we drop some districts that

do not have desegregation data for the relevant years.[50] The resulting sample consists of 721

districts in nine states.

B.   *Summary Statistics*

Table 2a presents unweighted summary statistics of key variables by year (1964 to

1967) and by region ("Deep South" and "Rest of South").[51]   Both regions show marked

changes in desegregation of students and of faculty during this short time frame, particularly

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[46] In theory, we could use only the filing of Form 441 in 1965-66 as our measure of being uniracial or having eliminated segregated schools before Title I and CRA were implemented. However, anecdotal accounts suggest that some districts may have filed this form (and had it approved) early on, but was later found to be out of compliance with the guidelines. We assume that these districts were at risk of being "found out" and losing federal funding. For example, four districts in our estimation sample for Mississippi filed a Form 441 for the 1965-66 academic year; all of these districts filed voluntary desegregation plans in 1967. On the other hand, some districts that did not file a Form 441 in 1965-66 did file one in 1967-68. We keep these districts in the sample, since the implied elimination of segregated schools might have resulted from the program.
[47] Most districts eliminated from the sample are from Arkansas, which has many small school systems.
[48] The sample is based on the availability of student desegregation data. Faculty desegregation data are missing for some districts in the sample.
[49] These states are Alabama, Georgia, Mississippi, and South Carolina. The sample size falls from 561 to 255 when we take into account the availability of finance data. When we further restrict the sample to districts with Title I and desegregation data, the number of districts from these states falls to 215.
[50] These states are Arkansas, Florida, Louisiana, North Carolina, and Tennessee. The sample size falls from 643 to 609 when we take into account the availability of finance data. The number of districts under observation falls to 506 once those with missing Title I or desegregation data are dropped from the sample. Most of these drops result from missing desegregation data on Arkansas districts.
[51] This categorization is based partly on how much desegregation had occurred by 1964, with the Deep South making particularly slow progress. The Deep South states include Alabama, Georgia, Mississippi, Louisiana, and South Carolina. The "Rest of South" states include North Carolina, Tennessee, Florida, and Arkansas.

along the extensive margin. Between 1964 and 1966, for example, there is a nearly 70 point rise in the percent of districts with any student desegregation in the Deep South and a 60 point rise in the remaining states. The rest of the South also shows a remarkable acceleration in faculty desegregation over this period, with 82.3 percent of districts having engaged in at least nominal desegregation by 1966. Regardless of region, desegregation appears to have continued through the fall of 1967, when the average district enrolled 14 percent of black students with whites in the Deep South, and 47 percent in the rest of the region. There were large differences between the Deep South and the rest of the South in the extent to which districts submitted accepted court-ordered plans to comply with Title VI; while 48 percent of districts in the Deep South states submitted such plans by 1967, only 11 percent of districts in the rest of the South did.

The Title VI compliance and enforcement measures are broadly consistent with these trends. For instance, twenty-six percent of districts in the Deep South and nine percent in the remainder of the South had all of their federal funding terminated during 1966-67. In both cases, this was approximately the percent of districts that had *not* nominally desegregated students by the fall of 1966 and therefore had clearly violated HEW guidelines for Title VI compliance. The means suggest that HEW enforcement efforts and (or) the effectiveness of litigation might have increased over time, as the share of districts taking with any desegregation, the percent of blacks in school with whites and the extent of teacher desegregation all increased further between 1966 and 1967.

Title I grants in the first year of the program (1965) were large, averaging $318 per pupil or 22 percent of pre-program current expenditure. The average Title I grant per-pupil, as well as the average Title I grant relative to pre-program spending (an alternative measure of the incentive used below) was similar in the two sub-regions. However, the enrollment-

weighted average Title I grant is substantially lower ($232 per pupil and 15 percent of pre-program spending, see Table 2b), and weighted by enrollment (measured before the program was implemented), the Deep South had larger Title I grants on average ($270 per pupil, 18 percent of pre-program current expenditure), compared to the rest of the South ($207 per pupil, 13 percent of pre-program current expenditure). This suggests that smaller districts had larger grants (were poorer), and the rest of the South has smaller districts on average.

Table 3 shows time-invariant characteristics of districts in the estimation sample, both unweighted and weighted by pre-program enrollment. The table shows the high rate of disadvantage in the South. Weighted by enrollment, the ratio of Title I eligibles to enrollment averaged 31 percent in the Deep South and 23 percent in the Rest of South—this ratio is approximately the poverty rate; the fraction of families with income below $3,000 in 1960 averaged 41.3 and 35.2 percent, respectively. The black share of the population was 32 percent in the Deep South and 21 percent in the remainder. Finally, Table 3 shows the share of districts (and enrollment) in the sample that comes from each state. Mississippi and in particular Arkansas have large numbers of districts relative to students, while Louisiana and Florida have relatively few districts relative to students—these states are therefore likely to drive differences between weighted and unweighted statistics.

VII.   Results

A.   Main Findings

Table 4a and 4b examine the impact of federal funding on token student desegregation – the extensive margin – in 1966 and 1967, respectively. In these regressions, we remove districts that had already (voluntarily or by court order) nominally desegregated

by 1964.[52] As shown in column (1) of each table, without controls, regressions of an indicator for any desegregation on Title I funds per pupil yield coefficients that are wrong-signed (negative) in both years. This is due to the fact that Title I funding was strongly tied to poverty rates, as shown above. Poorer districts were less likely to desegregate: as shown in column (2), the child poverty rate (the ratio of the district's Title I eligible children to its 1965 enrollment) is negatively and significantly related to having engaged in any desegregation by either 1966 or 1967. Conditional on poverty, desegregation is positively associated with potential Title I funding, though not significantly so. Note that in these and all remaining specifications in the tables, identification is being derived from the state-component of the Title I funding formula.

