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THE IMPACT OF MINORITY REPRESENTATION ON POLICY OUTCOMES: EVIDENCE FROM THE U.S. STATES

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Abstract

Over the last forty years, racial minorities in the United States have made substantial progress in achieving greater representation in legislatures. However, there is surprisingly little empirical evidence as to whether this has had any direct impact on policy outcomes. Exploiting two instances of 'exogenous shocks' that led to large increases in the number of African American legislators, this paper empirically tests the relationship between descriptive representation of minorities and substantive representation of their interests. By examining the school district-level data from the 1970s through the late 1990s across the United States, the paper finds statistically robust evidence that the political representation of African Americans is associated with a more equitable allocation of state aid to school districts, which suggests that representation of traditionally underrepresented groups can lead to tangible changes in public policy. The results are robust to controls for the effects of other political and demographic factors.

The Impact of Minority Representation on Policy Outcomes: Evidence from the U.S. States *

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For racial minorities in the United States, the last forty years have been a struggle to achieve fair and equal political representation. Before the passage of the Voting Rights Act in 1965, African Americans in the South were largely deprived of the right to vote, as well as of the right to be represented in the legislature. Over the last forty years, this situation has dramatically improved. Concerted efforts by federal agencies and civil rights activists have gradually removed barriers to political participation. At the same time, racial minorities have been increasingly incorporated into the legislative arena at both the national and state levels. The number of African American members of Congress increased from only four in 1962 to 39 in 2000. State legislatures across the country experienced a comparable surge; the number of state legislative seats occupied by African Americans was a mere 168 out of 7,352 total seats in 1970. By 2000 that number had increased to 571.

While minority groups achieved greater "descriptive" representation during the forty-year period since the Voting Rights Act, it is yet to be understood whether such an increase had any direct impact on policy outcomes. A group's descriptive representation in the legislative body has value in itself, but representation becomes purely symbolic if it does not bring about policy outcomes that reflect the interests of traditionally underrepresented groups. Such "substantive" representation should matter a great deal for minority groups, especially when minorities have a different set of preferences than those of the majority,[1] or, more importantly, when their underrepresentation is attributable to a history of discrimination that may also have tilted policies against minority interests.

Have the developments of the past forty years resulted in substantive representation, rather than just descriptive representation, for African Americans in the United States? This paper answers that question by examining state public policy outcomes, using extensive data from 1970 to the

late 1990s. This study departs from the past literature in a major way by estimating the impact of minority representation on *actual* policy outcomes. While several other studies have measured the impact of minority representation on legislative behavior (e.g., roll-call voting) or on an ideological composition of the legislature, no previous work has *comprehensively* examined the effects of minority representation on actual policies using a credible research design.[2] To fill this void, this paper analyzes policy outcomes in an area that is of primary interest to African Americans and tests if increased minority representation has produced important changes in public policies.

The impact of minority legislative representation on policy outcomes is not immediately obvious. On the one hand, gaining access to a representative body provides minority groups with advocates in the legislature. We may expect such impact to be large when groups that gain political representation have policy preferences that are distinct from those of previously overrepresented groups. For example, scholars have devoted significant attention to the impact of female representation, finding that greater representation of women has had consequential effects on policy outcomes in some areas (Besley and Case 2003 for a review). On the other hand, because these groups are likely to constitute only a minority within a legislature, their influence on policy-making processes may well be negligible.

In the case of racial and ethnic minorities in the United States, the fact that minority representation is usually achieved through the creation of majority-minority districts complicates the issue. The creation of majority-minority districts can have an offsetting consequence for minorities by shifting the ideological composition of a particular legislature to the right of the political spectrum (e.g. Swain 1993, Lublin 1997, but also see Shotts 2002). This conservative shift happens because majority-minority districts often make surrounding districts more white and more conservative (because minorities predominantly tend to vote Democratic). Thus, as long as minority representation

is attained through racial redistricting, minority representation may well hurt minorities, in spite of the ostensibly benign intentions associated with the creation of such districts. Similarly, as a result of race-conscious districting, white legislators may no longer find it necessary to be responsive to minority concerns, if minorities are removed from their districts to newly-created majority-minority districts. In sum, the net effect of minority representation is not immediately obvious when it is achieved through racial redistricting. Although racial redistricting might result in a small gain in the number of minority legislators, the potential conservative shift may outweigh the benefits for minorities.

In addition, empirical results on the effects of minority representation have been inconclusive at best. Past studies typically examine Congressional roll-call voting records or the legislators' ideological positions in order to measure the overall effects of minority representation. In an influential study, Swain (1993) examines roll-call behavior of both black and white members of Congress and concludes that white legislators can adequately represent minority interests. Subsequent studies offer mixed evidence in support of her findings (Bullock 1995, Cameron, Epstein, and O'Halloran 1996, Lublin 1997, and Canon 1999). Meanwhile, returning to the issue of racial redistricting, Shotts (2003) shows that there is no perverse effect to this redistricting practice; the fraction of southern legislators who are to the left of the House median increased, rather than decreased, after the creation of majority-minority districts in the early 1990s (but also see Lublin and Voss 2003). Finally, in a careful and thoughtful analysis, Canon (1999) examines various types of legislative activities aimed at representing black interests (e.g. bill sponsorship and floor speeches) and finds that black members of Congress are more responsive to minority concerns compared to white legislators. Although these past studies are suggestive, what they lack is evidence on how minority representation has directly affected the day-to-day lives of minorities. Changes in roll-call behav-

ior may constitute one form of change, but it is unclear to what extent these changes alter the historically disadvantaged position of minority groups in the United States. To assess the effects of political representation in a more direct manner, this paper examines actual policy outcomes, rather than legislative behavior of representatives.

To empirically measure the impact of minority representation, I create a panel data set that includes information on both the number of minority state legislators as well as on state policy outcomes in all contiguous states from 1970 to the late 1990s. The policy area that I examine is public education finance and the unit of analysis is public school district. Two observations motivate the decision to study school finance. First, there is a large funding disparity between districts with low minority enrollment and those with high minority enrollment because the funding level highly reflects property values in districts. School districts with a large number of minority students, particularly urban districts, often lack a tax base to provide sufficient funding for education. Despite efforts to tax themselves at a higher rate, high minority enrollment districts' per-pupil expenditures are still fewer than those of wealthy school districts that are typically located in suburban areas and have a low enrollment of minority students (U.S. Dept. of Education 1998). Second, nearly half of the revenues available to public school districts come from state governments, meaning that state-level education finance policy is a highly influential policy area that can greatly affect the conditions of school districts and their students.[3]

Representing constituencies that face disadvantages in raising local funds, minority legislators may try to reduce the funding gap by allocating more state funds to minority or poor districts, to supplement their scarce property tax incomes. My empirical results suggest this is indeed the case. In states where African Americans gained greater representation, high minority enrollment districts saw a greater increase in state aid compared to high minority enrollment districts in states where

African Americans remained underrepresented in the state legislature.

More specifically, by regressing changes in the level of state aid to school districts on changes on the degree of minority representation, I examine whether the increased presence of minority policymakers changed the way that states distributed financial resources to local school districts. Since the adequacy of education funding correlates highly with the racial composition of districts, if minority representation matters in a substantive sense, then the amount of intergovernmental transfers to minority districts should increase once minorities achieve greater representation. I do not specify mechanisms through which minority legislators influence education-finance policies, nor do I observe actual legislative processes (such as their committee assignments or the size of the black caucus). Thus the empirical result presented here constitutes an indirect piece of evidence on the policy impact of minority representation. However, the subsequent section contains various forms of robustness checks in order to ensure that I do not erroneously attribute the policy shift to minority representation when other factors are in fact driving the results.

One of the potential problems associated with explaining public policy by the level of minority representation is the possible endogeneity of the black representation variable that appears as a regressor. If some unobservable characteristics of a particular state (for example, state ideology) determines both the number of black legislators and the generosity of state education finance policies, then the estimated effects are likely to be biased. For instance, if liberal states tend to elect more minorities and, at the same time, are more likely to enact policies that serve minority interests (c.f. Wood and Theobald 2003), then the effects of minority representation in the legislature will be overestimated. To deal with this issue, the specification detailed below always includes state-fixed effects, which eliminate time-invariant state specific unobserved factors. In addition, in order to further guard against potential endogeneity, this paper utilizes two instances of exogenous policy

changes that led to a large growth in the number of black officeholders over a relatively short period of time.

