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Three essays on the impact of student assignment policies

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Abstract

This dissertation is comprised of three essays, which study the impact of student assignment policies. The first two papers investigate the impacts of the removal of school desegregation plans on school racial segregation and on ninth grade repetition rates in the U.S. The third paper examines the impact of the school choice policy in Seoul, Korea on school segregation by academic performance levels.

Over the last two decades, half of school districts that were subject to court desegregation orders in the U.S. were released from those court orders. In response, many school districts modified student assignment plans that had been adopted to integrate public schools. Chapter 1 documents the changes in school desegregation plans and examines the effect of the changes on racial school segregation in approximately 100 school districts. Analysis of student enrollment data from 1988 to 2012 suggests that recent changes in student assignment plans caused a moderate increase in school racial segregation. The results of additional analysis of the types of policy changes suggest that the overall effect on school segregation is driven by the school districts that replaced school desegregation plans with neighborhood-based assignment plans. Districts that replaced race considerations with socioeconomic factors and that expanded school choice options did not experience an increase in school segregation.

Chapter 2 examines the impact of the changes in school desegregation plans documented in the Chapter 1 on ninth grade repetition rates in the same districts. Analysis of data from 1988 to 2012 suggests that the removal of school desegregation plans caused a statistically significant increase in the ninth grade repetition rates of about 0.2 standard deviations. I also find that the

impact on the ninth grade repetition rates is driven by the school districts where school segregation was substantially increased due to the changes in desegregation policies. The impact on the ninth grade repetition rate is driven by the school districts where school segregation was substantially increased by the changes in desegregation policies. In addition, I find no evidence that the desegregation policy changes affect student movements from other districts or private schools.

Chapter 3 examines the impact of school choice policy in Seoul, Korea on school segregation by student performance levels. Seoul, Korea replaced random assignment of schools with school choice in 2010. By exploiting the policy change, this paper examines the effect of school choice on student sorting by ability. I find that schools became segregated by student performance levels following the implementation of the school choice policy in Seoul. The results of this paper suggest that school choice increases school segregation by academic performance levels even in a racially homogenous country.

THREE ESSAYS ON THE IMPACT OF STUDENT ASSIGNMENT POLICIES

by

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Chapter 1. The end of school desegregation plans: Policy changes and school segregation

1.1. Introduction

Over the last two decades, half of the school districts that were ever under court desegregation orders have been released from their obligation to maintain desegregated schools (Reardon, Grewal, Kalogrides, & Greenberg, 2012).[1] A number of studies have found racial segregation across schools within a district tends to increase following the district's release from desegregation court orders (Clotfelter, Vigdor, & Ladd, 2006; Lutz, 2011; Orfield & Eaton, 1996; Reardon et al., 2012). A small number of studies have also examined the effect of these changes on residential location patterns (Billings, Deming, & Rockoff, 2014; Liebowitz & Page, 2014; Lutz, 2011; Weinstein, 2013). No studies find any impact of these changes on residential segregation, but Lutz (2011) and Liebowitz and Page (2014) find residential movements of whites into the districts that removed desegregation plans and into whiter school attendance zones within the same district, respectively.

In addition to the impact on segregation, studies have found that the recent changes in school desegregation plans negatively affect student outcomes. Billings et al. (2014) find that the end of race-based busing in Charlotte-Mecklenburg, North Carolina negatively affects high school test scores for both white and minority students, high school graduation and four-year college attendance for whites, and crime rates for minority males in majority-minority schools. Using approximately 100 school districts, Lutz (2011) also finds that dismissal of a court order leads to small increases in black dropout rates in non-Southern districts. Oh (2015) finds that the

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[1] According to Reardon et al. (2012), 754 districts with enrollments greater than 2,000 were subject to court desegregation orders. Among these districts, 372 were released from the orders. Four school districts that were identified as being under court orders as of early 2009 by Reardon et al. (2012) were released from the orders later (Tucson, AZ in 2011; Orange, FL in 2010; Chicago, IL in 2009; Philadelphia, PA in 2009; and Ector, TX in 2010).

recent changes in school desegregation increase the ninth grade repetition rate which is closely related to high school dropout rates.

Previous studies that examined a large number of districts focus solely on court rulings that release districts from desegregation requirements, so they may provide a limited view of the effects of changes in school desegregation plans. First, the changes in school desegregation plans associated with court rulings have been quite varied, and subsequent effects on segregation are likely to depend on the nature of these changes. Examining the average effect of being released from school desegregation orders ignores the differences in student assignment plans adopted by school districts, so focusing on the average effect may miss important policy implications. Second, because the timing of court rulings is often not contemporaneous with changes in school desegregation plans, focusing on court rulings can provide misleading estimates of the effects of these changes. There can be a substantial time gap between the year of the court decision and the changes in school desegregation plans. Initial desegregation plans were often implemented closely after desegregation court orders. Nonetheless, most studies use variation in the years that major school desegregation plans were implemented rather than the years of initial desegregation orders in order to identify the effect of school desegregation (Baum-Snow & Lutz, 2011; Guryan, 2004; Reber, 2005; Weiner, Lutz, & Ludwig, 2009). However, despite a much weaker connection between the timing of court decisions that release a district from school desegregation obligations and the removal of desegregation plans, studies that examined re-segregation have relied solely on variation in the year of the court decision to identify policy effects (Clotfelter et al., 2006; Lutz, 2011; Reardon et al., 2012).

This paper extends previous studies examining the effects of ending court desegregation orders on school segregation in two ways. First, based on in-depth archival research of roughly

100 school districts, I document the year of the major changes in school desegregation plans and classify the types of the policy changes that occurred following release from court-ordered desegregation plans or under continuing desegregation obligations. Second, I examine how ending school desegregation plans has affected school segregation, and whether these effects depend on the type of school assignment policies adopted.

In the sample districts examined here, the most common change to student assignment policies is that school districts ended cross-town busing plans and started assigning students to neighborhood schools. A second, smaller set of school districts have replaced student assignment plans designed to promote racial balance across schools with the plans designed to promote balance on socioeconomic (SES) factors. A third set of districts have responded to being released from desegregation obligations by expanding parent's opportunities to choose the public school their child attends (e.g., open enrollment plans, interdistrict transfers, and specialized magnet schools).

Existing research does not tell us how these various types of changes in student assignment policies are likely to influence racial segregation across schools. Many have feared that a return to neighborhood assignment policies would lead to the re-segregation of schools by race (Orfield & Eaton, 1996). Studies, however, have tended not to clearly distinguish neighborhood assignment policies from other types of policy changes. In addition, the impact of the SES balancing plans is unknown. Chaplin (2002) and Kahlenberg (2001) argue that student assignment policies designed to promote balance on SES factors will maintain school racial integration. Using simulations, however, Reardon, Yun, and Kurlaender (2006) find that income integration is no guarantee of racial integration and that the extent of racial integration produced by an income-integration policy will depend on the size of racial income disparities and the

specifics of an income-integration policy. Neither of the studies test these predictions using actual cases, so the impact of using SES factors is not clear. Finally, several studies have found that many programs which expand parental choice of schools increase school segregation (Bifulco, Ladd, & Ross, 2006; Cullen, Jacob, & Levitt, 2005; Hastings, Kain, & Staiger, 2005), but these empirical studies did not specifically examine the effect of replacing school desegregation plans with the policies that expand school choice options.

Based on econometric models that use variation in the timing of the changes in school assignment policies and control for district-specific trends in outcomes, I find that changes in the assignment policies associated with being released from desegregation obligations increase school racial segregation and that the effect is driven by the districts that adopted neighborhood assignments. The districts that adopted socioeconomic balancing plans and expanded school choice plans did not experience an increase in school segregation. These differential effects on school segregation imply that districts' choice of student assignment policies is important in maintaining school integration in the post desegregation era.

The paper proceeds as follows. Section 1.2 provides background on the end of school desegregation. Section 1.3 details the changes in school desegregation plans. Section 1.4 describes the data. Section 1.5 explains the empirical strategy, Section 1.6 presents results, and Section 1.7 concludes.

1.2. Background

The history of school desegregation is well-documented (see, among others, Armor, 1995; Clotfelter, 2004). The monumental *Brown v. Board of Education*[2] decision in 1954 established the principal that "[separate] educational facilities are inherently unequal (347 U.S. at 494-495)." In the first decade following the *Brown* (1954) decision, however, little progress was made

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[2] 347 U.S. 483 (1954).

toward reducing segregation. The second *Brown*[3] decision in 1955 delegated direction and oversight of desegregation efforts to federal district courts. While whites in many school districts across the South actively resisted desegregation, many lower courts placed minimal requirements on desegregation plans and often granted district officials delays in implementing those plans. In 1964, only 1.2 percent of black public school students in the eleven ex-Confederate states attended schools that had any white pupils (Thernstrom & Thernstrom, 1997).

The first important landmark on the path to meaningful desegregation after the *Brown* (1954) decision was the passage of the Civil Rights Act of 1964. The Act authorized the Department of Justice to initiate and join in class-action lawsuits, and empowered the secretary of Health, Education, and Welfare (HEW) to deny federal funding to any school district that it found to be operating segregated schools. When combined with the Elementary and Secondary Education Act of 1965, which promised substantial federal funding to many school districts, the later provision of the Civil Rights Act provided many school districts a financial incentive to desegregate their schools. In addition, the Act prompted HEW to disseminate guidelines on desegregation, which required more significant segregation remedies than many federal district courts had, and which districts were required to satisfy to avoid the threat of losing federal funding.