More robust specifications also show little impact of Title I funding on this measure of desegregation. Controls for enrollment do not weaken the relationship (column (3)) nor does generalizing the specification of enrollment and poverty rates (columns (4) and (5)). Extending the model to include interactions of each with pre-1965 spending per student also yields no substantial change to the results (column (6)). One way to understand this lack of impact is to recall that by 1966 most districts had nominally desegregated (Table 2), and many of the ones that had not were likely extreme in their opposition to integration. On the other hand, more than just token desegregation was required by the guidelines starting in 1966-67, so it might be reasonable not to see an effect of the incentive along this margin.

Tables 5a and 5b show results for the intensive margin – the change in the fraction of blacks enrolled in schools with whites since 1964 – for the same series of specifications presented in Tables 4a and 4b. For these regressions, we use the full sample of districts, not excluding those which had taken some action before the program began. To take into

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[52] All regressions in these tables and those that follow are unweighted. All standard errors are consistent for heteroskedasticity.

account the possibility that earlier desegregation experiences influenced subsequent trends in desegregation, each of these regressions controls for the fraction of blacks in school with whites by the fall 1964.

As with token desegregation, the relationship between Title I funding and the fraction of blacks in school with whites is wrong-signed. However, controlling for the poverty rate reveals a large and significant positive association between the amount of funding at stake and the amount of desegregation. A 100 dollar increase in potential funding is associated with increases of 8.3 and 7 percentage points in the percent of blacks in school with whites in 1966 (Table 5a) and 1967 (Table 5b), respectively. This is robust to general specifications of poverty, enrollment, and pre-program spending per student: column (5), for example, matches districts in 110 poverty-enrollment cells (five classes of enrollment by 22 classes of poverty). Column (6) adds general two-way interactions with prior spending, which strengthen the relationship.[53] Notably, the controls explain a large portion (roughly one-third) of the variation in segregation across districts. Thus, we have captured important alternative influences on desegregation activity, and the impact of financial incentives persists.

Tables 6a and 6b present specifications analogous to those in Tables 4a and 4b, but for faculty desegregation. As above, districts that had engaged in faculty desegregation by 1964 are removed from the regressions. The tables show Title I to be associated with at least some desegregation of faculty: point estimates in both years suggest a 6 to 10 percentage point increase in the chance of faculty desegregation per 100 dollars of Title I funds per student. The results are more robust in the 1967 data.

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[53]The coefficient on the Title I grant rises primarily because of the spending quintile fixed effects themselves, not their interaction with poverty and enrollment.

B.   *Other Results*

Table 7 presents alternative specifications that allow a differing marginal incentive of Title I funds. One approach is to deflate Title I funding by pre-program spending per student. Here, we investigate whether funds become more valuable as they increase as a percentage of a district's budget (not just in raw dollars). Another specification enters Title I funding per pupil in logs rather than levels.

The upper panel of Table 7 shows results for 1966, while the lower panel shows results for 1967. As before, the effect of potential Title I funding on token desegregation, shown in columns (1) and (2), is generally insignificant (though there is some evidence of a marginal impact in 1967). The results for the fraction of blacks with any whites, shown in columns (3) and (4), are robust to these alternative specifications of the financial incentive. In fact, evaluated at the means of spending per student and of Title I funding, the coefficient on both the linear and the log specification implies a similar magnitude of response as earlier results. In general, these alternative specifications of the incentive reinforce our earlier findings.

Table 8 examines Title VI compliance outcomes: whether federal funding was deferred or terminated and whether a district failed to submit an acceptable desegregation plan. These data provide insight on 1965, which is valuable since other segregation measures are not available in that year. There is no evidence that a larger potential grant made it less likely for a district to have its federal funds terminated or to have submitted an unacceptable plan in 1965. In 1966, there is also no relationship between financial incentives and fund termination. By the fall of 1967, however, there does appear to be significant impact of financial incentives on compliance behavior. As these compliance outcomes come from an independent data source, they are useful in confirming those earlier presented. However,

results for 1966 and 1965 are not consistent with earlier findings. These different results can potentially be reconciled when enforcement activity is taken into account. Since enforcement efforts were reportedly strengthened over time, it might be case that by 1967, compliance on paper looked much more like compliance in practice. Data quality prior to 1967 might be relatively poor, as earlier mentioned.

C.   *Specification Checks*

The results presented so far are supportive of the view that, in conjunction with Title I, Title VI played some role in prompting southern school districts to desegregate starting in the mid-1960s. As stated earlier, however, this interpretation relies on the assumption that controls for enrollment, prior per-pupil spending, and poverty rates can adequately proxy for any unobserved district characteristics associated with both higher levels of Title I funding and greater desegregation activity. This section evaluates the validity of this approach. We perform the same type of regression analysis as that performed above on segregation-related outcomes where Title I funding arguably should have had no impact. If these exercises uncover no effect, then we have further evidence in favor of our interpretation.