As described in the next section, these two events undoubtedly enhanced minority representation for reasons that are unrelated to factors found in individual states, providing ample and exogenous variations in the number of black elected officials. Thus, these two cases enable us to isolate the effects of minority representation from the impact of other factors that can also move education finance policies in the same direction. Exploiting these changes, this paper finds that increased minority representation is associated with greater targeting efforts to direct more aid to minority and poor school districts by the state government. Therefore, the empirical results indicate that minority representation bears more than symbolic meaning.

Historical Background: The Voting Rights Act and its Impact

This section briefly describes the development of the Voting Rights Act and a series of important Supreme Court decisions in the 1970s and 1980s.[4] The purpose of this section is to summarize these events and then to show how these events radically transformed the racial composition of state legislatures, especially in the South. Since these events were national in scope, neither they nor the rise in the number of minority legislators associated with them, were directly caused by factors found in any individual state. This property is particularly important in order to obtain clean identification. Two events are relevant for the purpose of this paper: (1) the transition from multimember state legislative districts to single-member districts in several southern states in the 1970s; (2) the creation of majority-minority districts during the 1990s round of redistricting.

The first event was closely associated with the unprecedented power of the Department of Justice to object to discriminatory practice under section 5 of the Voting Rights Act. Section 5 requires

states and localities with a history of discrimination to obtain approval from the Justice Department for any new or changed voting-related statutes (the "preclearance" requirement).[5] During the 1960s, racial gerrymandering and the extensive use of at-large multimember districts that dilute minority voting power strength were very common in the South.[6] Note that it is almost impossible for racial minorities to get elected in this type of system, in which all candidates run at-large, because they can never constitute a majority of the district population. For this reason, the Justice Department objected to (i.e. did not preclear) such district plans during the 1970s round of redistricting (U.S. Commission on Civil Rights 1975).

In addition, the following years brought many successful court cases filed by minority plaintiffs. In 1972, a federal district court invalidated further use of multimember legislative districts in Alabama, at least in part to prevent minority vote dilution (*Sims v. Amos*). In addition, in 1973, two important court cases (*White v.Regester*, *Zimmer v.McKeithen*) ruled that plaintiffs in vote dilution cases do not have to provide proof of discriminatory *intent* and that vote dilution should instead be judged by the "totality of circumstances" (*White*) or by eight factors (*Zimmer*). Following *White* and *Zimmer*, the number of constitutional challenges to election procedures significantly increased at all levels of government. At-large and multimember district systems were particularly prone to attack.

The developments in the early 1970s led to substantial litigation and persistent intervention in redistricting processes by the Justice Department, as well as the creation of district plans by federal courts. These combined efforts subsequently resulted in the elimination of multimember districts in several southern states. Louisiana introduced single-member districts in its lower house in 1972; Alabama in 1974, South Carolina in 1975, and Mississippi in 1978. In each state, resistance by white members of state legislatures was substantial, and it often required many years of efforts to

dismantle discriminatory electoral laws (U.S. Commission on Civil Rights 1975, Hardy, Heslop, and Anderson 1981).

The impact of the shift from multimember to single-member districts on the level of minority representation was dramatic (Table 1). After the Alabama state house had its first legislative election under a single-member plan in 1974, the number of minority legislators increased from 0 in 1970 to 15 in 1975. In South Carolina, when the state legislature finally adopted a single-member district plan for its state house, the number of African Americans in the lower house rose from 0 (1970) to 13 (1975). To illustrate the change, Table 1 reports the total number of African Americans represented in state legislatures in 1970 and in 1980. We observe a large increase in the number of African American legislators in states where the federal intervention successfully lead to an introduction of single-member districts. By contrast, in the other southern states where multimember districts were primarily used throughout the period, the increase was modest. Given the widespread white resistance toward black officeholding during the period and the magnitude of the resistance to the outside intervention, it is obvious that these southern states would not have introduced single-member districts had it not been for the Department of Justice's intervention. Thus, the increase is clearly attributable to the outside, or exogenous, forces.

Another instance of a sudden and large increase in the number of minority legislators occurred in the early 1990s, when a large number of states created the maximum number of majority-minority districts during the 1990s round of redistricting. Two events contributed to this effort. First, Congress amended section 2 of the Voting Rights Act in 1982 to explicitly prohibit any voting schemes that *result* in minority vote dilution. This meant that minority plaintiffs no longer had to prove discriminatory *purpose* of election laws in order to challenge them. In addition, the language of the new section 2 suggested that the proportion of majority-minority districts should approximate

the share of the population consisting of minorities. That was the interpretation of the time, although the section included a statement that it would not guarantee proportional representation. In addition, because the section covered the entire nation (in contrast to section 5, which covered only some states), any jurisdiction with a large minority population was now vulnerable to a section 2 challenge for minority vote dilution practice.

Second, the Supreme Court ruled in *Thornburg v.Gingles* (1986) that only simple factors – mainly the existence of "racially polarized" bloc voting – would justify overturning discriminatory electoral schemes. The decision "was enormously significant because it simplified decisions in voting cases and added greater predicability." (McDonald 1992: 69) Thus as long as it can be shown that white voters and black voters vote differently, then the creation of majority-minority districts would now be justified.

Consequently, when states started decennial redistricting processes after the 1990 census, they were under tremendous pressure to create the maximum number of majority-minority districts possible (e.g. Donovan 1991, Duncan 1991). In some cases, the creation of such districts was done at the insistence of the Justice Department. Encouraged by the development in the 1980s, "the Justice Department exercised its section 5 preclearance power extremely aggressively after the 1990 census" (Lowenstein 1998: 62).

As a result, the number of majority African American state legislative districts in states with a black population exceeding 10 percent increased from 16 in 1990 to 50 in 1992,[7] which was followed by a great increase in the level of minority representation in a relatively short period of time. In 1990, the number of African American legislators represented in state legislatures around the country was 404, but it grew significantly to 509 in 1992, and it reached 566 by 1996 – a 40 percent increase since 1990. Under the threat of litigation and intervention (and actual intervention by

the DOJ), states with a large minority population had no choice but to create majority-minority districts. The increase was largely due to the events at the national level, rather than voluntary efforts to elect minority state legislators.

Data and Methods

Specification

The key public policy variable analyzed in this paper is the total amount of state aid per pupil received by school districts. When available, the amount of per-pupil general aid formula assistance revenues (which is a subset of total state aid) in the district is also used as the dependent variable.[8] If minority representation matters, one should see an increase in state transfers to high minority enrollment districts once more minorities are represented in state legislatures.

The main equation to be estimated is:

$$\Delta y_{ijt} = \alpha_0 + \alpha_1 \Delta[BlackRep]_{it} * [\%Black]_{ij} + \alpha_2 [\%Black]_{ij} + \Delta \mathbf{w}_{ijt}\beta + \gamma_i + u_{ijt}, \qquad (1)$$

where y_{ijt} is the per-capita amount of state transfer defined above and $\mathbf{w}_{ijt}$ is a vector that contains characteristics of district j in state i, and $\Delta y_{ijt} = y_{ijt} - y_{ij,t-1}$ and $\Delta \mathbf{w}_{ijt} = \mathbf{w}_{ijt} - \mathbf{w}_{ij,t-1}$. Thus, the dependent variable is the change in the amount of state transfers. $[BlackRep]_{it}$ is the percentage of seats occupied by African American legislators in the state legislature of state i in time t (see below). $[\%Black]_{ij}$ is the percentage of African American pupils in the district, and it is held constant over time. This is because I am interested in the extent to which minority districts (with a given minority population) benefit from the change in the level of minority representation. It is also because there is little variation in the variable over time at the school district level. $\mathbf{w}_{ijt}$ is other characteristics of districts that can affect levels of state aid, such as district enrollment, the number of schools, household median income, property tax income, educational attainment of

adults, poverty level, and the percentage of population living in urban areas. γ_i is a state-fixed effect, which captures time-invariant unobservable characteristics of each state, such as baseline state ideology or the state's education system. With γ_i, the main black representation term (Δ *BlackRep*) is absorbed. Note that the size of the main effects (i.e. intercepts) is not of interest here. The focus of this paper is to see how states' responsiveness to the size of minority enrollment (i.e. slope) differs when there is an increase in the level of black representation, compared to when there is no change in minority representation. In addition, interpreting the main effects would also be difficult with state fixed effects, whose coefficients include the effect of other unobservable variables.