Next, a series of U.S. Supreme Court rulings starting with the case of *Green v. New Kent County* (1968)[4] established several important legal principles, which effectively required massive desegregation efforts, first across the South and later in other regions. The three most significant principles established in *Green* (1968) were: (1) school districts found to be operating state-compelled dual systems had "the affirmative duty" to convert to a school system "in which racial

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[3] 349 U.S. 294 (1955).
[4] 391 U.S. 430 (1968).

discrimination would be eliminated root and branch"; (2) delays in converting school systems were no longer tolerable; and (3) eliminating racial discrimination required establishing a system "without a 'white' school and a 'Negro' school, but just schools." The last principle established the requirement that districts eliminate racially identifiable schools. In addition, the Supreme Court recognized the "inextricable connection" between schools and housing and sanctioned the use of transportation as a remedial tool in *Swann v. Charlotte-Mecklenburg Board of Education* (1971).[5]

In the years immediately following these decisions, school districts across the South adopted desegregation plans which were often designed to achieve explicit racial balance targets. Racial balance targets could be specified either in terms of the number of predominantly one-race schools, or more frequently, in terms of maximum and/or minimum proportions of black or white students for each school in the district. In small districts, such targets could often be achieved by drawing sufficiently tailored geographic attendance zones (Armor, 1995)—a technique labelled by Welch and Light (1987) as "rezoning." In larger districts, achieving racial balance targets often required drawing non-contiguous attendance zones or transporting students between pairs or clusters of schools located in distant neighborhoods (Armor, 1995). These types of school desegregation techniques are referred to by Welch and Light (1987) as "pairing/clustering" plans.[6] Implementation of these plans resulted in rapid and dramatic increases in school integration. According to Clotfelter (2004), in the ex-Confederate states of the South, the percentage of black students attending schools that were 90 percent or more black fell from 78 percent in 1968 to 25 percent just four years later. Although changes in the extent of

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[5] 402 U.S. 1 (1971).

[6] The term "busing" has frequently been used in discussions of school desegregation, but it has no clear meaning. Any of the desegregation techniques discussed in this section, including those characterized below as using mandatory assignment and those relying on voluntary choices, might result in transportation that could be called "busing." However, "pairing/clustering" may be the one technique that is most associated with the term "busing."

segregation in regions outside the South were not as dramatic, many districts outside the South were required to implement desegregation plans that involved rezoning and pairing/clustering provisions similar to the plans implemented in the South.

In the late 1970s, in efforts to reduce whites' resistance to school desegregation, school districts sought, and courts began to approve, alternative techniques to achieve desegregation goals. For example, in 1977, the San Diego School District in California adopted a plan to integrate schools by encouraging minority students to voluntarily transfer from their neighborhood schools to predominantly white schools located elsewhere in the district, referred to as "majority-to-minority transfer" programs by Welch and Light (1987), and by attracting white students to "magnet schools"[7] in predominantly minority neighborhoods that offered specialized programs. Unlike rezoning and pairing/clustering techniques that rely on mandatory student assignment, these transfer and magnet programs rely on voluntary choices to achieve racial integration goals.

In the mid-1980s, some districts, including Yonkers in New York and San Jose in California adopted "controlled choice" programs that eliminated attendance zones, required parents to select schools, and then assigned students to satisfy racial balancing targets while maximizing assignment of students to the schools their families select. Even though parental choice is emphasized, parents could be denied their first choice of schools in order to satisfy racial balancing targets. Thus, "controlled choice" programs are difficult to categorize as primarily employing either voluntary choice or mandatory assignment techniques.

In addition to establishing the principle of eliminating racially identifiable schools, the *Green* (1968) decision introduced the concept of "unitary" status. When a school district

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[7] Magnet schools are public schools "of voluntary enrollment designed to further integration by drawing students away from their neighborhoods and private schools through distinctive curricula and high quality" (Missouri v. Jenkins, 495 U.S. 33, 110 S. Ct. 1651, 1657 n.6, 109 L. Ed. 2d 31, 1990).

successfully eliminated a *dual* school system that separates black and white students, it is said to have achieved *unitary* status. The *Green* (1968) decision clarified that in order to eliminate the vestiges of discrimination from a dual school system, school districts needed to address all aspects of school operations including (1) student assignment, (2) faculty assignment, (3) staff assignment, (4) transportation, (5) extracurricular activities, and (6) facilities—the so-called "*Green* factors." The *Green* (1968) decision also emphasized that districts found to be operating a dual school system should remain under the supervision of the courts until unitary status is achieved. One result of this principle is that districts under federal court orders to desegregate were often required for many years to seek prior approval from the courts before making any policy changes that might affect one of the *Green* factors.

The *Green* (1968) decision left two sets of questions about unitary status unanswered. One set of questions concerned what districts needed to do to achieve unitary status. Particularly controversial was the question of whether a district needed to achieve and maintain specific racial balancing targets in order to achieve unitary status, and if so, for how long did the district need to maintain those targets. A second set of questions concerned the obligations faced by a district that had achieved unitary status. Some language in *Green* (1968) and subsequent decisions suggests that as long as it did not adopt policy changes with discriminatory intent, a district that had achieved unitary status was not obligated to maintain school desegregation plans or seek to achieve racial balancing targets. However, in several cases, lower courts did continue to oversee and require maintenance of desegregation plans in districts that the courts had declared unitary.

The Supreme Court remained largely silent on questions of unitary status during the 1970s and 1980s, but finally clarified several issues in two important cases in the early 1990s. In

Dowell v. the Oklahoma City Board of Education (1991),[8] the majority opinion of a divided

Supreme Court established several influential principles. The first principle was that court

supervision of districts that had been found to be operating dual school systems should be

temporary. The second principle was that good faith compliance with desegregation court orders

and elimination of the vestiges of past discrimination "to the extent practicable" were sufficient

to be declared unitary. The third principle was that, once a district is declared unitary, it no

longer needs court approval for policy changes and is not obligated to maintain racial balancing

plans. In *Freeman v. Pitts* (1992),[9] the majority opinion further clarified that so long as the

district made good faith efforts to comply with court orders and had eliminated vestiges of

discrimination to the extent practicable, it did not need to achieve or maintain specific racial

balance targets in order to attain unitary status. The *Freeman* (1992) decision also established

that a district could be declared unitary and released from court supervision with respect to one

or more of the *Green* factors without having achieved unitary status on all of the *Green* factors.

That is, a district that was declared unitary on student assignment is not yet considered as

achieving unitary status, but it is able to modify student assignment plans that were adopted to

desegregate schools. This partial unitary status on student assignment is often the reason why

school districts under school desegregation orders frequently modified student assignment

plans.[10]

    These decisions in the early 1990s effectively relaxed the requirements for achieving

unitary status and allowed districts that had achieved unitary status to move away from student

assignment policies designed to achieve racial balancing requirements. In subsequent years,

scholars and leading civil rights groups have claimed that these changes had resulted in a retreat

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[8] 498 U.S. 237 (1991).
[9] 503 U.S. 467 (1992).
[10] See the footnote 13 (Tucson in Arizona) for an example.

from the goals of integrated schooling and in substantial increases in segregation (Orfield & Eaton, 1996). As a result, researchers have been concerned with determining what changes have taken place since the early 1990s in districts that had formerly implemented desegregation plans.

Much of the recent research on this question has focused on the effects of achieving unitary status and being released from desegregation consent decrees and court orders. Clotfelter et al. (2006) examine the 100 largest school districts in the South and Border states over the period 1993 to 2003 during which time the share of districts released from court orders increased from 12 to 45 percent. They find that these districts experienced an increase in the share of minority students attending predominantly non-white schools. Using a national sample of mid- and large-size districts, Lutz (2011) finds that being released from court orders is associated with a moderate increase in racial segregation. Reardon et al. (2012) confirm the Lutz (2011)'s findings on school segregation using a larger sample of districts. Both Lutz (2011) and Reardon et al. (2012) find that the increase in racial segregation is more pronounced in the South.

Rather than focusing on the effect of achieving unitary status, this present study focuses on the effect of actual changes in school assignment policies in districts that were employing meaningful desegregation plans prior to the *Dowell* (1991) and *Freeman* (1992) decisions. Focusing on the effects of changes in school assignment policies rather than the effects of being declared unitary is useful for several reasons.

First, there are an important set of districts that voluntarily adopted desegregation plans without ever being subject to court orders. These districts adopted plans to avoid loss of federal funding under provisions of the Civil Rights Act of 1964, in response to administrative actions by the Office for Civil Rights, or in order to avoid anticipated law suits. For instance, Seattle in Washington, Wake County in North Carolina, and Cambridge in Massachusetts, each have

employed widely studied student assignment policies that have been used as models for other districts, but none of these districts have ever been subject to desegregation court orders. Although the legal obligations of these districts are not directly influenced by the *Dowell* (1991) and *Freeman* (1992) rulings, the choices these districts make about student assignment policies can be influenced by the potential legal ramifications of any policy changes and by norms which are shaped by the choices of districts whose legal obligations are more directly influenced by the decisions. Examination of these districts can help to provide more complete evidence on the effects of changes in school desegregation plans.

Second, for several reasons, the timing of actual policy changes often differs substantially from the date that unitary status is achieved. Most districts that were declared unitary prior to the 1990s did not substantially modify their school assignment policies until after the *Dowell* (1991) and *Freeman* (1992) rulings clarified that they could abandon their school desegregation plans. In these cases, the date of being declared unitary tells us almost nothing about the timing of policy changes.[11] The oversight of desegregation orders by the Office for Civil Rights (OCR) also contributed to maintaining school desegregation plans in some school districts that had been declared unitary.[12] Also, the date of being declared unitary and being released from court supervision is often ambiguous. In some cases, districts may have achieved unitary status with respect to student assignment but still remain under court supervision with respect to other *Green*

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[11] For example, when the Omaha Public Schools in Nebraska had attained unitary status in 1984, the district court stated that the district remains under an unquestionable legal duty to maintain integrated school system, so the district kept desegregation plans in place until 1999.