Table 9 examines the impact of financial incentives on segregation in 1964—before Title I funding became available. Three outcomes are examined: token desegregation (student), court-ordered desegregation, and the fraction of blacks with any whites. The upper panel shows results using the 1965 financial incentive measure used in Table 8. None of the estimates are significant. The middle and lower panels repeat this exercise using the 1966 and 1967 financial incentive measures. There is also little evidence here that the incentives are associated with prior desegregation activity: point estimates are all quite small relative to earlier estimates. Most estimates are also statistically indistinguishable from zero,

though future incentives are close to significantly associated with the fraction blacks with any whites in column (6). Note, however, that this outcome was controlled for in earlier tables.

To examine whether we have adequately controlled for the threat of litigation, Table 10 presents the impact of financial incentives on the type of plan for desegregation a district submitted in 1967, when relevant data are available. Recall that acceptable forms of compliance included submission of an acceptable court-ordered plan, a voluntary plan, or a Form 441 "Assurance of Compliance." We show regression results for each type of plan, not just court orders. Note that, among the voluntary plans and court orders submitted are plans that were already approved and plans that were either rejected or currently under review. Among Form 441s, we include only those approved.

Columns (1) and (2) show Title I funding does not significantly affect the likelihood that a district submits a court order by 1967. Nevertheless, the same control variables as we used earlier here also capture in excess of one-third of the cross-district variation in court-ordered desegregation in 1967. This supports our assertion that these controls effectively capture the threat of litigation post-1964. Columns (3) and (4) show that Title I funding is also not significantly associated with submission of a voluntary plan. This is not surprising. After all, it was almost costless to submit a plan; the issue here is not whether the plan was consistent with the law, but rather which type of plan was submitted. Finally, columns (5) and (6) show that Title I induced submission of Form 441, indicating full compliance with Title VI. In the early years of Title VI, this type of submission was for the most part limited to non-biracial districts in the South, as noted above. However, by 1967 it appears that marginally biracial southern districts were also able submit this type of plan, and the ones with the greater propensity to do so were the ones with more Title I funding on the line.

We present this result for completeness, as it is more of an outcome than a specification check.

VIII.   Conclusion

Although *Brown vs. Board of Education* ostensibly prohibited segregated schools, ten years after its passage, the vast majority of Southern school districts remained completely segregated, causing some to suggest that the courts were ineffective in bringing about desegregation (Rosenberg, 1991). Most existing research on the causes of school desegregation focuses on the role of the courts and typically examines samples of larger, mostly urban school districts starting in 1968; but by 1968, most districts in the South had already taken some steps to desegregate. This study fills some gaps in our understanding of how and why Southern school districts finally abandoned segregated schools in large numbers. We employ a newly collected dataset spanning the 1960s, the period during which most districts first desegregated, and we examine trends for a large number of districts, including many smaller and rural districts. Finally, we examine the role of the Congress and executive agencies—as opposed to the courts—in promoting desegregation.

The paper examines one of the federal government's first attempts to influence the (non-financial) behavior of local school districts with financial incentives, the threat of withdrawal of federal funding. Title VI of the *Civil Rights Act of 1964* prohibited federal funding of entities that discriminated on the basis of race; the next year, Congress dramatically increased the amount of federal funding at stake with the passage of Title I of the *Elementary and Secondary Education Act*. Together, these acts provided southern school districts a financial incentive to desegregate their schools to receive the new federal funding. Previous studies have shown that many Southern school districts did desegregate for the first

time around 1965 and suggest that CRA may have played a role, but these studies do not systematically assess the role of financial incentives and were based on small samples of districts (Clotfelter, 2004), on small data sets (Boozer, Krueger, and Wolkon, 1992), or on state summaries of trends in desegregation (Rosenberg, 1991).

If the financial incentives provided by Title I and Title VI were important, we would expect that—controlling for other determinants of desegregation decisions—districts with "more to lose" by not desegregating would be more likely to desegregate. Our results suggest that this was, indeed, the case. Among districts that had not made any steps towards desegregation by 1964, those with larger Title I grants per pupil were more likely to have taken their first steps towards desegregation, although the results for the extensive margin are not statistically significant. The fraction of blacks in school with any whites—the intensive margin—increased more among districts with larger Title I grants, as did the probability of having desegregated faculties. These results are robust to including a variety of flexible controls for observable characteristics and specifying the Title I incentive in different ways. Further, we find that *future* Title I grants do not predict 1964 desegregation decisions, providing support for the identifying assumption that controlling for observables, other determinants of desegregation decisions are not correlated with the Title I grant.

This analysis provides some of the first systematic evidence of the role of Congress—specifically financial incentives—in desegregating southern schools and suggests that financial incentives were, indeed, an important contributor to desegregation in the mid-1960s. In future work, we hope to expand the sample of states covered and to examine additional years of desegregation and compliance data. The importance of courts relative to Congress may have increased over time and may have varied across places; we therefore plan to expand on this analysis to incorporate more information on litigation and court-ordered

desegregation plans over time to investigate the potential interactions between legislation and litigation, providing a clearer understanding of the forces that reduced segregation throughout the 1960s and 1970s.