Thus, the regressor of interest is the interaction term: $\Delta[BlackRep]_{it} * [\%Black]_{ij}$. The estimated coefficient on the interaction term measures the impact of minority representation on the funding level of districts, which is assumed to be a function of minority enrollment. If black districts benefit from having minority legislators in the state legislature, α_1 is expected to be positive. Another possibility is that minority legislators advocate the interests of poor districts, not just those of minority districts and try to target state funding to poor districts. This possibility arises because African American legislators' main constituency, African Americans, tend to be economically disadvantaged. Consequently, black legislators represent relatively poor districts. According to the author's tabulation of the state legislative district-level data in the 1990s, the average household income of state house districts that are represented by African American legislators was 29,246.60 dollars, while that of districts represented by non-Hispanic white legislators was 37,650.25 dollars.[9]

To check if the rise in minority representation is associated with greater targeted funding to poorer districts, I also interact the fraction of black legislators with district poverty, measured by the percentage of population living below the poverty line. The coefficient on this interaction term measures the extent to which poor districts benefit from the increase in minority representation.

Data

This section explains the principal sources of data in this study. Table 2 reports descriptive statistics. The dependent variable is the amount of state funds allocated to U.S. public school districts over time. Thus, all the data are measured at the school district level, except for the state-level legislative data. Using three sources of data, I created a school district-level panel data set that contains demographic, financial, and non-financial information on school districts across the United States from 1970 to 1999. Then the data set was merged with state legislative information. The years included in the analysis are 1970-72, 1980-82, and 1990-1999. The Data Appendix contains more detailed descriptions of the data and the definitions of variables.

Basic demographic information for each school district was taken from school district tabulations of the Censuses of Population and Housing (1970, 1980, 1990, 2000). The demographic variables include total population, population by race, the fraction of black students (*%Black*), median household income (*Median Income*, in 1990 dollars), the percentage of population living in poverty (*% Poverty*), living in the urban area (*% Urban*), 65 years and older (*65 yrs+ old*), educational attainment of the adults (the percentage of adult population with at least 12 years of education (*12+ yrs schooling*) and with at least 16 years of education (*16+ yrs schooling*)). When available, the percent of Hispanic enrollment (*% Hispanic*) and the percent of pupils receiving free or reduced-price lunches (*% Free Lunch*) are included in the analysis as control variables.

The sources of school finance data are the Censuses of Governments (1972, 1982) and the Survey of Local Government Finances for School Systems, known as the F-33 data (1992-1999). The financial data include the amount of intergovernmental transfers from the state government and local property tax revenue. After 1992, detailed information on the nature of state funds is also available and the data set contains a detailed breakdown of state funds from 1992 through 1999.

All financial data are expressed in constant 1990 dollars.

Finally, non-financial school district information is obtained from Elementary and Secondary General Information System (ELSEGIS) data (1972-1973, 1979-1980) and the Common Core of Data (the 1990s), created by the National Center for Educational Statistics. The data include total enrollment (*Enrollment*), the number of schools (*No. of Schools*), district types (operating/non-operating), and the grade span. The non-financial data are used to calculate per-capita measures, as well as to exclude outliers in the sample (see Data Appendix).

Each school district has a unique 7-digit NCES and 9-digit census identification number. For each year, the three types of data sets – demographic, financial, non-financial – were carefully merged by one of the ID numbers. When matching by the IDs did not work for some districts, they were carefully merged manually by state and district names. Next, the merged school district data were combined with state-level legislative information. The variable of interest in this study is the share of state legislative seats occupied by African American members (*BlackRep*). It is calculated as the total number of black legislators in both the lower and upper houses divided by the total number of state legislative seats in each state.

To check for the possibility that other political factors are affecting policy outcomes, I also collected data on the seat share of Democrats (*% Democrats*) and an indicator variable for the Democratic party's control of the governorship. The number of African American legislators is reported in various volumes of *Roster of Black Elected Officials* and the other legislative information is obtained through the ICPSR.

The data sets were then merged across time. I created two sets of data: one that contains the 1970 and 1980 data and another that contains the 1990s data. The demographic data are available only in the census years, so the financial information in 1972 was merged with the 1970 census

data, as well as with legislative and non-financial district information in 1970. Similarly, financial information in 1982 was matched with the demographic, legislative, and district data in 1980. As for the data in the 1990s, since the annual F-33 data do not report values for all districts in some years, I first made two sets of financial data by taking the average of two or more years (1992-1993 and 1997-1999) and then merged the averaged 1992-1993 data with the 1990 census data and the averaged 1997-1999 financial data with the 2000 census data. The non-financial data were merged in a similar fashion. The legislative information in 1990 was used for the first period and data from early 1997 were used for the second period. For the analysis of the 1990s event, the data contain values in the late 1990s minus those in the early 1990s. For the 1970s analysis, the 1970 data are subtracted from the 1980 data.

Estimation Results

The 1970s

As explained in Section 2, several southern states experienced a large exogenous increase in the levels of minority representation during the 1970s. Thus, I analyze public elementary and secondary school districts in the South (N=1,761) in this part of the analysis. Southern states were still quite distinct from the rest of the country during this period, and limiting the sample to southern states would facilitate comparison. In order to see if there exists any clear pattern between states that were subjected to outside intervention and those that were not, I estimate the following equation in this section, which is a simplified version of equation (1):

$$\Delta y_{ijt} = \alpha_0 + \alpha_1 [Reform]_i * [\%Black]_{ij} + \alpha_2 [\%Black]_{ij} + \Delta \mathbf{w}_{ijt}\beta + \gamma_i + u_{ijt}, \qquad (2)$$

where Δy_{ijt} is the change in state aid per pupil between 1972 and 1982. $[Reform]$ is a dummy

variable that takes a value of 1 if a state satisfies the following three conditions (see Table 1): (1) its state legislative districts were switched to single-member districts because of outside intervention, (2) covered under section 5 of the Voting Rights Act, and (3) in the Deep South. Again, the main identification problem is that states with relatively liberal ideology tend to elect more minority legislators, and at the same time are more likely to enact policies that benefit minority population. This definition of the $Reform$ variable ensures that the increase in minority representation was brought about against their will, thereby minimizing the above concern that can bias the estimates. Alabama, Louisiana, South Carolina, and Mississippi satisfy the above conditions and there are 412 school districts in these 'reform' states.[10]

Going back to Eq. (2), $[\%Black]$ is the percentage of black pupils in the district in 1970. In order to take into account potential correlations within states, all standard errors are clustered by states. Note that by clustering standard errors by states, the multi-level nature of data structure is taken into account and that the estimates are statistically equivalent to those obtained by estimating a multi-level model (e.g. Steenbergen and Jones 2002). All specifications include state-fixed effects.[11]

Table 3 reports the estimation results. The dependent variable in all columns is the change in intergovernmental transfer to a public school district from 1972 to 1982. If black representation has any positive effect on the distribution of funds to minority districts, the coefficients on the interaction terms are expected to be positive.

Column (1) reports estimated coefficients for the simplest specification, and column (2) contains an estimation result for a more complete model. In both columns, the coefficients on the interaction term (*Reform * % Black*) are positive and statistically different from zero, suggesting that the southern states that had a large increase in African Americans in the legislature transferred more state aid to districts with high minority enrollment, compared to other southern states that did not

experience such a change.

Next, I test whether the increased presence of African Americans in state legislatures is also associated with an increase in state aid to poor school districts. Columns (3) and (4) of Table 3 report estimation results when $[Reform]$ is interacted with *% Poverty*. In contrast to columns (1) and (2), the coefficients in columns (3) and (4) are not statistically significant, and the magnitude is much smaller. This implies that the impact of minority representation on the funding level of economically disadvantaged school districts is negligible. Note, however, that this result is in sharp contrast to the estimation results for the 1990s (see below).

In sum, the results in Table 3 suggest a positive link between the level of black representation and the level of state funding efforts to minority districts. The pattern holds even after controlling for districts' needs and state-specific factors. However, there does not seem to be significant effects of minority representation on the conditions of poor districts during the 1970s.