[12] For example, Palm Beach County Schools in Florida achieved unitary status in 1979, but, due to the OCR's segregation allegation in 1989, the district submitted new desegregation plans to the OCR in 1991. After the OCR stopped monitoring the district in 1999, the district replaced previous desegregations with alternative choice plans in 2000. Also, Fort Wayne Community Schools in Indiana, not considered as achieving unitary status (Reardon et al., 2012), substantially changed its desegregation plans after the OCR dropped all potential segregation charges against the district in 1976 (except the teacher assignment issue).

factors.[13] In other cases, even after the *Dowell* (1991) and *Freeman* (1992) decisions, districts

entered into legally binding agreements to maintain desegregation efforts for some period of time

as a condition of being declared unitary, and thus, actual release from court supervision did not

occur for a number of years after being declared unitary.[14] Finally, it is possible that important

changes in a district's student assignment policies led to legal challenges that resulted in a

declaration of unitary status, in which case the relevant policy changes preceded the declaration

of unitary status.[15]

Third, it is important for policy purposes to examine whether the impacts of changes in

student assignment policies associated with the achievement of unitary status depend on the type

of policies selected in districts. Many districts that formerly were or currently are implementing

student assignment policies designed to promote racial school integration face a wide range of

assignment policy options. Information on the effects of different kinds of policy options can be

an important input into the choices these districts make.

1.3. Types of Policy Changes

Two approaches can be taken to characterize the policy changes that school districts

adopted after the *Dowell* (1991) and *Freeman* (1992) decisions. Desegregation plans adopted in

the two decades following the *Green* (1968) decision tended to employ rezoning,

pairing/clustering, majority-to-minority transfers, magnet schools, or controlled choice. One

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[13] For example, the district court ordered that the Tucson Unified School District in Arizona AZ be declared partially unitary in student assignment in 2008, so the district replaced its desegregation plans before achieving unitary status in 2011.

[14] For example, in 1994, Judge Barefoot Sanders declared Dallas Independent School District in Texas unitary pending the elimination of some problems related to school desegregation plans. Nine years after the 1994 decision, Dallas became unitary after addressing some of the issues.

[15] For example, a Chinese-American parent sued over the admission policy at the competitive Lowell High School in San Francisco, California where Asians had to score higher than other ethnic groups to gain admission because of the court mandate of not having more 40 percent of the enrollment of a school of one ethnic group. In 1999, a federal judge held that the school board could not consider children's race and ethnicity. In the same year, San Francisco school officials stopped using race and ethnicity as determining factors in assigning students to school, and the district was eventually declared unitary in 2005.

approach to characterizing policy changes is to describe how districts modified or discontinued the use of specific desegregation techniques. This approach presents several challenges. The first problem is that each district uses a unique mix of student assignment techniques and makes unique changes in that mix of techniques. Nearly all desegregation plans employ a number of the tools and techniques listed above in a great variety of combinations, so a district can experience simultaneous changes in several desegregation policies at the same point of time. Thus, it is difficult to develop a small set of policy change types that adequately captures meaningful variation across districts. The second problem is that a district can make frequent changes to its desegregation plan. If a district redrew school attendance zone boundaries to assign students to neighborhood schools after several changes in the boundaries that focused on maintaining racial balancing targets, the approach focusing solely on the assignment techniques would classify each of these changes as the same type of change. The third problem is that it is often difficult to determine which of the several techniques a school district employs is the most important, or even the most extensive part of their desegregation plan. Focusing on the changes in desegregation techniques would not capture the relative importance of the several techniques used in a district.

Another approach to characterizing changes in student assignment policies is to focus on the goals and priorities of the assignment policies. Any student assignment policy needs to balance several disparate objectives: promoting racial integration of schools, maintaining neighborhood schools, avoiding socioeconomic isolation of students, and providing families choices of schools and educational programs. The key aspect of the *Dowell* (1991) and *Freeman* (1992) decisions is that these decisions made it easier for school districts to deemphasize the goals of promoting racial integration in their student assignment policies. As several scholars

have suggested (Chaplin, 2002; Frankenberg, 2011; Kahlenberg, 2001; Holley-Walker, 2010; Reardon et al., 2006), one way to characterize changes in student assignment plans is by identifying whether racial integration goals were replaced with the goals of: (1) increasing neighborhood assignments; (2) avoiding the isolation of socioeconomically disadvantaged students; or (3) expanding parental ability to choose schools. Because it avoids the problems created by focusing on the changes in previous assignment techniques and focuses on what are likely to be substantively important distinctions between student assignment policies, this approach is employed in the present study.

This approach to characterizing changes in student assignment policies by the goals is not without challenges. The main challenge is identifying how the priorities embodied in a set of student assignment policies have changed. Usually it is clear when a district has deemphasized the achievement of racial balancing targets. However, a district that deemphasized racial balancing targets might increase the emphasis on several other goals. For example, the Charlotte-Mecklenburg Schools (CMS) in North Carolina replaced their racial balancing plans with assignment plans that district officials refer to as an "open enrollment" program. The plan allowed parents to rank preferences among public schools, and the district made efforts to assign students to their highest priority schools. The plan, however, also guaranteed students' admission to their neighborhood school, which greatly limits the ability of students outside of higher income neighborhoods to attend their first choice schools. Although the plan nominally emphasized the goal of expanding choice, the objective of allowing students to attend their neighborhood schools was the more dominant objective in this student assignment plan.

The objectives emphasized in some student assignment plans are unambiguous, but for many districts, judgments about the relative importance of neighborhood schools, socioeconomic

balancing criteria, and parental choice in newly adopted plans have to be made. An extensive

appendix to this paper provides a summary description of the changes made in student

assignment plans in each district in the sample and the classification of the policy changes in

terms of the three categories listed above.

1.4. Data

This section is divided into four subsections. The first discusses the sample, the second

discusses the data sources, the third discusses the outcome measures, and the fourth presents

summary statistics.

1.4.1. Sample

A study by Welch and Light (1987), commissioned by the OCR, provides information on

a sample of school districts that implemented school desegregation plans. This sample has

several advantages for purposes of this study. First, the target population for this study is school

districts that had adopted substantial desegregation plans prior to 1991, either by court orders,

OCR orders, or voluntary choices. While other data sources provide information on which

school districts were subject to court desegregation orders (Logan & Oakley, 2004; Reardon et

al., 2012), the dataset assembled by Welch and Light (1987) is the only data source that includes

the districts that implemented desegregation plans by OCR orders, state legislation, and

voluntarily. Also, Welch and Light (1987) provide information on the details of school

desegregation plans implemented in school districts, which makes it possible to determine the

changes in desegregation policies made after 1990. The Welch and Light (1987) sample

includes around one half of the school districts that were ever subject to school desegregation

orders with the enrollment greater than 10,000 and with the proportion of black students between

10 and 90 percent in 1990.[16]

The current study excludes the following districts from the Welch and Light sample.

First, the 16 districts in the sample that did not adopt any desegregation plans are excluded. As

this study focuses on estimating the effect of major changes in school desegregation plans, it is

inappropriate to include districts that did not have desegregation plans. The districts excluded by

this restriction are 15 districts with the "No plan" classification and one district (New Orleans in

Louisiana) which only gave students options to voluntarily transfer to another school (a

"Freedom of choice" plan by Welch and Light, 1987).[17] Second, 11 more districts were

excluded because they have a white population of less than 10 percent or a black population of

less than 10 percent in the first year that each district appeared in data.[18] These exclusions leave

a sample of 98 school districts, which are listed in Table 1-1.[19]

1.4.2. Data Sources

I used several sources to document the exact timing of changes in student assignment

policies in the sample districts. First, school desegregation lawsuit decisions were found using

Lexis-Nexis, the summary document of unitary status used for Clotfelter et al. (2006), and the

data section of "Desegregation Court Cases & School Demographic Data" of the Initiative in

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[16] Author's calculation using the data of Reardon et al. (2012)

[17] Yonkers in New York and Lorain in Ohio adopted desegregation plans in the late 1980s, so they are treated as having desegregation plans.

[18] Some of these 14 districts are the "No plan" districts and the "Freedom of choice" districts. The full sample includes eight districts with a white population of less than 10 percent and six districts with a black population of less than 10 percent in the earliest year when student enrollment by race appears in the data are excluded. The eight excluded districts with less than 10% white population are Birmingham, AL; Oakland, CA; Harford, CT; Atlanta, GA; Detroit, MI; New Jersey, NJ; Memphis, TN; and San Antonio, TX. The six excluded districts with less than 10% black population are Tucson, AZ; San Jose, CA; Amarillo, TX; Ector, TX; El Paso, TX; and Raleigh, WV. School-level information in Georgia, Missouri, and Virginia first appeared in 1993, 1991, and 1992 NCES survey, respectively.

[19] New Castle County District in Delaware had been formed by school desegregation order of the U.S. District Court in 1978 and was treated as a single district by Welch and Light (1987). The county district was divided into four racially balanced districts, Brandywine, Christina, Colonial, and Red Clay in 1981, and I treat the four districts as separate districts.

Spatial Structures in Social Sciences (S4) project at Brown University.[20] Second, school district

websites, local newspapers, the electronic archives of Education Week, and websites of the Civil

Rights Project and the Integration Reports were searched for additional information beyond legal

documents.[21] Third, district officials were contacted to verify conflicting information on student

assignment policies. Appendix A lists key sources of information on school assignment policy

for the districts that I classified as adopting any of the three types of policy changes.

The data to measure school segregation come from the Common Core of Data (CCD) of

the National Center for Education Statistics (NCES). Public Elementary/Secondary School

Universe (PSU) Survey of the CCD has reported student enrollment by race since 1987.[22] The

primary unit of analysis of this paper is a school district, and the CCD provides school-level data

with district identifiers.

1.4.3. Outcome Measures

Segregation is measured using a dissimilarity index, an exposure index, and the

percentage of minority students attending schools that were 90 percent or more minorities. The

dissimilarity index is a district-level measure that characterizes the distribution of two groups

across the schools within a district. The exposure index measures the degree of potential contact

between two groups within the schools of a district. The percentage of minority students in 90-

100 percent minority schools measures racial isolation.