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Figure 1 – State Components of the Title I Formula, 1965 and 1966, and Desegregation, 1964

a. Variable: Any Desegregation, Title I Year: 1965

b. Variable: Fraction of Blacks with Any Whites, Title I Year: 1965

c. Variable: Any Desegregation, Title I Year: 1966

d. Variable: Fraction of Blacks with Any Whites, Title I Year: 1966
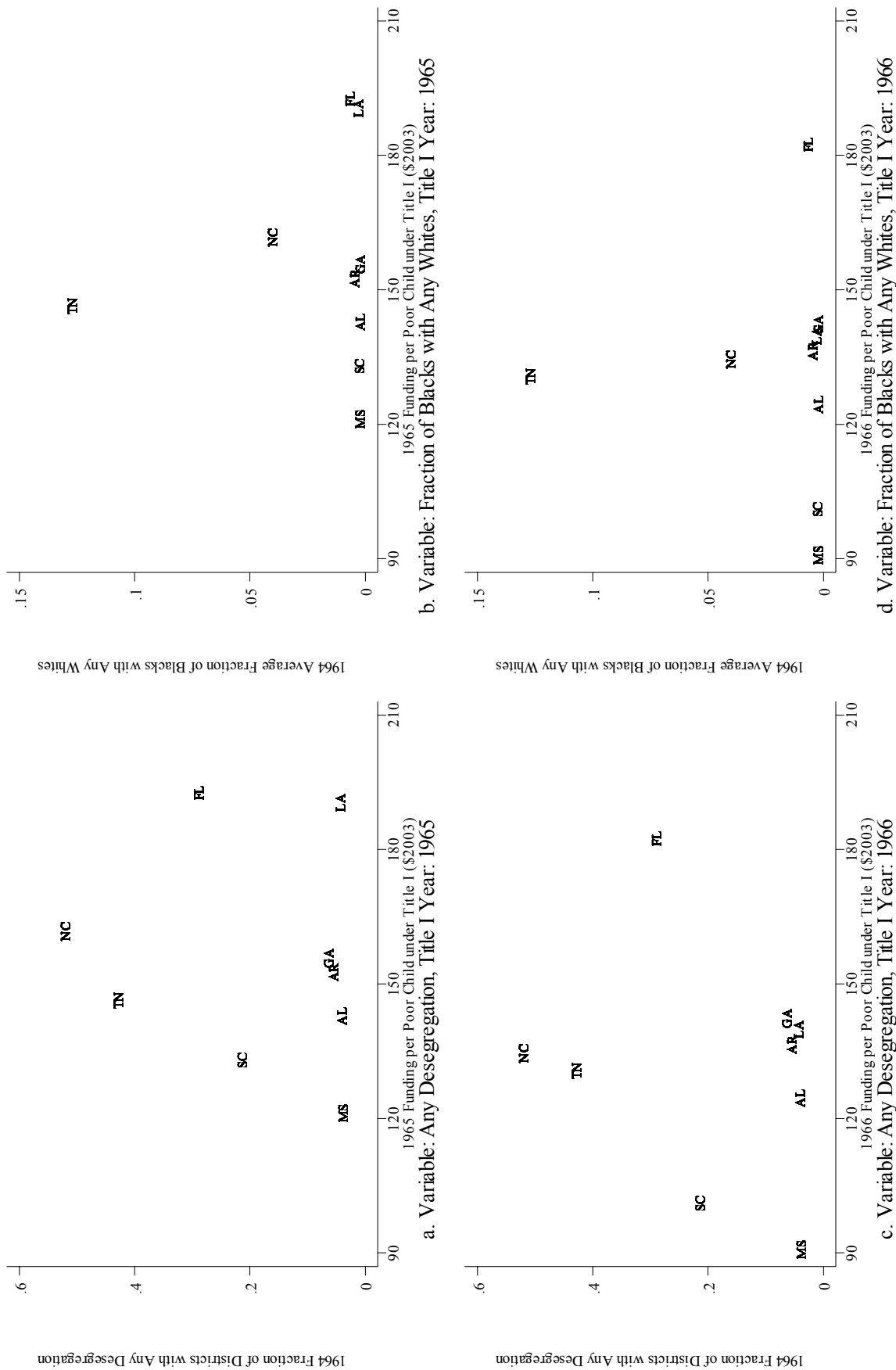
Notes: The underlying unit of observation is the school district. Averages are unweighted.

Table 1 - Changes in the Costs and Benefits of School Desegregation over the 1960s

| Fall of School Year | *Costs* | | | | | *Benefits* | |
| | *Student Requirements* | | *Teacher Requirements* | | | | |
	Extensive	Intensive	Nominal	Extensive	Intensive	Financial	Legal
1963 -							Avoid litigation (private only)
1964						Keep small amt. of federal school aid	Avoid litigation (private and public)
1965	Desegregation of at least two grades, inc. 1st (four grades targeted)		Joint faculty meetings and in-service programs			Keep Title I + small amt. of aid under other federal programs	Avoid litigation (private and public)
1966, 1967		*Free choice:* Loose guidelines for transfer rates: (1) 8-9% transfer prior year, then 2x transfer rate this year; (2) 4-5% transfer last year, then 3x transfer rate this year; (3) <4% transfer last year, >3x transfer rate this year; (4) 0% transfer last year, then "substantial start" expected (1966 only)		Some desegregation of professional staff in each school in the system		Keep Title I (ratably reduced) + small amt. of aid under other federal programs	Avoid litigation (private and public)
1968+		Free choice plans no longer viable; Integregation required by Sept. 1969			Integration	Keep Title I (new formula) + small amt. of aid under other federal programs	Avoid litigation (private and public)