The 1990s

The estimation results for the 1970s period suggest that changes in the racial composition of legislatures can bring about a tangible shift in state policy outcomes. However, the dramatic rise in black representation was limited in several southern states during this period, thereby leaving us with a limited opportunity to measure the impact of minority political representation. To further investigate the more general effects of minority representation on policy outcomes, I exploit another instance of a sharp rise in minority representation in the early 1990s associated with the creation of majority-minority districts.

Table 4 presents estimation results of equation (1) for the 1990s period. The dependent variable is the amount of total state aid per pupil in columns (1)-(3) and the amount of general formula assistance per pupil in columns (4)-(6). The funds distributed through the general aid formula are

a subset of the total state aid and non-categorical, whereas the total amount includes funds for categorical programs, such as compensatory and basic skills programs, school lunch programs, and capital outlay program revenues (such as for construction).

I employ three different specifications to estimate the effects. In columns (1) and (4), the change in the level of black representation (Δ *BlackRep*) is interacted with the percentage of black pupils in the district (*% Black*). The Δ *BlackRep* variable is interacted with the percentage of population living in poverty (*% Poverty*) in columns (2) and (5). Again, I expect the coefficients on these interaction terms to be positive, if the presence of African American legislators is associated with positive changes in the way states distribute state aid to high minority enrollment or poorer districts. In columns (3) and (6), both of the interaction terms are included in order to measure the relative impact of minority representation on minority and poor districts. Although these two types of districts often overlap, the correlation between the two is not high at the school district level (the correlation coefficient for 1997 is 0.3984 (N=9,624)), therefore we should be able to estimate the impact separately for each type of district. To account for other factors that can affect the level of state aid, a set of regression controls are also included.

In Table 4, the estimated coefficients on the interaction terms are all positive and statistically different from zero. The results suggest that increased black representation is associated with higher funding levels for both poorer and high minority school districts. The coefficients in columns (1) and (4) are almost identical in magnitude, suggesting that black representation has a similar impact on both the level of total state aid and the amount of general formula assistance. Column (5) shows that black representation has less impact on the level of general formula assistance than on the amount of total state aid (column (2)). Since modifying aid formulas should be more challenging than distributing discretionary funds to districts (which appear in the amount of total state aid),

the result is consistent with what we would expect.

The substantive results remain the same when I include two sets of interaction terms (columns (3) and (6)), but the size of coefficients varies slightly across different specifications. Column (3) shows that the impact of black representation on the level of total state aid for minority districts is lower (0.292) when the two interaction terms are included, compared to when only the minority district interaction term is included (column (1), 0.651). Meanwhile, the coefficient on the *% Poverty* times black representation term remain quite stable across columns (2) and (3), with a size of about 1.4. In column (6), the interaction term with the percent poverty is statistically indistinguishable from zero, suggesting that the specification in column (5) potentially suffers from an omitted variable bias. Nevertheless, the estimated coefficient on the *% Black* times black representation term is not affected by the inclusion of the other interaction terms (see column (4) and (6)).

Taken together, the estimated results indicate that the level of minority representation in the 1990s positively affected the funding level of minority and poor districts. Both in the 1970s and 1990s, the presence of black state legislators is associated with states' greater targeting efforts to the neediest districts. In order to verify the robustness of these findings, next I turn to several alternative explanations for the outcomes observed in this section.

Robustness

The empirical results presented above strongly suggest that the rise in black representation in the 1970s and 1990s was followed by policy outcomes that benefited disadvantaged school districts. The estimates are robust to controls for factors that are known to affect school finance policies and to district- and state-specific factors. This subsection presents additional checks of the robustness of the results.

Effect of Mandated School Finance Reform

Since the early 1970s, interdistrict funding inequality has led less wealthy districts to challenge the constitutionality of school finance systems in various states, based on a claim that the large funding gap violated the state constitution. As of 1998, state supreme courts in various states declared their education funding system unconstitutional, thus requesting their legislatures to adopt more equitable school finance system. One may argue that the improved funding status of disadvantaged districts is due to court orders, not due to the presence of African American legislators who tend to represent such districts. Although the timing of the rulings and that of the rise in minority representation do not coincide (since each state supreme court issued rulings at different time) and also the outcomes of litigation and the level of minority representation are unlikely to be related, it is worth isolating the impact of mandated school finance reforms from that of minority legislators.

In order to examine the impact of minority representation separately from that of court intervention, I split the sample into two groups: (a) states that had no litigation, or those where state supreme courts found their education finance system constitutional, and (b) states where the system was ruled unconstitutional by the courts.[12] I then estimate equation (1) for each group to see if any distinct pattern exists between the two. If court orders are primarily driving the previous results, positive coefficients on the interaction terms should be observed only for the states where the education finance system was ruled unconstitutional. This would then suggest a spurious relationship between the level of minority representation and increased funding levels for the neediest districts. If, on the contrary, the presence of black legislators has a distinct effect on education policy outcomes, then one should see positive coefficients on the interaction terms even if no education finance reform was mandated by the courts. In fact, one can expect the effect of minority representation to be larger when there was no court intervention. This is because the court rulings

would prompt the legislature to address the fiscal disparity issue, regardless of its willingness to do so, thus making political factors largely irrelevant.[13]

In Table 5, I present estimation results for states with no court intervention in panel (a), and panel (b) contains estimation results for states where education finance systems were ruled unconstitutional. All specifications include the same set of control variables as in Table 4, as well as state-fixed effects. Comparing panel (a) and panel (b), it is clear that the effect of minority representation is estimated to be more prominent in states with no court intervention. The coefficients on the interaction terms in panel (a) are all positive and statistically different from zero (at 5 percent significance level, one-tailed test). In addition, the magnitude of the coefficients are quite comparable to those in Table 4. Contrastingly, most of the estimated coefficients in panel (b) are either statistically indistinguishable from zero or have the wrong sign. The only exception is the estimated impact of black representation on the amount of total state aid to poorer districts, which is positive and statistically different from zero (column (2) and (3), panel (b)). Overall, there does not seem to be any evidence that court-ordered school finance reforms are primarily driving the results.

Effect of Partisan Factors

Another check is to see if the estimated positive impact of minority representation is robust to the effects of other political factors, such as partisan control of the legislature. One may be concerned that the increase in African American legislators coincided with an increase in the number of Democrats in state legislatures, and that such partisan shifts, rather than the rise in black legislators, is responsible for more equitable education finance systems. While it is true that most minority representatives are Democrats, increased minority representation does not necessarily translate into an increased seat share for the Democratic party. This is most clearly illustrated by the

Republican party seat gains across the country in the mid-1990s, both at the national and state levels, despite the large increase in black representation. In order to formally abstain from the effect of such confounding political factors, I add the percentage of Democratic legislators and an indicator variable that measures the partisan control of the governorship to the model. Because partisan factors are largely irrelevant in the South during the 1970s, I estimate modified equations only for the 1990s period.[14]

The estimation results show that the positive impact of minority representation is robust to the effects of other political factors. The estimated coefficients on the Δ *BlackRep* interaction term are still positive and statistically different from zero, even after controlling for the effect of the partisan control of the state legislature and governorship. In addition, the magnitude of the coefficients is quite comparable to the estimation results in Table 4. I also estimate the effect separately by the litigation status of states, and the results again confirm the previous conclusion. Thus, the observed outcomes are not attributable to changes in other political factors.

Effect of School Desegregation

Another potential alternative explanation for the 1970s results is that school desegregation proceeded somehow more quickly in the 'reform' southern states during the period. Because school integration can be costly (e.g. busing), the increased funding level found in the previous section may simply reflect such costs, rather than efforts by minority representatives to improve conditions of minority school districts. In order to check this possibility, I examine the rate of school integration in the South during the period, using the school-level data for the period of 1970-1982. The restricted-access biennial data contain enrollment information by race for each public elementary and secondary school and are provided by the Office for Civil Rights of the Department of Education. Using this school-level panel data set, I calculate a commonly-used index called the black

exposure index to measure the rate of school integration for each school district in the South. The index measures the exposure of black students to white students at a typical black school.[15] It takes a value of between 0 and 1, and 1 means complete racial integration. Figure 1 shows the trend in the average value of the index. According to Figure 1, there is no evidence that school desegregation happened more rapidly in the 'reform' southern states. The integration rate is fairly stable during the 1970s and the integration rate is always higher among the 'no-reform' southern states.