The black/white dissimilarity index can be computed as:

$$D_i = \frac{1}{2} \sum_{j=1}^{n} \left| \frac{b_{ij}}{B_i} - \frac{w_{ij}}{W_i} \right|$$

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where b_{ij} and w_{ij} refer to the number of blacks and whites in school j in district i, respectively, and B_i and W_i refer to the total number of black and white students in the district, respectively. The dissimilarity index measures the degree to which blacks and whites are evenly spread among schools. It ranges from 0 to 1, with higher values representing more segregation and lower values representing a more even distribution of blacks and whites across schools. More generally, the dissimilarity index can be interpreted as the proportion of blacks (or whites) who would have to move from schools where they are overrepresented to schools where they are underrepresented to achieve a racial composition in each school that matches the racial composition of the district as a whole. Dissimilarity indices can be computed for any two groups. For instance, the non-white/white dissimilarity index can be computed by replacing the number of blacks with the number of non-whites (blacks and Hispanics) in the equation above.

An index of exposure of black students to white students (denoted as the black/white exposure index) can be computed as:

$$E_i = \sum_{j=1}^{n} \frac{b_{ij}}{B_i} \frac{w_{ij}}{(b_{ij}+w_{ij})}$$

where b_{ij}, w_{ij}, and B_i are defined as in the previous equation. This index can be interpreted as the proportion of students who are white in the typical black student's school, and thus, higher values represent greater exposure of black students to white students. An exposure index captures the likelihood that a person from one group will encounter and interact with a person from another group in a particular setting, in this case a school. Like the non-white/white dissimilarity index, the non-white/white exposure index can be computed by replacing the number of blacks with the number of non-whites (blacks and Hispanics) in the equation above.

As a measure of racial isolation, I also compute the percentage of black students attending schools that were 90 percent or more black and the percentage of non-white students attending schools that were 90 percent or more minorities.

1.4.4. Summary Statistics

Table 1-1 presents the major policy change of each district since 1990. Among the 98 districts in the study sample, 50 districts made changes to their desegregation plans during the 1990s or 2000s. In 29 of these cases, the districts implemented assignment policies focusing on the goal of promoting neighborhood schools; in 9 cases, the districts shifted emphasis from achieving racial balance to achieving socioeconomic balance; and in 12 cases, the districts deemphasized the goal of racial balance and sought to expand parental school choice.

Table 1-2 presents baseline statistics of the sample districts in 1990 or the earliest year that the district appears in data. The mean black/white dissimilarity index of the sample districts is 0.37, which means 37 percent of black students would have to move from schools where black students are overrepresented to schools where they are underrepresented to achieve perfect school integration. The mean non-white/white dissimilarity index is 0.35, which is similar to the black/white dissimilarity index. The mean black/white exposure index is 0.47, and the mean non-white/white exposure index is 0.43. When all school districts in my sample had school desegregation plans, 11 percent of black students attended schools that were 90 percent or more blacks, and 16 percent of non-white students attended schools that were 90 percent or minorities. In terms of student composition, 51 percent of students in the districts are white, 37 percent of students are black, and 17 percent of students attend private schools. The average number of students is approximately 60,000.

Summary statistics by the type of policy change reveal that the districts adopting changes that emphasize neighborhood schools (neighborhood policies) and districts replacing racial balancing consideration with SES balancing consideration (SES policies) are more similar to each other than districts that expanded school choice (choice policies). Among the districts that changed student assignment policies, districts that adopted choice policies have the lowest baseline level of school segregation and the highest percentage of white students.

Districts that did not change assignment policies in the 1990s and 2000s (no change group) are slightly different from the districts that changed the policies. Compared to the districts with any types of policy changes, school districts in the no change group have the highest level of school segregation and the largest student enrollment. However, the racial composition of students of the no change districts is similar to the sample average. In terms of the number of school districts that belongs to each Court of Appeals, there is variation in the number by policy change types. All districts in Circuits 6 and 10 that changed their assignment policies chose neighborhood assignments.

As presented in Table 1-1, the year of the policy change is evenly distributed in the 1990s and 2000s. There are 25 districts that changed their policies in the 1990s, and 25 districts that did so in the 2000s. More districts adopted the neighborhood assignments in the 1990s than in the 2000s. In contrast, slightly more districts replaced their desegregation policies with the SES and the choice policy groups in the 2000s than in the 1990s.

Figure 1 plots the trends in school segregation measured in the non-white/white dissimilarity index, one of the three segregation measures used in this study.[23] Panel A of Figure 1 presents the trends of districts with and without changes in student assignment policies by

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[23] Figures using the black/white dissimilarity index are similar to the figures using the non-white/white dissimilarity index. Because Welch and Light (1987) presented the effects of school desegregation plans in terms of the non-white/white dissimilarity index, I use the same measure to draw figures.

school year. The level of school segregation in the 1990s is higher for the districts in the no

change group than the districts with any policy changes, which is consistent with the baseline

statistics of school segregation presented in Table 1-2. However, school segregation increases

rapidly in the districts that changed their policies, and, after 2000, the segregation level of the

policy change group becomes higher than the level of the no change group. Panel B of Figure 1

plots the trends in school segregation only for the districts with the policy changes by time since

the policy is enacted. This reveals that, in all three policy groups, school segregation trends

upward even before the policy change. Panel B of Figure 1 also reveals that school segregation

in the neighborhood policy group increased sharply in the first year of the policy change. In the

districts that adopted neighborhood assignments, the percent increase in school segregation

between the year of the policy change and the previous year is approximately five times greater

than the average percent increase in the five years prior to the policy change. There is no

discontinuity in the segregation outcome in the districts in both SES and choice policy groups.

Panels A and B of Figure 1 suggest that the changes in student assignment policies may have

contributed to the increase in school segregation, especially for the districts in the neighborhood

policy group. In the next two sections, I formally test the effects of the policy changes on school

segregation.

1.5. Empirical Strategy

The empirical strategy of this paper uses the variation in the timing of policy changes

across districts to estimate the effect of the changes (an interrupted time series design). This

design with trend controls identifies the association between a policy change and a particular

outcome by comparing deviations from outcome trends in districts that have implemented the

policy change to deviations from outcome trends during the same year in districts that have not

(yet) implemented the policy change. In studies where the introduction of the policy change is initiated at different times in different districts, this design can help to address potential bias from the other events associated with the outcome of interest. Specifically, such time-specific events can threaten causal inferences only if they occurred at the same time as the introduction of the policy change, which is unlikely if the change is introduced at different points in time in different districts and the timing of adoption is unrelated to district characteristics that might influence outcome trends (Shaddish, Cook, & Campbell, 2001).

The interrupted time series design can be estimated by the following regression equation:

$$Y_{ict} = \beta \, D_{ict} + \theta_i + \delta_i \, T_t + \lambda_{ct} + Z_{ict}'\psi + \varepsilon_{ict}. \tag{1}$$

In this equation, i, c, and t index district, court circuit, and year, respectively. Y is the outcome of interest, one of the school segregation measures. D is an indicator of the policy changes that takes the value of 1 in years after the district changed student assignment policies and 0 otherwise. θ_i is district-fixed effects. A time counter variable (T) takes on a value of 1 for the first year of the time series and increases by one for each subsequent year. δ_i is the slope of a district specific trend line. λ_{ct} is circuit specific year fixed-effects which control for year specific events and account for the differences among the circuit courts in the probability of policy changes found by Reardon et al. (2012). The vector of Z_{ict} includes controls of total enrollment, percent of white students, percent of black students, and percent of black students squared.[24] ε_{ict} is a random error term, and, because observations for multiple years are used for each district, standard errors are clustered at the district levels. β indicates the average effects of the changes in student assignment policies. β specifically tells how much, on average, school segregation measures deviate from district-specific trends following the policy changes controlling for how

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[24] Because these control variables may have been affected by the assignment policy changes, I also examined the sensitivity of primary findings to excluding the controls. Results are not sensitive to the exclusion of the controls.

much the measures in the districts in the same federal circuit without policy changes deviate from their specific time trend in the same years.

The district-specific time trend (T) is included in the regression for the following reasons. First, as shown in Figure 1, the dissimilarity index was trending upwards prior to the changes in school assignment policies. Second, the student demographic controls included in the vector Z_{ict} was also trending. Third, unobservable trending factors that affect school segregation might also be correlated with the control variables. Without including the treads, β will capture a spurious relationship between Y_{ict} and control variables (Wooldridge, 2003).

The effects by the type of policy change can be estimated by the following regression:

$$Y_{ict} = \beta_1\, D1_{ict} + \beta_2\, D2_{ict} + \beta_3\, D3_{ict} + \theta_i + \delta_i\, T_t + \lambda_{ct} + Z_{ict}'\psi + \varepsilon_{ict} \tag{2}$$

This equation (2) includes three types of policy changes: increasing neighborhood assignments (D1); avoiding the isolation of socioeconomically disadvantaged students (D2); and expanding parental ability to choose schools (D3). Estimates of the policy change parameters (β_1, β_2, and β_3) indicate how much, on average, a school segregation measure deviates from district-specific trends following the adoption of the corresponding policy change (D1, D2, and D3), controlling for how much the segregation measure in the districts in the same federal circuit without policy changes deviate from their specific time trend in the same years.

I limit the sample to observations that are ten or fewer years prior to or ten or fewer years following the implementation of policy changes for three reasons.[25] First, as shown in Panel B of Figure 1, the effect of the changes in student assignment plans seems immediate. Thus, school segregation outcomes that are far away from the year of the policy change may not be

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[25] Because the number of units (districts) is sufficiently large relative to the number of time periods in the data used for this study, I can assume rough independence in the cross section (See Wooldridge, 2002). Nonetheless, I also tested the sensitivity of primary findings to changes in the length of the time period used (all years, five years, and three years). These results are robust to the length of the time period used.

relevant for predicting the counterfactual school segregation. Second, for school districts that adopted changes in the early 1990s, using more than ten years prior to the policy changes might reflect the effect of school desegregation plans. Third, using lengthy time-series is susceptible to the inconsistency of standard errors due to auto-correlation and relies more heavily on functional form assumptions.