Table 2a - Summary Statistics By Year and Region (Unweighted)
(Sample: Balanced Panel for 1964, 1966, and 1967)

	Deep South (AL, GA, LA, MS, SC)				Rest of South (AR, FL, NC, TN)			
	1964	1965	1966	1967	1964	1965	1966	1967
Segregation Measures								
Any Desegregation (Student)	0.059		0.747	0.894	0.319		0.906	0.969
Fraction of Blacks with Whites (Student)	0.000		0.073	0.141	0.049		0.368	0.469
Any Desegregation (Faculty)*	0.000		0.440	0.740	0.018		0.823	0.833
Fraction of Blacks with Whites (Faculty)*			0.403	0.528			0.766	0.852
Title VI Compliance Measures								
Form 441 Accepted		0.015		0.000		0.013		0.194
No Plan Submitted or Unacceptable Plan		0.183		0.139		0.033		0.027
Court Order Accepted				0.476				0.109
Voluntary Plan Accepted				0.385				0.670
Title VI Enforcement Measures								
Title I Funds Terminated		0.165	0.260	0.084		0.018	0.089	0.009
All Federal Funding Terminated			0.260	0.084			0.089	0.009
Federal Funding at Risk				0.114				0.049
Federal Funding Measures ($2003)								
Title I Basic Grant		2139756	1639976	1751537		1456689	1249512	1308058
Title I Basic Grant Per Pupil		320.5	250.4	269.5		317.0	275.4	289.0
Title I /Pre-1965 Expenditure (Per Pupil)		0.224	0.175	0.190		0.215	0.187	0.198
District Characteristics								
Enrollment	8024	8063	8188	8350	7129	7242	7357	7530
Number of Districts*	273	273	273	273	448	448	448	448

Table 2b - Summary Statistics By Year and Region (Weighted by Average Pre-1965 Enrollment)
(Sample: Balanced Panel for 1964, 1966, and 1967)

	Deep South (AL, GA, LA, MS, SC)				Rest of South (AR, FL, NC, TN)			
	1964	1965	1966	1967	1964	1965	1966	1967
Segregation Measures								
Any Desegregation (Student)	0.122		0.803	0.929	0.675		0.980	0.995
Fraction of Blacks with Whites (Student)	0.003		0.074	0.157	0.054		0.315	0.412
Any Desegregation (Faculty)*	0.000		0.464	0.813	0.026		0.900	0.947
Fraction of Blacks with Whites (Faculty)*			0.350	0.489			0.690	0.811
Title VI Compliance Measures								
Form 441 Accepted		0.009		0.000		0.002		0.181
No Plan Submitted or Unacceptable Plan		0.143		0.138		0.013		0.039
Court Order Accepted				0.504				0.357
Voluntary Plan Accepted				0.358				0.423
Title VI Enforcement Measures								
Title I Funds Terminated		0.133	0.202	0.098		0.004	0.020	0.001
All Federal Funding Terminated			0.202	0.098			0.020	0.001
Federal Funding at Risk				0.088				0.029
Federal Funding Measures ($2003)								
Title I Basic Grant		4046238	3019196	3178836		5566232	4946368	5147820
Title I Basic Grant Per Pupil		269.7	207.0	220.4		206.9	177.1	183.4
Title I /Pre-1965 Expenditure (Per Pupil)		0.181	0.139	0.149		0.133	0.114	0.118
District Characteristics								
Enrollment	19500	19937	20449	21029	45636	46979	48329	49877
Number of Districts*	273	273	273	273	448	448	448	448

Table 3 - Pre-Existing Characteristics of Districts in Sample, by Region
(Sample: Balanced Panel for 1964, 1966, and 1967)

	Unweighted		Weighted	
	Deep South	Rest of South	Deep South	Rest of South
District-Level Variables				
Court Order to Desegregate, 1964	0.033	0.051	0.080	0.159
Pre-1965 Per Pupil Current Expenditure ($2003)	1561	1554	1647	1707
Title I Eligibles	2417	1537	4170	5465
Title I Eligibles / 1965 Enrollment	0.375	0.347	0.306	0.219
Title I Eligibles / Pre Enrollment	0.371	0.351	0.307	0.226
County-Level Measures				
Percent black, 1960	35.4	23.4	32.2	20.8
Median family income, 1960	3235	3300	3791	4210
Percent of families with income<$3000, 1960	48.0	46.7	41.3	35.2
State Indicators				
Alabama	0.223		0.199	
Georgia	0.198		0.191	
Louisiana	0.212		0.309	
Mississippi	0.242		0.160	
South Carolina	0.125		0.141	
Arkansas		0.286		0.068
Florida		0.143		0.382
North Carolina		0.279		0.285
Tennessee		0.292		0.265
Number of Districts	273	448	273	448

Notes: Weighted averages are weighted by pre-1965 average enrollment.