Effect of Changing Attitudes among Voters and Politicians

One may also argue that residents – policy-makers and citizens alike – of the 'reform' southern states may have softened their attitudes against African Americans during the 1970s, compared to those residing in the 'no-reform' southern states and that such changing attitudes would have led to the improved conditions of minority school districts even without the presence of black state legislators. In order to rule out this possibility, I check the trend in citizens' opinion regarding African Americans as well as the trend in roll-call behavior of the Members of Congress in the South. If the above claim is true, we should observe a distinct pattern in citizens' attitudes or in politicians' voting records between the 'reform' and 'no-reform' southern states.

For the purpose of measuring citizens' attitudes toward African Americans, I use the American National Election Studies conducted between the late-1960s and 1982. I measure the general attitude of white respondents towards African Americans by a series of feeling thermometer questions and also by questions regarding aid to minority groups. The feeling thermometer question asks respondents the warmness of their feelings towards African Americans and the aid to blacks question asks respondents whether the government should help African Americans and other minority groups to improve their social and economic positions or they should help themselves. Neither of the measures shows strong evidence that the white respondents in the 'reform' southern states

became more 'friendly' towards African Americans during the period of this study.[16]

A final check is to see if there was any noticeable change during the 1970s in legislative behavior among policy-makers from the 'reform' southern states. Ideally one would examine ideological positions of state legislators, but lacking such data, I turn to the ideological scores of the U.S. House members instead. I examine the trend in the average DW-NOMINATE Scores (1st dimension) of the House members from three groups of states (the 'reform' and 'no-reform' southern states, and non-southern states) for the period of 1969-1983 (91st-98th Congresses). The representatives of the two groups in the South were ideologically very close, and follow a similar trend during the period. Again, there is no evidence that the 'reform' southern states became ideologically closer to non-southern states relative to 'no-reform' southern states. The results are similar for the 2nd dimension.

Conclusion

Despite the importance of the issue, few previous studies have investigated the impact of minority representation on actual policy outcomes. Exploiting exogenous and large variations in the level of minority representation in state legislatures, this paper finds that representation of traditionally underrepresented groups can lead to tangible changes in policy outcomes. More specifically, the central empirical findings of this paper can be summarized as follows. First, during the 1970s, southern states that experienced a sudden surge in black representation exhibited more targeting efforts to minority districts, thus narrowing the funding gap between black and white districts. Such shifts were not observed in other southern states where the level of minority representation remained low throughout the decade. Second, another large gain in minority representation in the early 1990s was again associated with greater efforts to allocate more state funds to disadvantaged districts. Thus, in both periods, the level of black representation is positively correlated with the

funding level of districts with the greatest needs. These results imply the general policy impact of African American state legislators, especially in addressing disparities in education funding.

The data set compiled for this study also reveals that the presence of racial minorities in the legislature seemed to have positively affected minorities as a whole, not just those residing in districts represented by African American state legislators. During the 1970s, high minority enrollment districts in the South experienced a similarly large increase in aid from the state government regardless of whether they were actually represented by a black legislator or not.[17] It implies that black state legislators try to advocate on behalf of the broader interests of African Americans, rather than merely bringing back goods to their own districts. Thus, the benefit of gaining access to the legislative arena can be broad and general.

From this empirical analysis, I do not seek to draw any inferences regarding the merit of racial redistricting or that of federal intervention – it is simply beyond the scope of this paper. Furthermore, the empirical results of this study should not be interpreted as suggesting that white legislators cannot adequately represent minority interests. Rather, the main message of this paper is that legislatures that incorporate minority members of the society are more likely to adopt policies that reflect the interests of the traditionally underrepresented groups. This by no means rules out the possibility of the advancement of minority interests by like-minded members of the majority group. In addition, as some authors argue, under certain circumstances it may be better for black voters to be influential in a district represented by a white legislator, rather than being packed in a majority-minority district. But the empirical results in this study suggest that the *overall* effect of actual minority representation is positive, and not trivial. Descriptive representation of racial minorities can result in substantive representation of minority interests. The voices of minority groups are more likely to be heard when members of these groups are actually present and advocate

their interests in legislatures. Thus, racial composition of legislatures does matter, not just in a symbolic sense, but also for policy outcomes that reflect diverse interests of society.

Endnotes

1. As is well documented, racial minorities in the United States tend to have different policy concerns and face a distinct set of challenges in their everyday lives. As of 2000, 22 percent of black individuals lived below the poverty level, while 7.5 percent of non-Hispanic whites lived in such conditions (U.S. Dept. of Education 2004, p. 131). The figure is even starker for children; 30.9 percent of black children and 28 percent of Hispanic children are living below the poverty line, while the figure for their white counterparts is 9.4 percent. The condition of public schools (such as the quality of their physical plants) with a large minority enrollment tends to be worse than those of schools whose students are mostly white (U.S. Dept. of Education 2000). On policy preferences, see, for example, Tate 2003 and Kinder and Sanders 1996.

2. As described below, the biggest issue with this type of work is that the level of minority representation can be endogenous. Previous studies fail to address the endogeneity problem (Haynie 2001, Preuhs 2006). Other related studies (that also ignore the issue of endogeneity) base their conclusion on limited cases and examine policy areas that may be largely symbolic or has limited impact (such as hiring of minority teachers and administrators) (e.g. Meier and England 1984, Meier, et. al. 2005).

3. State and local funding play a much larger role in school finance than federal aid. As of 1990, 93 percent of the revenues for elementary and secondary school districts come from state and local sources (U.S. Dept. of Education 2004).

4. For more complete description of the background, see, for example, Davidson 1992, McDonald 1992, and Davidson and Grofman 1995, Lowenstein 1998, O'Rourke 1998.

5. They are originally six southern states (Alabama, Georgia, Louisiana, Mississippi, South Carolina, and Virginia) and parts of North Carolina. States that employed a literacy test (or similar

device) and had a registration rate of less than 50 percent of the voting age population as of 1964 were subject to the section 5 preclearance requirement.

6. Multimember districts are used in conjunction with other requirements (such as the numbered post, full-slate requirement, or candidate residence requirement) to further dilute minority voting power strength.

7. Calculated by the author based on the percent of majority African American districts provided in Handley, Grofman, and Arden 1998. The number in 1990 does not contain the number of majority-black districts in Arkansas and New Jersey and the number in 1992 does not include the number of majority-black districts in Alabama, because Alabama did not finish redistricting by 1992.

8. General aid formula assistance revenues are general non-categorical assistance from the state government. Each state employs a different formula and states use complicated, and often multiple, funding formulas to allocate state funds to local school districts. Types of general formula programs include foundation program, minimum or basic formula support, power equalization, variable guarantee plans, flat or block grants. Examples of items included in the total state aid, but not in general formula assistance, are: funds for special education programs, transportation, staff improvement, compensatory and basic skills programs, school lunch programs, bilingual programs, and capital outlay for school construction and building aid.

9. The method of calculation and data sources available upon request.

10. Georgia is a borderline case as it satisfies condition (2) and (3), and its legislative districts were switched to mostly single-member districts, especially in areas where African Americans are concentrated. The previous version of the paper included Georgia in the 'reform' states, and the inclusion of Georgia does not change any of the substantive results below. The Georgia Legislature adopted some single-member house districts in several urban counties in response to a court decision

in 1965, which explains its relatively high level of black representation in 1970.

11. The specification also includes the change in the black enrollment ($\Delta\%Black$). Excluding the $\Delta\%Black$ does not substantively affect the coefficient estimates of other variables, including the one on the interaction term.

12. They are CA, NJ, CT, WA, WV, WY, AR, TX, KY, MT, TN, AL, MA, NH, VT, OH, and SC. Information is as of 1998.

13. However, it should also be noted that the court ruling itself does not automatically bring about equitable funding system, therefore political factors can still play a major role. State supreme courts merely direct the legislature to improve upon the existing system, and actual reforms are subject to legislative action and approval. Not surprisingly, one can find cases in which the court orders failed to bring successful changes in education finance systems because of legislative gridlock. See Carr and Fuhrman 1999. The overall impact of court ordered reform on funding equity is estimated to be positive (Murray, Evans, and Schwab 1998).