1.6. Results

This section presents the results of school segregation analysis. Section 1.6.1 presents primary results of school segregation, and Section 1.6.2 presents additional results of school segregation by school types, and Section 1.6.3 presents the results of robustness and sensitivity tests.

1.6.1. Primary Results

Table 1-3 presents estimated effects of student assignment policy changes on school segregation. Even numbered columns present the results of black to white segregation, and odd numbered columns present the results of non-white to white segregation. Average policy effects on school segregation are computed using equation (1) which controls for court circuit-by-year and district fixed-effects with district-specific time-trends.

Panel A of Table 1-3 presents the average effects of assignment policy changes on school segregation. I find that the replacement of school desegregation plans with alternative student assignment plans, on average, increases the black/white school dissimilarity index by 0.03. The estimated effect for non-white to white school segregation is similar to the effect of black to white segregation. Both estimates are statistically significant at the 1 percent level. The average effects of assignment policy changes on school segregation are 8 percent of the sample mean of

the dissimilarity index and 18 to 19 percent of the 1990 cross-sectional standard deviation of the index.

The impact estimates measured using the exposure index are -0.011 for black/white segregation and -0.009 for non-white/white segregation, which indicates that the assignment policy changes decrease the exposure index by about 0.01. The estimates are statistically significant at the 1 percent level. The average effects estimated using the exposure index are 2 percent of the sample mean of the exposure index and 5 to 6 percent of the 1990 cross-sectional standard deviation of the index. The impacts estimated using the exposure index are relatively small, but this measure is sensitive to the changes in demographic changes. If the district-specific trend controls cannot fully address the downward trends in the black/white and non-white/white exposure indices due to the decline in white enrollment in public schools,[26] the impact of the assignment policy changes could be underestimated using the measures.

The replacement of school desegregation plans with alternative student assignment plans, on average, increases the percentage of black or non-white students in 90-100 percent black or minority schools by three percentage points. Because the baseline share of such students was small (11 percent for blacks and 16 percent for minorities), the three percentage point increase is a substantial increase in racial isolation.

Using all three measures, I consistently find that the assignment policy changes increased school racial segregation. The magnitude of impacts on school segregation is greater in terms of the changes in the evenness of students' racial distribution and racial isolation than the changes in the degree of potential contact between different racial groups in schools.

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[26] *"From fall 2001 through fall 2011, the number of White students enrolled in prekindergarten through 12th grade in U.S. public schools decreased from 28.7 million to 25.6 million, and their share of public school enrollment decreased from 60 to 52 percent"* (The Condition of Education, NCES retrieved from https://nces.ed.gov/programs/coe/indicator_cge.asp on May 5, 2010).

Panel B of Table 1-3 presents the estimated effect of each policy type which is computed using equation (2) with three different policy indicator variables. Estimating effects by each policy type reveals that school segregation increased only in the districts that adopted neighborhood assignments. The impact estimates indicate that returning to neighborhood school assignments increased the black/white dissimilarity index by 0.056. The estimated effect on the non-white/white dissimilarity index is 0.051 which is slightly smaller than the effect on black to white segregation. The effects of neighborhood assignments are 16 to 17 percent of the sample mean and 38 to 40 percent of the standard deviation. The estimated effects of neighborhood assignments on segregation are more than 80 percent larger than the average effect of the assignment policy changes.

The estimated impacts of neighborhood assignments on school segregation are also larger than the average impacts when measured using either the exposure index or the racial isolation measure. The impact estimates of the neighborhood assignments measured using the exposure index are -0.022 for black/white segregation and -0.018 for non-white/white segregation, which is twice as large as the overall effect of the policy change. In terms of racial isolation, the impact estimates of the neighborhood assignments are also approximately 80 percent larger than the average effects on school segregation. All coefficients of the neighborhood assignments are statistically significant at the 1 percent level. Using all three measures, the impact estimates of adopting socioeconomic balancing policies and expanding school choice policies on school segregation are small in magnitude (less than 0.01) and statistically insignificant.

1.6.2. School Segregation by School Types

School attendance zones are typically smaller for elementary and middle schools than for high schools, so the impacts of neighborhood assignments on school segregation are likely to be

larger for elementary and middle schools than for high schools. Thus, I analyze the impact on school segregation separately for elementary and middle schools and for high schools.[27] Table 1-4 presents the results of this analysis. As expected, segregation effects for elementary and middle schools are at least 10 percent larger than the main results measured using all types of schools. The biggest difference between the main results of all types of schools and the results of elementary and middle schools appears when the racial isolation measure is used. The impact estimates measured using the racial isolation measures indicate that the assignment policy changes increase the percentage of minority students attending schools that were 90 percent or more minorities by 7 percentage points, which is 20 percent larger than the main results.

In contrast, segregation effects for high schools are smaller than the main results measured using all types of schools. Consequently, segregation effects for high schools are substantially smaller than the segregation effects for elementary and middle schools. When school segregation is measured using the dissimilarity index, the impact estimates on high school segregation indicate that the overall changes in student assignment policies increase high school segregation by 0.019 and the neighborhood assignments increase high school segregation by 0.032 to 0.036. The magnitude of the impacts is 32 to 43 percent smaller than the main results estimated using all types of schools and 40 to 54 percent smaller than the results estimated using elementary and middle schools. These results are statistically significant at the 1 or 5 percent level depending on the sample used.

When school segregation is measured using the exposure index, the estimated effects on school segregation are only statistically significant for neighborhood assignments. The impacts of neighborhood assignments on high school segregation are 60 to 70 percent smaller than the

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[27] Segregation indices are computed using schools only serving grades between K and 8 (elementary and middle schools) and others, separately.

impacts of neighborhood assignments on elementary and middle school segregation. The impact estimates measured using the racial isolation measures are small and statistically insignificant. Because a large proportion of minority students drop out from high school, the exposure index and the racial isolation measure are likely to capture both the impact of the assignment policy changes and the impact of the decrease in minority enrollment in high schools on the measures.

Using the dissimilarity index which is least sensitive to the demographic changes, the size of the impact estimates for high school segregation is about half the size of the impact estimates for elementary and middle school segregation. Based on the fact that attendance zones of elementary and middle schools are geographically smaller than attendance zones of high schools, the results presented in Table 1-4 support that the impact of the assignment policy changes on school segregation is driven by student reallocation across attendance zones.

1.6.3. Robustness and Sensitivity Checks

Table 1-5 presents the impact estimates measured using the districts that adopted the same type of policy. Because school districts with the same type of policy change are likely to be similar to one another, policy effects measured using the districts with the same type of policy change can address the concerns about the endogeneity of student assignment policies. In Table 1-5, the left-hand side columns under the subtitle of "Neighborhood", the middle columns under the subtitle of "SES", and the right-hand side columns under the subtitle of "Choice" present the estimated effects measured only using the school districts that implemented neighborhood school assignments, the school districts that implemented socioeconomic balancing policies, and the school districts that expanded school choice policies, respectively.

Depending on the school segregation measure used, the estimated effects of neighborhood assignments presented in Table 1-5 are 4 to 24 percent smaller than the main

estimated effects. However, the within-group analysis consistently finds the statistically significant increase in school segregation regardless of the school segregation measure used. In contrast, in the SES and Choice groups, the assignment policy changes have no impact on school segregation. The estimated effects of the SES balancing and choice policies of the within-group analysis are small and statistically insignificant, which is similar to the main estimate effects. These similar results between the within-group analysis (Table 1-5) and the across-group analysis (Table 1-3) suggest that the main findings of this paper are not likely to be biased due to the endogeneity of policy types adopted in districts.

Next, I test whether the estimated effects on school segregation are biased due to the subsequent changes in student assignment polices. There are districts that experienced more than one policy change at different points in time, and the characteristics of the subsequent policy change are often different from the characteristics of the initial policy change. Because the main analysis is based on the initial policy change, the estimated effects of each policy option on school segregation may be biased by using the observations after the second policy change that can be classified as a different policy option from the initial policy change. Columns (1) to (6) of Table 1-6 present the results estimated using only observations before the second policy change. The results of this analysis are virtually same as the main results estimated using all the observations, which suggests that the main findings of this paper are not biased due to the subsequent changes in student assignment plans. These results also suggest that the initial policy change is most important in estimating the impact of the removal of school desegregation plans and subsequent policy changes are not as influential as the initial policy change.

In addition, I test whether the results of the socioeconomic balancing policies are sensitive to including other school districts that implemented the similar policies out of the

sample districts. The additional districts are the five districts whose assignment policies are well characterized by other scholars as switching from racial balancing goals to SES balancing goals in the 1990s and 2000s (Berkeley, CA; San Jose, CA; Cambridge, MA, Montgomery, MD, and Wake, NC).[28] Columns (7) to (12) of Table 1-6 present the results of this estimation. The impact estimates of the implementation of SES balancing polices are virtually zero, which confirms that replacing race considerations with the SES factors does not increase school racial segregation. In addition, the effects of neighborhood assignments are unchanged. Because these five districts are well-known cases of using the SES assignments, the similar impact estimates between the main results presented in Table 1-3 and the additional results presented in Table 1-6 suggest that potential errors subject to the classification of the SES policy in the sample are not substantial.

In Table 1-7, I turn to the limitations of classifying the changes in school desegregation plans used in this study. One potential shortcoming of classifying the assignment policy changes by policy goals is that one district may have policies that focus on two different goals similarly. Another shortcoming of this study is that, even though this study focuses on the policy changes in the 1990s and 2000s, the changes in earlier years may be the most important policy changes. Thus, I examine the sensitivity of primary findings to changes in the judgments about the most ambiguous cases in the sample. The following school districts are reclassified for this analysis.