Table 4a - The Extensive Margin - Federal Funding and Any Student Desegregation, Fall 1966
(Sample: Balanced Panel for 1964, 1966, and 1967; No Student Desegregation in 1964)

	Dependent Variable: Any Desegregation (=1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Mean			0.802			
Regression Coefficients (Standard Errors)						
Constant	0.892	0.915	0.848			
	(0.034)	(0.034)	(0.048)			
Title I Per Pupil (100s of $2003)	-0.032	0.029	0.042	0.041	0.007	0.025
	(0.012)	(0.026)	(0.026)	(0.026)	(0.031)	(0.041)
Child Poverty Rate (1965, %)		-0.005	-0.006			
		(0.002)	(0.002)			
Enrollment			0.001			
			(0.001)			
Enrollment^2/100			-0.022			
			(0.011)			
R^2	0.01	0.02	0.03	0.05	0.18	0.32
Controls						
Child Poverty, Quartic				X		
Enrollment, Quartic				X		
Child Poverty (Linear)*Enrollment (Linear)				X		
Child Poverty, Fixed Effects (mults. of 5%)					X	X
Enrollment Quintiles, Fixed Effects					X	X
Child Poverty (FEs)*Enrollment (FEs)					X	X
Pre-1965 Expenditure Quintiles, Fixed Effects						X
Pre-1965 Expenditure (FEs) * Child Poverty (FEs)						X
Pre-1965 Expenditure (FEs)* Enrollment (FEs)						X
Observations (Number of Districts)	562	562	562	562	562	562

Notes: Regressions are unweighted. Heteroskedasticity robust standard errors are in parentheses.

Table 4b - The Extensive Margin - Federal Funding and Any Student Desegregation, Fall 1967
(Sample: Balanced Panel for 1964, 1966, and 1967; No Student Desegregation in 1964)

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable: Any Desegregation (=1)						
Mean			0.923			
Regression Coefficients (Standard Errors)						
Constant	0.937	0.948	0.912			
	(0.020)	(0.021)	(0.034)			
Title I Per Pupil (100s of $2003)	-0.005	0.015	0.021	0.022	0.013	0.026
	(0.006)	(0.015)	(0.015)	(0.016)	(0.020)	(0.030)
Child Poverty Rate (1965, %)		-0.002	-0.002			
		(0.001)	(0.001)			
Enrollment/100			0.001			
			(0.000)			
Enrollment^2/10000			-0.006			
			(0.005)			
R^2	0.001	0.004	0.01	0.02	0.14	0.28
Controls						
Child Poverty, Quartic				X		
Enrollment, Quartic				X		
Child Poverty (Linear)*Enrollment (Linear)				X		
Child Poverty, Fixed Effects (mults. of 5%)					X	X
Enrollment Quintiles, Fixed Effects					X	X
Child Poverty (FEs)*Enrollment (FEs)					X	X
Pre-1965 Expenditure Quintiles, Fixed Effects						X
Pre-1965 Expenditure (FEs) * Child Poverty (FEs)						X
Pre-1965 Expenditure (FEs)* Enrollment (FEs)						X
Observations (Number of Districts)	562	562	562	562	562	562

Notes: See notes to Table 4a.

Table 5a - The Intensive Margin - Federal Funding and the Fraction of Blacks Attending School with Any Whites, Fall 1966 (Sample: Balanced Panel for 1964, 1966, and 1967)

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Variable: Δ Frac. of Blacks with Any Whites (from Fall 1964)					
Mean			0.226			
Regression Coefficients (Standard Errors)						
Constant	0.226	0.271	0.296			
	(0.014)	(0.033)	(0.031)			
Title I Per Pupil (100s of $2003)	-0.019	0.083	0.076	0.059	0.044	0.134
	(0.012)	(0.018)	(0.019)	(0.021)	(0.027)	(0.027)
Child Poverty Rate (1965, %)		-0.008	-0.009			
		(0.001)	(0.001)			
Enrollment			-0.001			
			(0.000)			
Enrollment^2/100			0.003			
			(0.001)			
R^2	0.01	0.04	0.05	0.07	0.2	0.36
Controls						
Child Poverty, Quartic				X		
Enrollment, Quartic				X		
Child Poverty (Linear)*Enrollment (Linear)				X		
Child Poverty, Fixed Effects (mults. of 5%)					X	X
Enrollment Quintiles, Fixed Effects					X	X
Child Poverty (FEs)*Enrollment (FEs)					X	X
Pre-1965 Expenditure Quintiles, Fixed Effects						X
Pre-1965 Expenditure (FEs) * Child Poverty (FEs)						X
Pre-1965 Expenditure (FEs)* Enrollment (FEs)						X
Observations (Number of Districts)	721	721	721	721	721	721

Notes: Regressions are unweighted. All regressions include as a control the fraction of blacks attending school with whites in 1964. Heteroskedasticity robust standard errors are in parentheses.

Table 5b - The Intensive Margin - Federal Funding and the Fraction of Blacks Attending School with Any Whites, Fall 1967 (Sample: Balanced Panel for 1964, 1966, and 1967)

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Variable: Δ Frac. of Blacks with Any Whites (from Fall 1964)					
Mean			0.314			
Regression Coefficients (Standard Errors)						
Constant	0.403	0.445	0.531			
	(0.029)	(0.027)	(0.034)			
Title I Per Pupil (100s of $2003)	-0.031	0.070	0.060	0.076	0.073	0.113
	(0.009)	(0.030)	(0.032)	(0.018)	(0.021)	(0.028)
Child Poverty Rate (1965, %)		-0.009	-0.009			
		(0.003)	(0.003)			
Enrollment/100			-0.001			
			(0.000)			
Enrollment^2/10000			0.004			
			(0.001)			
R^2	0.02	0.07	0.1	0.15	0.22	0.33
Controls						
Child Poverty, Quartic				X		
Enrollment, Quartic				X		
Child Poverty (Linear)*Enrollment (Linear)				X		
Child Poverty, Fixed Effects (mults. of 5%)					X	X
Enrollment Quintiles, Fixed Effects					X	X
Child Poverty (FEs)*Enrollment (FEs)					X	X
Pre-1965 Expenditure Quintiles, Fixed Effects						X
Pre-1965 Expenditure (FEs) * Child Poverty (FEs)						X
Pre-1965 Expenditure (FEs)* Enrollment (FEs)						X
Observations (Number of Districts)	721	721	721	721	721	721

Notes: See notes to Table 5a.