14. Results available upon request.

15. It is defined as $E_j = \sum_i \left[p_{ij}^W \times \left(\frac{n_{ij}^B}{n_j^B} \right) \right]$, where where j denotes school district, i denotes school, p_{ij}^W is the fraction of white pupils in school i in school district j, n^B is the number of black pupils (e.g. Welch and Light [1987]).

16. Details available upon request.

17. Details available upon request.

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Table 1
The Number of African American State Legislators in the South: 1970-1980

	AL	MS	SC	LA	TX	GA	TN	AR	FL	VA	NC
1970	0	1	0	1	3	14	8	0	1	3	1
	(0%)	(0.6%)	(0%)	(0.7%)	(1.7%)	(5.9%)	(6.0%)	(0%)	(0.6%)	(2.1%)	(0.5%)
1980	16	17	15	12	13	23	13	5	4	5	3
	(11.4%)	(9.8%)	(8.8%)	(8.3%)	(7.2%)	(9.7%)	(9.8%)	(3.7%)	(2.5%)	(3.5%)	(1.7%)
Increase	11.4	9.2	8.8	7.6	5.5	3.8	3.8	3.7	1.9	1.4	1.2
Switch to SMD	Yes	Yes	Yes	Yes	Yes	(a)	(b)	No	No	No	No
VRA Sec.5	Yes	Yes	Yes	Yes	(c)	Yes	No	No	No	Yes	(d)
Deep South	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	No

Notes: The total number of African Americans in state legislatures (state house and senate combined) shown. Information as of February 1970 and July 1981. Numbers in parenthesis denote the percentages of state legislative seats occupied by African American members.
(a) Georgia switched to SMDs in areas where African American population is concentrated; MMDs were employed in other areas.
(b) Tennessee switched to SMDs before 1970.
(c) Texas was included in section 5 coverage in 1975 when it was expanded to protect language minorities.
(d) North Caroline is partially covered.

Sources: Metropolitan Applied Research Center and Voter Education Project 1970; Joint Center for Political and Economic Studies 1971, 1981; U.S. Commission on Civil Rights 1975; various chapters in Hardy, Heslop and Anderson 1981; Davidson and Grofman 1995; Berry and Carsey 2004 (ICPSR Study No. 3938).

Table 2
Descriptive Statistics – Unweighted District Means

	1970-1972	1980-1982	1990-1993	1997-2000
% black state legislators (All states)	3.554	5.358	6.231	8.092
% black state legislators (South)	1.439	6.795	8.992	13.175
% black enrollment	7.042	–	7.519	7.941
% black in district population	5.609	5.531	5.411	5.789
State transfer per pupil (total)	1292.19	2117.92	2440.50	2956.11
State transfer per pupil (formula aid)	–	–	1818.43	2303.20
Per capita property tax revenue	304.76	312.48	326.71	309.66
Median household income (thousands)	19.117	25.085	26.086	32.339
% population living under poverty	13.903	13.092	14.143	12.053
% population living in urban area	33.283	35.541	36.341	40.745
% Hispanic enrollment	–	–	5.441	6.516
% population with 12 yrs+ Schooling	47.947	64.334	73.270	79.721
% population with 16 yrs+ Schooling	7.529	10.401	13.872	17.921
% pupils with free/reduced-price lunch	–	–	25.600	27.443
% population over 65 years of age	–	–	14.457	14.428
Enrollment	3612.6	3549.6	3720.5	4065.6
Number of schools in district	7.59	7.22	7.18	7.62
Number of observations	8109	8109	9624	9624

Notes: Data represent the U.S. elementary and secondary public school districts in 47 states (districts in Alaska, Hawaii, DC, and Nebraska not included). All dollar amounts are in 1990 dollars. Cells are left empty when data are not available in the corresponding year. % Black Enrollment in the 1980s is available only for the southern states.

Table 3
Effect of Minority Representation on Levels of State Aid in 'Reform' Southern States: 1972-1982
Dependent variable: changes in state aid per pupil

	(1)	(2)	(3)	(4)
% Black * Reform	3.262	2.989		
	(1.578)	(1.446)		
% Poverty * Reform			0.602	-0.208
			(3.297)	(3.361)
% Black	2.173	2.092		
	(0.969)	(0.789)		
% Poverty			7.465	11.780
			(1.275)	(1.862)
Δ % Black		4.259		3.645
		(2.478)		(2.041)
Δ % Poverty		-0.940		11.731
		(2.602)		(4.479)
Δ Property Tax		-0.513		-0.521
		(0.053)		(0.054)
Δ % Urban		-0.811		-0.592
		(0.542)		(0.538)
Δ Median Income		-3.680		5.914
		(3.728)		(4.559)
Δ 12 yrs+ Schooling		-3.262		-2.754
		(2.321)		(2.032)
Δ 16 yrs+ Schooling		-0.129		3.949
		(4.101)		(4.313)
Δ Enrollment		-0.010		-0.012
		(0.005)		(0.005)
Δ No. of Schools		-1.120		2.967
		(6.426)		(5.334)
Observations	1761	1756	1761	1756
R-squared	0.39	0.43	0.40	0.45

Notes: Data represent elementary and secondary public school district observations in the South from 1972 and 1982. *Reform* is a dummy variable that takes a value of 1 for the "reform" southern states (AL, LA, MS, SC). Robust standard errors (clustered by states) in parentheses. All models include state fixed effects and weighted by district enrollment in 1970.

Table 4 Effect of Minority Representation on Levels of State Aid: 1992-1997

	Δ Total State Aid			Δ Formula Assistance		
	(1)	(2)	(3)	(4)	(5)	(6)
% Black * Δ BlackRep	0.651	–	0.292	0.656	–	0.624
	(0.066)		(0.087)	(0.058)		(0.077)
% Poverty * Δ BlackRep	–	1.445	1.425	–	0.502	0.054
		(0.176)	(0.239)		(0.156)	(0.210)
% Black	-3.750	–	-3.898	-5.042	–	-5.844
	(0.332)		(0.365)	(0.292)		(0.320)
% Poverty	–	-1.010	3.212	–	0.009	6.421
		(0.926)	(1.006)		(0.822)	(0.883)
Δ % Black	-5.208	-4.934	-2.614	-2.687	-3.495	-1.025
	(1.592)	(1.581)	(1.611)	(1.396)	(1.403)	(1.414)
Δ % Poverty	3.730	9.653	13.652	0.773	5.894	11.324
	(1.875)	(2.343)	(2.353)	(1.645)	(2.080)	(2.065)
Δ Property Tax	-0.974	-0.970	-0.958	-1.022	-1.032	-1.017
	(0.038)	(0.039)	(0.038)	(0.034)	(0.034)	(0.034)
Δ % Urban	-1.326	-0.873	-1.415	-0.672	-0.027	-0.777
	(0.347)	(0.345)	(0.346)	(0.304)	(0.306)	(0.303)
Δ Median Income	-19.561	-14.501	-13.443	-19.268	-13.631	-12.086
	(1.771)	(2.030)	(2.018)	(1.553)	(1.803)	(1.771)
Δ 12 yrs+ Schooling	-2.402	-0.857	-2.320	-3.345	-1.135	-2.868
	(1.570)	(1.567)	(1.566)	(1.377)	(1.391)	(1.374)
Δ 16 yrs+ Schooling	-8.635	-9.443	-7.870	-7.480	-8.964	-6.896
	(1.605)	(1.605)	(1.600)	(1.407)	(1.425)	(1.404)
Δ % Free Lunch	3.714	1.185	3.568	0.099	-3.209	0.235
	(0.754)	(0.729)	(0.753)	(0.662)	(0.647)	(0.661)
Δ % 65 yrs+ old	-21.552	-13.250	-17.073	-26.479	-15.833	-20.977
	(2.671)	(2.764)	(2.765)	(2.343)	(2.454)	(2.427)
Δ % Hispanic	4.780	5.319	5.395	-1.641	-1.277	-0.798
	(2.141)	(2.146)	(2.135)	(1.878)	(1.905)	(1.874)
Δ Enrollment	-0.003	-0.003	-0.003	-0.002	-0.003	-0.002
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
Δ No. of Schools	1.133	0.963	0.792	0.716	0.791	0.603
	(0.448)	(0.450)	(0.448)	(0.393)	(0.400)	(0.393)
Observations	9433	9433	9433	9433	9433	9433
R-squared	0.73	0.73	0.73	0.80	0.80	0.80