Duval School District in Florida ended two decades of forced busing in 1991 and introduced magnet schools, so it was initially classified as the "Neighborhood" group. Duval is reclassified as the "Choice" group because the district established a large number of magnet schools after the removal of busing. Lee and Polk School Districts in Florida implemented

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[28] San Jose in California is included in the sample of Welch and Light (1987) but was excluded from previous analysis due to exclusion restrictions (having less than 10 percent of black students in a district).

school choice programs with explicit diversity balance targets so they were classified as the "Choice" group. Because the choice programs also include proximity preference based on the distance between home and school, the two districts are reclassified as the "Neighborhood" group. East Baton Rough Parish (EBRP) District in Louisiana created "community sensitive attendance zones" and also opened a large number of magnet schools, so it was classified as the "Neighborhood" group. The EBRP is reclassified as the "Choice" group. Austin Independent School District in Texas removed the pairing of elementary schools and implemented a neighborhood school policy in 1987. Austin removed the pairing completely in 2000, so it was initially classified as the "Neighborhood" group. However, only 1,300 out of 78,000 students were bused in 2000 because of the 1987 policy change, so Austin is reclassified as the "No Change" group. Forced busing in Dallas Independent School District in Texas also largely went away in the 1980s, so the district that was initially classified as the "Neighborhood" group is also reclassified as the "No Change" group.

Table 1-7 presents the results of this reclassification. After reclassifying the two districts in Texas as the "No Change" group, the estimated effects of the overall policy change are slightly larger than the main results presented in Table 1-3. The estimated effects of the neighborhood assignments and choice policies are also very similar to the main results even after four districts in the "Neighborhood" group were reclassified as either the "Choice" group or the "No Change" group, and two districts in the "Choice" group were reclassified as the "Neighborhood" group. In short, the reclassification of the most sensitive cases does not change the main findings of this study.

Finally, Table 1-8 presents the results of using observations that are five or fewer years prior to or five or fewer years following the implementation of policy changes. Impact estimates

using the five year window are slightly smaller than the main estimated effects using the ten year window, but all the impact estimates of the overall policy change and the neighborhood assignments are statistically significant and reach qualitatively same conclusions.

1.7. Conclusion

This paper documents how school districts replaced school desegregation plans in the 1990s and 2000s, and, using the information collected and classified through archival study, it estimates the effects of these policy changes on school segregation. I find that school districts have substantially modified school desegregation plans over the last two decades. New policies that replaced previous desegregation plans mostly use race-neutral ways of assigning students across schools. The assignment policies can be classified as having three different goals of (1) increasing neighborhood assignments, (2) integrating students along socioeconomic lines, and (3) expanding school choice options. I find that overall changes in student assignment policies increase school segregation. Estimated effects by the policy types indicate that the increase in school segregation is driven by the districts that adopted neighborhood assignments. The effect of the neighborhood assignments is almost twice as large as the average effect. Districts that adopted socioeconomic balancing plans and expanded school choice plans, however, were successful in maintaining the level of school integration. In addition, the changes in student assignment policies increased school segregation in the year of policy change without any lagging effects in subsequent years.

One should be careful interpreting the results of this paper because the estimated effects presented in this paper are likely to underestimate the effects of specific policy types. First, because many school districts simultaneously expanded school choice programs when they implemented neighborhood assignments or SES balancing plans, the effect of neighborhood

assignments and the SES balancing plans on segregation could have been underestimated. Second, the actual impact of the expansion of school choice plans could have been underestimated because some school districts classified as the expanded choice plans include school districts that slightly modified their pre-existing desegregation plans (e.g., transforming public schools to magnet schools).

Despite the limitations of classifying the changes in student assignment policies, findings of this study suggest that school districts' assignment policy choices are crucial in maintaining school integration. In the absence of any efforts to integrate schools, schools will become more racially segregated when school desegregation policies are removed.

References

Armor, D. (1995). *Forced Justice: School Desegregation and the Law*. New York: Oxford University Press.

Baum-Snow, N., & Lutz. B. F. (2011). School desegregation, school choice, and changes in residential location patterns by race. *American Economic Review, 101*(7), 3019–3046.

Bifulco, R., Ladd, H. F., & Ross, S. L. (2009). Public school choice and integration evidence from Durham, North Carolina. *Social Science Research*, *38*(1), 71-85.

Billings, S. B., Deming, D., & Rockoff, J. (2014). School segregation, educational attainment, and crime: Evidence from the end of busing in Charlotte-Mecklenburg. *The Quarterly Journal of Economics*, 435-476.

Chaplin, D. (2002). Estimating the impact of economic integration of schools on racial integration. In The Century Foundation Task Force on the Common School (Eds.), *Divided We Fail: Coming Together through Public School Choice* (pp. 87–113). New York: The Century Foundation Press.

Clotfelter, C. T. (2004). *After Brown: The Rise and Retreat of School Desegregation*. Princeton, NJ: Princeton University Press.

Clotfelter, C. T., Vigdor, J. L., & Ladd H. F. (2006). Federal oversight, local control, and the specter of "Resegregation" in Southern schools. *American Law and Economics Review, 8*(2), 347-389.

Cullen, J. B., Jacob, B. A., & Levitt, S. D. (2005). The impact of school choice on student outcomes: an analysis of the Chicago Public Schools. *Journal of Public Economics*, *89*(5), 729-760.

Frankenberg, E. (2011). Integration after *Parents Involved*: What does research suggest about available options? In E. Frankenberg, & E. DeBray (Eds.), *Integrating schools in a changing society: New policies and legal options for a multiracial generation* (pp. 53-74)*.* Chapel Hill: University of North Carolina Press.

Guryan, J. (2004). Desegregation and black dropout rates. *The American Economic Review*, *94*(4), 919-943.

Hastings, J. S., Kane, T. J., & Staiger, D. O. (2005). *Parental preferences and school competition: Evidence from a public school choice program* (Working Paper No. 11805). National Bureau of Economic Research.

Holley-Walker, D. (2010). After unitary status: Examining voluntary integration strategies for Southern school districts. *North Carolina Law Review*, *88*, 877.

Kahlenberg, R. D. (2001). *All Together Now: The Case for Economic Integration of the Public Schools*. Washington D.C.: Brookings Institution Press.

Liebowitz, D. D., & Page, L. C. (2014). Does school policy affect housing choices? Evidence from the end of desegregation in Charlotte–Mecklenburg. *American Educational Research Journal*, *51*(4), 671-703.

Linn, R. L., & Welner, K. G. (2007). *Race-conscious policies for assigning students to schools: Social science research and the Supreme Court cases.* Washington, DC: National Academy of Education.

Logan, J., & Oakley, D. (2004). The continuing legacy of the Brown decision: Court action and school segregation, 1960-2000. *Albany: Lewis Mumford Center for Comparative Urban and Regional Research, State University of New York at Albany*.

Lutz, B. (2011). The end of court-ordered desegregation. *American Economic Journal: Economic Policy*, *3*(2), 130–168.

Oh, S. J. (2015). *The impact of ending school desegregation plans on ninth grade repetition rates*. Working Paper (Unpublished).

Orfield, G. & Eaton, E. (1996). *Dismantling Desegregation: The Quiet Reversal of Brown v. Board of Education*. NY: The New Press.

Reardon, S. F., Grewal, E. T., Kalogrides, D., & Greenberg, E. (2012). Brown fades: The end of court-ordered school desegregation and the resegregation of American public schools. *Journal of Policy Management and Analysis*, *31*(4), 876-904.

Reardon, S. F., Yun, J. T., & Kurlaender, M. (2006). Implications of income-based school assignment policies for racial school segregation. *Educational Evaluation and Policy Analysis*, *28*(1), 49-75.

Reber, S. J. (2005). Court-ordered desegregation successes and failures integrating American schools since Brown versus Board of education. *Journal of Human Resources*, *40*(3), 559-590.

Shaddish, W. R., Cook, T. D., & Campbell, D. T. (2001). *Experimental and Quasi-experimental Designs for Generalized Causal Inference.* Boston, MA: Houghton Mifflin Company.

Thernstrom, S., & Thernstrom, A. (1997). *America in Black and White: One nation, Indivisible*. New York: Simon and Schuster.

Wheaton, W. C. (1993). Land capitalization, Tiebout mobility, and the role of zoning regulations. *Journal of Urban Economics*, *34*(2), 102-117.

Weiner, D. A., Lutz, B. F., & Ludwig J. (2009). *The effects of school desegregation on crime* (Working Paper No. 15380). National Bureau of Economic Research.

Weinstein, J. M. (2013). The impact of school racial compositions on neighborhood racial compositions: Evidence from school redistricting. Unpublished Paper.

Welch, F., & Light, A. L. (1987). *New evidence on school desegregation*. U.S. Commission on Civil Rights Clearinghouse. Washington D.C. Publication 92.

Wooldridge, J. M. (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press.