Table 6a - Federal Funding and Faculty Desegregation, Fall 1966
(Sample: Balanced Panel for 1964, 1966, and 1967; No Faculty Desegregation in 1964)

	Dependent Variable: Any Faculty Desegregation (=1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Mean			0.686			
Regression Coefficients (Standard Errors)						
Constant	0.761	0.791	0.792			
	(0.035)	(0.034)	(0.041)			
Title I Per Pupil (100s of $2003)	-0.029	0.100	0.099	0.094	0.040	0.059
	(0.012)	(0.033)	(0.033)	(0.034)	(0.037)	(0.045)
Child Poverty Rate (1965, %)		-0.011	-0.010			
		(0.003)	(0.003)			
Enrollment			0.000			
			(0.000)			
Enrollment^2/100			0.001			
			(0.001)			
R^2	0.01	0.03	0.03	0.04	0.16	0.29
Controls						
Child Poverty, Quartic				X		
Enrollment, Quartic				X		
Child Poverty (Linear)*Enrollment (Linear)				X		
Child Poverty, Fixed Effects (mults. of 5%)					X	X
Enrollment Quintiles, Fixed Effects					X	X
Child Poverty (FEs)*Enrollment (FEs)					X	X
Pre-1965 Expenditure Quintiles, Fixed Effects						X
Pre-1965 Expenditure (FEs) * Child Poverty (FEs)						X
Pre-1965 Expenditure (FEs)* Enrollment (FEs)						X
Observations (Number of Districts)	659	659	659	659	659	659

Notes: Regressions are unweighted. All regressions include as a control the fraction of blacks attending school with whites in 1964. Heteroskedasticity robust standard errors are in parentheses.

Table 6b - Federal Funding and Faculty Desegregation, Fall 1967
(Sample: Balanced Panel for 1964, 1966, and 1967; No Faculty Desegregation in 1964)

	Dependent Variable: Any Faculty Desegregation (=1)					
	(1)	(2)	(3)	(4)	(5)	(6)
Mean			0.798			
Regression Coefficients (Standard Errors)						
Constant	0.403	0.445	0.531			
	(0.029)	(0.027)	(0.034)			
Title I Per Pupil (100s of $2003)	-0.036	0.027	0.034	0.086	0.082	0.066
	(0.010)	(0.032)	(0.031)	(0.025)	(0.030)	(0.033)
Child Poverty Rate (1965, %)		-0.006	-0.005			
		(0.003)	(0.003)			
Enrollment/100			0.001			
			(0.000)			
Enrollment^2/10000			-0.002			
			(0.001)			
R^2	0.02	0.07	0.10	0.15	0.22	0.33
Controls						
Child Poverty, Quartic				X		
Enrollment, Quartic				X		
Child Poverty (Linear)*Enrollment (Linear)				X		
Child Poverty, Fixed Effects (mults. of 5%)					X	X
Enrollment Quintiles, Fixed Effects					X	X
Child Poverty (FEs)*Enrollment (FEs)					X	X
Pre-1965 Expenditure Quintiles, Fixed Effects						X
Pre-1965 Expenditure (FEs) * Child Poverty (FEs)						X
Pre-1965 Expenditure (FEs)* Enrollment (FEs)						X
Observations (Number of Districts)	713	713	713	713	713	713

Notes: See notes to Table 6a.

Table 7 - Alternative Specifications for the Incentive

	Dependent Variable:					
	Any Desegregation (=1)		Δ Fraction of Blacks with Any Whites (from 1964)		Any Faculty Desegregation (=1)	
	(1)	(2)	(3)	(4)	(5)	(6)
Fall 1966: Regression Coefficients (SEs)						
Title I/Pre-1965 Spending (Per Pupil, %)	0.003	0.001	0.009	0.015	0.006	0.001
	(0.005)	(0.006)	(0.004)	(0.004)	(0.004)	(0.005)
R^2	0.2	0.32	0.25	0.36	0.04	0.19
ln (Title I Per Pupil)	0.052	0.087	0.121	0.317	0.171	0.109
	(0.098)	(0.125)	(0.067)	(0.079)	(0.106)	(0.124)
R^2	0.18	0.32	0.2	0.36	0.16	0.29
Fall 1967: Regression Coefficients (SEs)						
Title I/Pre-1965 Spending (Per Pupil, %)	0.006	0.007	0.012	0.016	0.007	0.013
	(0.003)	(0.004)	(0.004)	(0.004)	(0.003)	(0.005)
R^2	0.16	0.29	0.25	0.33	0.24	0.35
ln (Title I Per Pupil)	0.058	0.107	0.200	0.325	0.252	0.165
	(0.078)	(0.089)	(0.067)	(0.078)	(0.084)	(0.091)
R^2	0.14	0.28	0.21	0.33	0.24	0.34
Controls (Fixed Effects)						
Pre-1965 Expenditure (quintiles)		X		X		X
Child Poverty * Pre-1965 Expenditure		X		X		X
Pre-1965 Expenditure * Enrollment		X		X		X
Observations (Number of Districts)	562	562	721	721	713	713