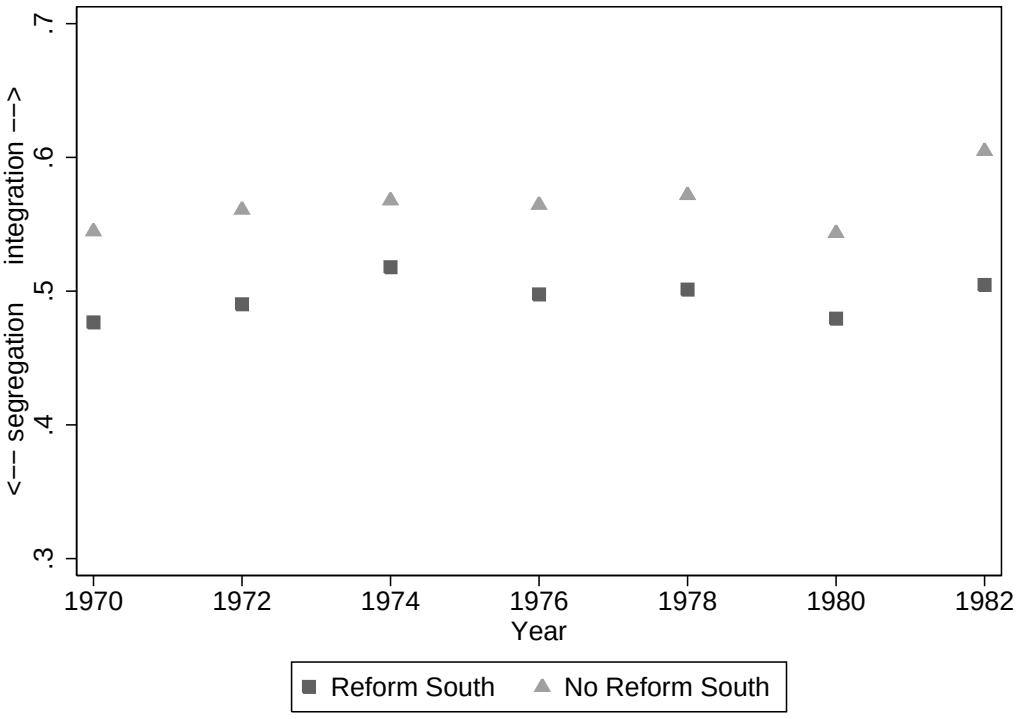
Notes: Data represent elementary and secondary public school district observations from 1992-1993 and 1997-1999. Robust standard errors in parentheses. All models include state fixed effects and weighted by district enrollment in 1990. The dependent variable in columns (1)-(2) is the change in the amount of total state transfer per pupil, and the dependent variable in columns (3)-(4) is the change in the amount of general aid formula assistance per pupil. All dollar amounts are expressed in 1990 dollars.

Table 5 Effect of Mandated School Finance Reform on Funding Levels of Minority Districts: 1992-1997

	Δ Total State Aid			Δ Formula Assistance		
	(1)	(2)	(3)	(4)	(5)	(6)
(a) States where education system ruled constitutional or no litigation (N=6,027)						
% Black * Δ BlackRep	0.680	–	0.473	0.740	–	0.649
	(0.072)		(0.098)	(0.067)		(0.092)
% Poverty * Δ BlackRep	–	1.310	0.786	–	1.197	0.353
		(0.197)	(0.270)		(0.185)	(0.252)
(b) States where education system ruled unconstitutional (N=3,406)						
% Black * Δ BlackRep	0.216	–	-0.509	0.185	–	0.069
	(0.145)		(0.174)	(0.114)		(0.136)
% Poverty * Δ BlackRep	–	2.075	3.062	–	-0.567	-0.053
		(0.364)	(0.476)		(0.287)	(0.374)

Notes: Data represent elementary and secondary public school district observations from 1992-1993 and 1997-1999. Robust standard errors in parentheses. All models include state fixed effects and weighted by district enrollment in 1990. The dependent variable in column (1)-(3) is the change in the amount of total state transfer per pupil, and the dependent variable in columns (4)-(6) is the change in the amount of general aid formula assistance per pupil. Control variables included in the estimation are: *Property Tax*, *Median Income*, *% Urban*, *% 12 yrs+ Schooling*, *% 16 yrs+ Schooling*, *% Free Lunch*, *% Hispanic*, *% 65 yrs+ old*, and *Enrollment*.

Figure 1: The Rate of School Desegregation in the South: 1970-1982



Additional Notes/Table and Data Appendix

Notes

Page 11, Note 9: I calculate the average household income figures by matching three sets of data. First, I enter state legislative district-level household median income data (as of 1990) from Barone, Lilley, and DeFranco 1998. Second, I match the household income data with state legislative election return data that contain candidate and district names (Collet 1997). Finally, information on the race of legislators is taken from the 1993 national roster of black elected officials (Joint Center for Political and Economic Studies 1993) and the 1994 national roster of Hispanic elected officials (National Association of Latino Elected and Appointed Officials Education Fund 1994). The race information is then added to the merged state legislative district-level data by candidate and district names. Alaska, Hawaii, and Nebraska are excluded from the calculation for reasons explained below. Idaho, Maine, Montana, New Mexico, North Dakota, South Dakota, Utah, and Wyoming had no African Americans in their respective state houses as of 1993 and are therefore not included in the calculation.

Page 23, Note 16: The feeling thermometer ranges from 0 to 100, with 100 being more favorable feeling. Because the sample size of southern white voters in each study is relatively small, I report the average score of three years at the beginning of the 1970s and the 1980s. The average feeling thermometer score among white voters in 1968, 1970, and 1972 is 55.03 for the 'reform' southern states (N=277) and 57.27 for the 'no-reform' southern states (N=717). The average score of 1980, 1982 and 1984 is 60.09 for the former (N=240) and 61.88 for the latter group of respondents (N=590). In the question regarding aid to blacks, respondents are asked to place themselves on a seven-point scale. The higher value means that they think minority groups/blacks should help themselves. At the beginning of the 1970s (1970, 1972, and 1974), the average scale of white respondents in the 'reform' southern states is 4.95 (N=284), whereas the corresponding score for

the 'no-reform' southern states is 5.15 (N=614). A decade later (1980, 1982, and 1984), the score is 4.67 (N=208) and 4.72 (N=519) for the 'reform' and 'no-reform' southern states, respectively. During the same period, white respondents in non-southern states had the average score of 4.35 (N=3,031) in the first period and 4.44 (N=2,538) in the second period.

Page 24, Note 17: There are 28 high minority enrollment (more than 50 percent black pupils) school districts in the 'reform' southern states that are represented by black legislators and 163 high minority districts that are not. The average increase in state aid for the former is 1,016.074 (s.d.=338.185) and the one for the latter is 901.546 (s.d.=393.887). In order to conduct this analysis, I first recorded which state legislative districts were represented by black legislators (as of 1980) by consulting *Roster* (1981). I then matched school districts and state legislative districts by county names. Some counties (especially in the urban area) are represented by multiple legislators, but I treated them as represented by black legislators if their delegation contains at least one black legislators. This type of analysis was possible because school districts are often county-wide or city-wide (except for Texas and Arkansas) in the South. In general, however, it is impossible to match state legislative districts to school districts and a similar analysis could not be conducted for the subsequent period.