Wooldridge, J. M. (2003). Introductory Econometric: A Modern Approach (2E). Cincinnati, OH: South-Western Publishing

Table 1-1. List of Sample Districts and Major Policy Changes since 1990

St.	County Name	School District Name	Unitary	Policy Change	Policy Type	Deseg.
AL	Jefferson	Jefferson County	-	-		1971
AL	Mobile[c]	Mobile County	1997	1999	Neighborhood	1971
AR	Pulaski	Little Rock	2007	1998	Neighborhood	1971
CA	Fresno	Fresno Unified	-	2012	Neighborhood	1978
CA	Los Angeles	Long Beach Unified	-	-		1980
CA	Los Angeles	Los Angeles Unified	-	-		1978
CA	Los Angeles	Pasadena Unified	1979	-		1970
CA	Contra Costa	West Contra Costa (Richmond)	-	-		1969
CA	Sacramento	Sacramento City Unified	-	-		1976
CA	San Bernardino	San Bernardino City Unified	-	-		1978
CA	San Diego	San Diego Unified	1998	1996	SES	1977
CA	San Francisco[c]	San Francisco Unified	2005	1999	Neighborhood	1971
CA	Solano	Vallejo City Unified	-	-		1975
CO	Denver[c]	Denver	1995	1996	Neighborhood	1974
CT	Fairfield	Stamford	-	-		1970
DE	New Castle	Brandywine	1996	2002	SES	1978
DE	New Castle	Christina	1996	2002	SES	1978
DE	New Castle	Colonial	1996	2001	Neighborhood	1978
DE	New Castle	Red Clay Consolidated	1996	1995	Choice	1978
FL	Brevard[c]	Brevard	1978	-		1969
FL	Broward[c]	Broward County	1996	1995	Neighborhood	1970
FL	Dade[c]	Miami-Dade County	2001	-		1970
FL	Duval[c]	Duval County	2001	1991	Neighborhood	1971
FL	Hillsborough[c]	Hillsborough County	2001	2004	Choice	1971
FL	Lee[c]	Lee County	1999	1998	Choice	1969
FL	Orange[c]	Orange County	2010	1996	Neighborhood	1972
FL	Palm Beach[c]	Palm Beach County	1979	2000	Choice	1970
FL	Pinellas[c]	Pinellas County	2000	2003	Choice	1970
FL	Polk[c]	Polk County	2000	1992	Choice	1969
FL	Volusia[c]	Volusia County	1970	-		1969
GA	Dougherty[c]	Dougherty County	-	-		1980
GA	Muscogee[c]	Muscogee County	1997	1993	Neighborhood	1971
IL	Cook	City of Chicago	2009	-		1982
IL	Winnebago	Rockford	2001	-		1973
IN	Allen	Fort Wayne	-	-		1971
IN	Marion	Indianapolis	1998	1999	Neighborhood	1973
IN	St. Joseph	South Bend	-	-		1981
KS	Wyandotte	Kansas City	1997	1997	Neighborhood	1977
KS	Sedgwick	Wichita	-	2008	Neighborhood	1971
KY	Fayette[c]	Fayette County	-	-		1972
KY	Jefferson	Jefferson County (Louisville)	2000	1991	Neighborhood	1975
LA	Caddo[c]	Caddo Parish	-	2006	SES	1969
LA	Calcasieu[c]	Calcasieu Parish	-	-		1969
LA	East Baton Rouge[c]	East Baton Rouge Parish	2003	1996	Neighborhood	1970
LA	Jefferson[c]	Jefferson Parish	-	2009	Choice	1971
LA	Rapides[c]	Rapides Parish	2006	2006	SES	1969
LA	Terrebonne[c]	Terrebonne Parish	-	-		1969
MD	Baltimore City[c]	Baltimore City	-	-		1974
MD	Harford[c]	Harford County	-	-		1965

MD	Prince George's[c]	Prince George's County	2002	2001	Neighborhood	1973
MA	Suffolk	Boston	1987	2000	SES	1974
MA	Bristol	New Bedford	-	-		1976
MA	Hampden	Springfield	-	2005	Neighborhood	1974
MI	Kent	Grand Rapids	-	-		1968
MI	Ingham	Lansing	-	-		1972
MN	Hennepin	Minneapolis	-	2001	Choice	1974
MO	Jackson	Kansas City	2003	1999	Neighborhood	1977
MO	St. Louis City[c]	St. Louis City	1999	-		1980
NE	Douglas	Omaha	1984	1999	Neighborhood	1976
NV	Clark[c]	Clark County	-	-		1972
NJ	Hudson	Jersey City	-	-		1976
NY	Erie	Buffalo City	1995	2003	Choice	1976
NY	Monroe	Rochester City	-	2004	Choice	1970
NY	Westchester	Yonkers City	*2001(02)*	-		1986
NC	Cumberland[c]	Cumberland County	1978	-		1969
NC	Gaston[c]	Gaston County	*n.a.*	-		1970
NC	Mecklenburg[c]	Charlotte-Mecklenburg	2002	2002	Neighborhood	1970
NC	New Hanover[c]	New Hanover County	1983	2007	Neighborhood	1969
OH	Summit	Akron City	-	-		1977
OH	Hamilton	Cincinnati City	1991	-		1973
OH	Cuyahoga	Cleveland Municipal	1998	1993	Neighborhood	1979
OH	Franklin	Columbus City	1988	1996	Neighborhood	1979
OH	Montgomery	Dayton City	2002	2002	Neighborhood	1976
OH	Lorain	Lorain City	1994	-		1985
OH	Lucas	Toledo City	-	-		1980
OK	Comanche	Lawton	-	-		1973
OK	Oklahoma	Oklahoma City	1991	-		1972
OK	Tulsa	Tulsa	1983	-		1971
OR	Multnomah	Portland	-	-		1974
PA	Philadelphia[c]	Philadelphia City	2009	-		1978
PA	Allegheny	Pittsburgh	-	1996	Neighborhood	1980
SC	Charleston[c]	Charleston County	1994	-		1970
SC	Greenville[c]	Greenville County	1985	2002	SES	1970
SC	Richland	Richland County 01	*n.a.*	-		1970
TN	Davidson[c]	Metropolitan Nashville	1998	2008	Neighborhood	1971
TX	Travis	Austin Independent	1983	2000	Neighborhood	1980
TX	Tarrant	Dallas Independent	2003	1994	Neighborhood	1971
TX	Tarrant	Fort Worth Independent	1990	-		1973
TX	Harris	Houston Independent	1983	1998	SES	1971
TX	Lubbock	Lubbock Independent	1991	-		1978
TX	McLennan	Waco Independent	1989	-		1973
VA	Arlington[c]	Arlington County	-	1998	SES	1971
VA	Norfolk City[c]	Norfolk City	1985	2001	Neighborhood	1970
VA	Pittsylvania[c]	Pittsylvania County	-	-		1969
VA	Roanoke City[c]	Roanoke City	-	-		1970
WA	King	Seattle	*n.a.*	1997	Choice	1978
WA	Pierce	Tacoma	-	-		1968
WI	Milwaukee	Milwaukee	-	1998	Choice	1976

[c] indicates counties that are coterminous with a school district
New Castle School District, DE, was subdivided into four school districts listed above.

Table 1-2. Baseline Statistics of Sample Districts

		Policy Change Type			
Variable	All	Neighbor -hood	SES	Choice	No change
Black/white dissimilarity index	0.37	0.34	0.36	0.31	0.40
	(0.16)	(0.15)	(0.18)	(0.09)	(0.18)
Non-white/white dissimilarity index	0.35	0.32	0.35	0.28	0.38
	(0.15)	(0.13)	(0.16)	(0.08)	(0.16)
Black/white exposure index	0.47	0.43	0.48	0.54	0.47
	(0.19)	(0.16)	(0.20)	(0.15)	(0.21)
Non-white/white exposure index	0.43	0.40	0.42	0.51	0.43
	(0.19)	(0.15)	(0.21)	(0.15)	(0.21)
Percentage of black students in 90-100% black schools	0.11	0.09	0.10	0.03	0.15
	(0.18)	(0.11)	(0.16)	(0.07)	(0.22)
Percentage of minority students in 90-100% min. schools	0.16	0.14	0.18	0.06	0.19
	(0.21)	(0.15)	(0.24)	(0.09)	(0.25)
Total student enrollment	59,957	58,630	56,825	60,098	61,310
	(76,668)	(35,384)	(56,751)	(33,986)	(102,771)
Percent white students	0.51	0.47	0.50	0.58	0.52
	(0.20)	(0.16)	(0.20)	(0.17)	(0.22)
Percent black students	0.37	0.43	0.35	0.34	0.35
	(0.17)	(0.17)	(0.14)	(0.15)	(0.18)
Number of districts in Circuit 1 (MA)	3	1	1	0	1
Number of districts in Circuit 2 (CT, NY)	4	0	0	2	2
Number of districts in Circuit 3 (DE, NJ, PA)	7	2	2	1	2
Number of districts in Circuit 4 (MD, NC, SC, VA, WV)	14	4	2	0	8
Number of districts in Circuit 5 (LA, MS, TX)	12	3	3	1	5
Number of districts in Circuit 6 (KY, MI, OH, TN)	12	5	0	0	7
Number of districts in Circuit 7 (IL, IN, WI)	6	1	0	1	4
Number of districts in Circuit 8 (AR, MO, MN, NE)	5	3	0	1	1
Number of districts in Circuit 9 (AZ, CA, NV, OR, WA)	14	2	1	1	10
Number of districts in Circuit 10 (CO, KS, OK)	6	3	0	0	3
Number of districts in Circuit 11 (AL, GA, FL)	15	5	0	5	5
Number of Southern districts	51	17	7	7	20
Total number of districts	98	29	9	12	48

Descriptive statistics (mean and standard deviation in parentheses) are measured using the Public Elementary/Secondary School Universe Survey.

Means are computed using the value in 1990 or the earliest year appeared in data.