Notes: Regressions are unweighted. Heteroskedasticity robust standard errors are in parentheses. All regressions include fixed effects for child poverty (in multiples of 5%), fixed effects for (current) enrollment quintile, and their interreactions. Regressions in columns (1) to (2) are limited to districts with no student desegregation in 1964, and regressions in columns (5) and (6) are limited to districts with no faculty desegregation in 1964. Regressions in columns (3) to (6) include as a control the fraction of blacks attending school with whites in 1964.

Table 8 - Federal Funding and Title VI Compliance

	Dependent Variable:			
	Federal Funding Deferred or Terminated (=1)		**No Plan or Plan Unacceptable (=1)**	
	(1)	**(2)**	**(3)**	**(4)**
Fall 1965				
Mean	0.074		0.090	
Regression Coefficient (Standard Error)				
Title I Per Pupil (100s of $2003)	0.058	0.064	0.135	0.165
	(0.035)	(0.047)	(0.038)	(0.046)
R^2	0.192	0.308	0.224	0.353
Fall 1966				
Mean	0.154			
Regression Coefficient (Standard Error)				
Title I Per Pupil (100s of $2003)	-0.012	-0.035		
	(0.028)	(0.037)		
R^2	0.189	0.295		
Fall 1967				
Mean	0.111		0.069	
Regression Coefficient (Standard Error)				
Title I Per Pupil (100s of $2003)	-0.053	-0.076	-0.026	-0.031
	(0.026)	(0.032)	(0.019)	(0.024)
R^2	0.213	0.348	0.147	0.289
Controls (Fixed Effects)				
Child Poverty (mults. of 5%)	X	X	X	X
Enrollment (quintiles)	X	X	X	X
Child Poverty * Enrollment	X	X	X	X
Pre-1965 Expenditure (quintiles)		X		X
Pre-1965 Expenditure * Child Poverty		X		X
Pre-1965 Expenditure * Enrollment		X		X
Observations (Number of Districts)	721	721	721	721

Notes: Regressions are unweighted. Heteroskedasticity robust standard errors are in parentheses. All regressions include as a control the fraction of blacks attending school with whites in 1964.

Table 9 - Specification Check: Federal Funding and Previous Desegregation Activity

	Any Desegregation, 1964		Under Court Order, 1964		Fraction of Blacks with Any Whites, 1964	
	(1)	(2)	(3)	(4)	(5)	(6)
Mean	0.221		0.044		0.030	
Regression Coefficient (Standard Error)						
1965 Title I Per Pupil (100s of $2003)	0.034	-0.037	-0.004	0.005	-0.007	0.011
	(0.028)	(0.049)	(0.015)	(0.026)	(0.007)	(0.018)
R²	0.238	0.335	0.131	0.269	0.128	0.211
Regression Coefficient (Standard Error)						
1966 Title I Per Pupil (100s of $2003)	0.042	0.034	0.007	0.019	0.005	0.023
	(0.022)	(0.030)	(0.010)	(0.017)	(0.006)	(0.013)
R²	0.238	0.341	0.109	0.256	0.125	0.218
Regression Coefficient (Standard Error)						
1967 Title I Per Pupil (100s of $2003)	0.008	0.009	0.009	0.015	0.001	0.019
	(0.021)	(0.029)	(0.009)	(0.016)	(0.006)	(0.011)
R²	0.237	0.338	0.108	0.250	0.124	0.215
Controls (Fixed Effects)						
Child Poverty (mults. of 5%)	X	X	X	X	X	X
Enrollment (quintiles)	X	X	X	X	X	X
Child Poverty * Enrollment	X	X	X	X	X	X
Pre-1965 Expenditure (quintiles)		X		X		X
Pre-1965 Expenditure * Child Poverty		X		X		X
Pre-1965 Expenditure * Enrollment		X		X		X
Observations (Number of Districts)	721	721	721	721	721	721

Dependent Variable:

Table 10 - Specification Check: Does Federal Funding Affect the Type of Plan Submitted?

	Dependent Variable:					
	Court Order Submitted, 1967		Voluntary Plan Submitted, 1967		Form 441 Approved, 1967	
	(1)	(2)	(3)	(4)	(5)	(6)
Mean	0.250		0.626		0.121	
Regression Coefficient (Standard Error)						
1967 Title I Per Pupil (100s of $2003)	-0.012	-0.030	0.003	-0.018	0.020	0.058
	(0.027)	(0.033)	(0.028)	(0.036)	(0.015)	(0.023)
R^2	0.256	0.369	0.229	0.342	0.305	0.400
Controls (Fixed Effects)						
Child Poverty (mults. of 5%)	X	X	X	X	X	X
Enrollment (quintiles)	X	X	X	X	X	X
Child Poverty * Enrollment	X	X	X	X	X	X
Pre-1965 Expenditure (quintiles)		X		X		X
Pre-1965 Expenditure * Child Poverty		X		X		X
Pre-1965 Expenditure * Enrollment		X		X		X
Observations (Number of Districts)	721	721	721	721	721	721