Page 21, Note 14, Robustness Check: Effect of Partisan Factors

Table A-2: Impact of Partisan Factors on Levels of School Funding by Litigation Status and Type of Districts: 1992-1997

	All States		Unconstitutional		Others	
	Total	Formula	Total	Formula	Total	Formula
	(1)	(2)	(3)	(4)	(5)	(6)
% Black*Δ BlackRep	0.359	0.554	0.120	0.198	0.344	0.640
	(0.087)	(0.076)	(0.167)	(0.131)	(0.104)	(0.097)
% Black*Δ Democrats	-0.179	-0.062	-0.131	-0.055	-0.140	-0.054
	(0.038)	(0.033)	(0.059)	(0.046)	(0.052)	(0.049)
R-squared	0.73	0.80	0.51	0.75	0.80	0.84
% Poverty*Δ BlackRep	1.354	0.679	2.289	0.209	0.939	1.037
	(0.222)	(0.197)	(0.412)	(0.330)	(0.271)	(0.254)
% Poverty*Δ Democrats	0.065	-0.087	0.723	0.726	-0.326	-0.275
	(0.099)	(0.088)	(0.150)	(0.120)	(0.139)	(0.130)
R-squared	0.73	0.80	0.54	0.75	0.79	0.83
Observations	9,433		3,406		6,027	

Notes: Data represent elementary and secondary public school district observations from 1992-1993 and 1997-1999. Robust standard errors in parentheses. All models include state fixed effects and weighted by district enrollment in 1990. The dependent variable in columns (1), (3), and (5) is the change in the amount of total state transfer per pupil, and the dependent variable in columns (2), (4), and (6) is the change in the amount of general aid formula assistance per pupil. Control variables included in the estimation are: an indicator variable Δ *Dem. Governor* that takes a value of 1 if the state has a Democratic governor in both periods, -1 if a Republican governor in both periods, and 0 if there is a switch in the party affiliation of governor, *Property Tax*, *Median Income*, *% Urban*, *% 12 yrs+ Schooling*, *% 16 yrs+ Schooling*, *% Free Lunch*, *% Hispanic*, *% 65 yrs+ old*, and *Enrollment*.

Data Appendix

This Appendix provides additional information on the data set and variables used in this study. In compiling the data set, Harris [1999] was a particularly useful resource as well as Appendix in Murray, Evans, and Schwab [1998]. In addition, William Evans and Sean Corcoran provided me with valuable advice on data construction.

School Districts Included in the Data Set

As of 1997, there were approximately 15,000 public school districts in the United States, but after eliminating school districts according to the following criteria, the final sample size becomes approximately 9,600 for the 1990s and 8,100 for the 1970s and 1980s. To ensure comparability, the data set only contains districts that offer both elementary and secondary schools. Non-operating districts, districts that offer only special education, and districts whose grade level begins with grade 13 or higher are excluded. School districts in Hawaii and the District of Columbia are not contained in the data set since each has only one school district. Alaska and Nebraska are also excluded from the analysis. I exclude Nebraska because its legislature is unicameral and non-partisan. Since per-pupil revenue measures can be highly sensitive to enrollment figures for very small districts, districts with enrollments of less than 100 are eliminated. In addition, in order to exclude extreme cases, districts whose per-pupil revenue is more than 150 percent of the 95th percentile and less than 50 percent of the 5th percentile (calculated for each state) are also deleted.[1] Finally, school districts that are consolidated or split are excluded from the analysis.

Additional Notes on Data Sources

Basic demographic information for each school district was taken from school district tabulations of the Censuses of Population and Housing (1970, 1980, 1990, 2000). The district mapping data is created by the Census Bureau and National Center for Education Statistics (NCES) by aggregating

[1] This algorithm is adopted from Murray, Evans, and Schwab [1998].

household-level decennial census data up to the school district level. The 1970 data are compiled from *the Fifth Count* summary tape and *Summary Tape File 3F* is used for 1980. In the 1970 data, only school districts with more than 300 students are reported. *The School District Data Book (SDDB)* (ICPSR version) is used for 1990 and *Census 2000 School District Tabulation Data* (STP2) are downloaded directly from the Census Bureau web site. For 1970, additional information is supplemented using *Elementary and Secondary General Information System (ELSEGIS): Merged Federal File* and the district median household income is estimated from the income distribution.

Merging School District Data

The demographic data are available only in the census years, so the financial information in 1972 was merged with the 1970 census data, as well as with legislative and non-financial district information in 1970. Similarly, financial information in 1982 was matched with the demographic, legislative, and district data in 1980. As for the data in the 1990s, since the annual F-33 data do not report values for all districts in some years, I first made two sets of financial data by taking the average of two or more years (1992-1993 and 1997-1999) and then merged the averaged 1992-1993 data with the 1990 census data and the averaged 1997-1999 financial data with the 2000 census data. The non-financial data were merged in a similar fashion. The legislative information in 1990 was used for the first period and data from early 1997 were used for the second period.

The Amount of Total State Aid

The Censuses of Governments in 1972 and 1982 do not report district-level financial data for districts in Maryland, Montana, North Carolina, Rhode Island, and Virginia. Financial data for Montana districts are aggregated up to the state level, therefore I did not include Montana in the 1970-1980 data set. There was no black state legislators in Montana during the period. Financial data in three others states are not reported in the Censuses of Governments because school districts in these states are dependent districts. Dependent school districts are districts that do not raise revenues by themselves, but instead rely on a county or municipal government for their

financial resources. In order to supplement their financial data, I use *Elementary And Secondary General Information System (ELSEGIS): Survey Of Local Government Finances – School Systems, 1973-1974* and *Elementary and Secondary General Information System, Survey of School District Finances 1979-1980* for the four states.

Table A-3: Definition of Variables and Data Sources

Variable Names	Definition	1970-1972	1980-1982	1990s	2000
School District, Financial					
Total State Transfer	Intergovernmental transfer from state gov., total amount (per pupil)	COG72, ELSE73	COG82, ELSE79	F-33	F-33
General Aid Formula Assistance	Intergovernmental transfer from state gov., general aid formula (per pupil)	–	–	F-33	F-33
Property Tax	Property tax revenue per capita	COG72, ELSE73	COG82, ELSE79	F-33	F-33
School District, Nonfinancial					
Enrollment	District Enrollment (K-12)	Cen70, NIE, ELSE72	COG82	CCD	STP2, CCD
No. of Schools	Number of schools in school district (K-12)	ELSE72	Cen80	CCD	STP2
% Black	% of black pupils enrolled in public K-12 schools	NIE	–	CCD	STP2
% Hispanic	% of Hispanic pupils enrolled in public K-12 schools	–	–		
% Free Lunch	% of pupils receiving free or reduced-price lunch	–	–	CCD	STP2
–	Location of school district (county, metro status)	–	ELSE79	SDDB	STP2
–	Type of school district (operation code)	ELSE72	Cen80	SDDB	STP2
–	Grade span	ELSE72	ELSE79	SDDB	STP2
School District, Demographics					
–	Population in school district	Cen70	Cen80	SDDB	STP2
% Poverty	% of pop. in poverty	Cen70, ELSE	Cen80	SDDB	STP2
% Urban	% of pop. living in urban area	Cen70, ELSE	Cen80	SDDB	STP2
Median Income	Household Median Income in thousands	Cen70	Cen80	SDDB	STP2
12 yrs+ Schooling	% of pop. with more than 12 years of schooling	Cen70, ELSE	Cen80	SDDB	STP2
16 yrs+ Schooling	% of pop. with more than 16 years of schooling	Cen70, ELSE	Cen80	SDDB	STP2
% 65 yrs+ old	% of pop. that is over 65 years of age	–	–	SDDB	STP2
Legislative Information					
BlackRep	% of state legislative seats occupied by black legislators	Roster	Roster	Roster	Roster
% Dem	% of state legislative seats occupied by Democrats	–	–	ICPSR	ICPSR
GovDem	Dummy variable for Democratic governor	–	–	ICPSR	ICPSR

CCD: Common Core of Data, Local Education Agency (School District), 1986-1997 and 1986-1998
Cen70: Census of Population and Housing 1970, Fifth-Count Tallies: Sample Data for School Districts
Cen80: Census of Population and Housing 1980, Summary Tape File 3F, School Districts
COG72: Census of Governments 1972, Government Employment and Finance Files
COG82: Census of Governments 1982, Finance Summary Statistics
ELSE72: Elementary and Secondary General Information System, Public School District Universe Data 1972-1973
ELSE73: Elementary And Secondary General Information System (ELSEGIS): Survey Of Local Government Finances – School Systems, 1973-1974
ELSE76: Elementary and Secondary General Information System, Merged Federal File, 1976-1977

ELSE79: Elementary and Secondary General Information System, Survey of School District Finances 1979-1980
F-33: Public Elementary-Secondary Education Finance Data (F-33)
NIE: National Institute of Education, Special Tabulations and 1970 Census Fifth Count Data File
Roster: Black Elected Officials, A National Roster, various years
SDDB: School District Data Book 1990
STP2: Census 2000 School District Tabulation Data

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