Figure 1-1. Trends in School Segregation

Panel A. All districts
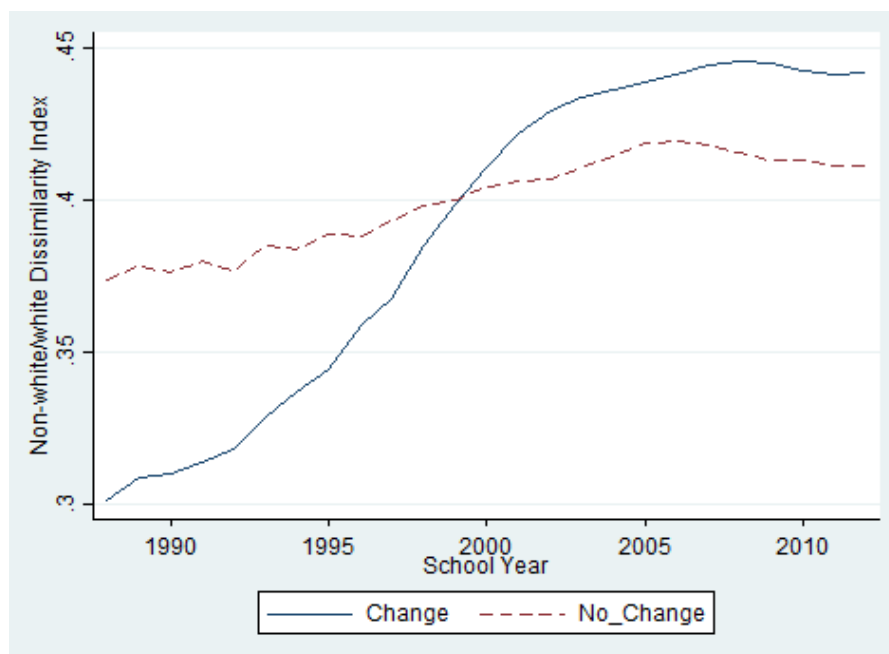
Panel B. Districts with policy changes
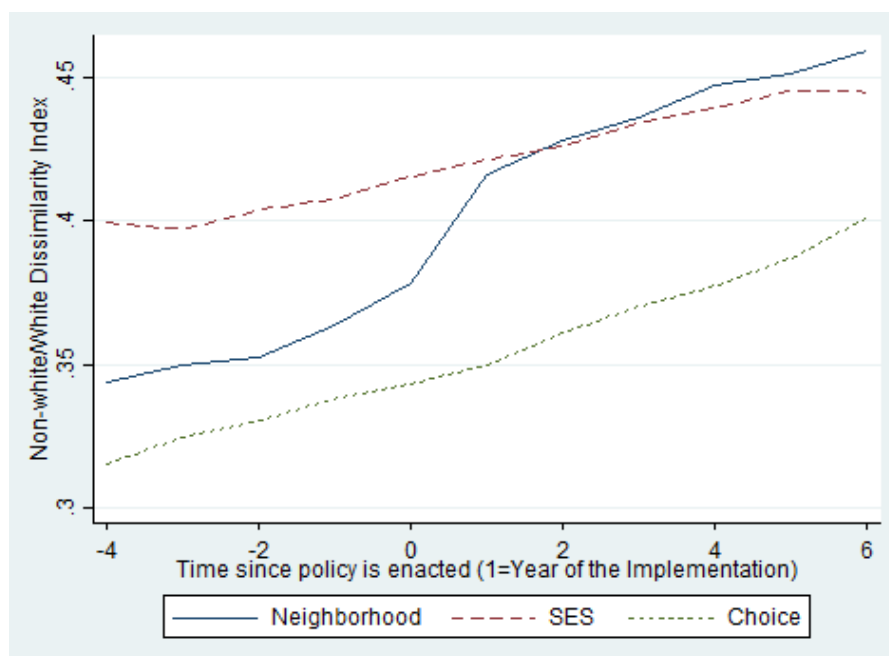
Notes: The plots are means for the relevant groups. The data is from the PSU annual panel.
For the graphical presentation, "Time since policy is encacted" equals 1 in the year of the policy implementation

Table 1-3. Estimated Effects on School Segregation

	Dissimilarity Index		Exposure Index		Racial Isolation	
	Black/ White	Non-White/ White	Black/ White	Non-White/ White	Black	Non-White
Panel A: Average Effects	(1)	(2)	(3)	(4)	(5)	(6)
Policy change	0.030***	0.028***	-0.011***	-0.009**	0.027**	0.032***
	(0.009)	(0.008)	(0.004)	(0.004)	(0.011)	(0.011)
Observations	2,047	2,047	2,047	2,047	2,047	2,047
Number of school districts	98	98	98	98	98	98
Panel B: Differential Effects	(7)	(8)	(9)	(10)	(11)	(12)
Neighborhood	0.056***	0.051***	-0.022***	-0.018***	0.049***	0.056***
	(0.011)	(0.011)	(0.005)	(0.004)	(0.017)	(0.016)
SES	-0.001	-0.003	0.005	0.003	-0.009	-0.006
	(0.009)	(0.009)	(0.005)	(0.003)	(0.009)	(0.014)
Choice	-0.005	-0.003	0.004	0.003	0.004	0.003
	(0.018)	(0.016)	(0.009)	(0.007)	(0.013)	(0.016)
Observations	2,047	2,047	2,047	2,047	2,047	2,047
Number of school districts	98	98	98	98	98	98

Standard errors in parentheses *** $p<0.01$, ** $p<0.05$, * $p<0.10$

Table 1-4. Estimated Effects on School Segregation by School Types

	Elementary and Middle Schools						High Schools					
	Dissimilarity Index		Exposure Index		Racial Isolation		Dissimilarity Index		Exposure Index		Racial Isolation	
VARIABLES	Black/ White	Non-Wh/ White	Black/ White	Non-Wh/ White	Black	Non-Wh.	Black/ White	Non-Wh/ White	Black/ White	Non-Wh/ White	Black	Non-Wh.
Panel A: Average Effects	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Policy change	0.035***	0.032***	-0.013**	-0.011**	0.033***	0.036***	0.019**	0.019**	-0.005	-0.003	0.010	0.018
	(0.010)	(0.009)	(0.005)	(0.004)	(0.012)	(0.013)	(0.009)	(0.009)	(0.003)	(0.003)	(0.012)	(0.013)
Observations	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047
Number of school districts	98	98	98	98	98	98	98	98	98	98	98	98
Panel B: Differential Effects	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Neighborhood	0.066***	0.060***	-0.027***	-0.020***	0.059***	0.067***	0.032***	0.036***	-0.008*	-0.008**	0.014	0.020
	(0.012)	(0.012)	(0.006)	(0.006)	(0.018)	(0.018)	(0.012)	(0.012)	(0.004)	(0.003)	(0.021)	(0.018)
SES	-0.009	-0.006	0.009	0.003	-0.007	-0.013	0.014	0.004	-0.006	0.004	-0.013	0.010
	(0.009)	(0.010)	(0.007)	(0.004)	(0.012)	(0.019)	(0.014)	(0.018)	(0.007)	(0.004)	(0.011)	(0.022)
Choice	-0.002	-0.001	0.002	0.001	0.004	-0.001	-0.009	-0.008	0.003	0.003	0.017	0.020
	(0.022)	(0.019)	(0.011)	(0.009)	(0.014)	(0.016)	(0.017)	(0.016)	(0.008)	(0.006)	(0.014)	(0.027)
Observations	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047	2,047
Number of school districts	98	98	98	98	98	98	98	98	98	98	98	98

Standard errors in parentheses *** $p<0.01$, ** $p<0.05$, * $p<0.10$

Table 1-5. Estimated Effects on School Segregation: Within-group Analysis

	Neighborhood		SES		Choice	
	Black/ White	Non-White/ White	Black/ White	Non-White/ White	Black/ White	Non-White/ White
Panel A: Dissimilarity Index	(1)	(2)	(3)	(4)	(5)	(6)
Policy change	0.044**	0.039**	-0.015	-0.018	-0.011	-0.013
	(0.017)	(0.018)	(0.016)	(0.014)	(0.022)	(0.015)
Observations	493	493	161	161	213	213
Number of school districts	29	29	9	9	12	12
Panel B: Exposure Index	(7)	(8)	(9)	(10)	(11)	(12)
Policy change	-0.018**	-0.016**	0.007	0.005	0.004	0.007
	(0.007)	(0.006)	(0.011)	(0.007)	(0.008)	(0.006)
Observations	493	493	161	161	213	213
Number of school districts	29	29	9	9	12	12
Panel C: Racial Isolation	(13)	(14)	(15)	(16)	(17)	(18)
Policy change	0.047*	0.053**	-0.004	-0.002	-0.014	-0.005
	(0.024)	(0.024)	(0.008)	(0.017)	(0.012)	(0.006)
Observations	493	493	161	161	213	213
Number of school districts	29	29	9	9	12	12

Standard errors in parentheses *** $p<0.01$, ** $p<0.05$, * $p<0.10$

Table 1-6. Estimated Effects on School Segregation – Sensitivity Checks

	W/O observations after the 2nd policy change						With additional SES policy districts					
	Dissimilarity Index		Exposure Index		Racial Isolation		Dissimilarity Index		Exposure Index		Racial Isolation	
VARIABLES	Black/ White	Non-Wh/ White	Black/ White	Non-Wh/ White	Black	Non-Wh.	Black/ White	Non-Wh/ White	Black/ White	Non-Wh/ White	Black	Non-Wh.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Neighborhood	0.054***	0.050***	-0.022***	-0.017***	0.048***	0.053***	0.055***	0.051***	-0.022***	-0.017***	0.048***	0.055***
	(0.011)	(0.011)	(0.005)	(0.005)	(0.017)	(0.016)	(0.011)	(0.011)	(0.005)	(0.004)	(0.017)	(0.016)
SES	-0.001	-0.003	0.004	0.003	-0.006	0.001	0.002	-0.000	0.000	0.001	-0.007	-0.001
	(0.009)	(0.009)	(0.005)	(0.004)	(0.008)	(0.012)	(0.008)	(0.007)	(0.004)	(0.003)	(0.006)	(0.010)
Choice	-0.001	0.001	-0.001	0.001	0.007	0.006	-0.005	-0.003	0.004	0.003	0.004	0.003
	(0.019)	(0.017)	(0.010)	(0.008)	(0.013)	(0.017)	(0.018)	(0.016)	(0.009)	(0.007)	(0.013)	(0.016)
Observations	2,026	2,026	2,026	2,026	2,026	2,026	2,140	2,140	2,140	2,140	2,140	2,140
Number of school districts	98	98	98	98	98	98	103	103	103	103	103	103

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.10

Table 1-7. Estimated Effects on School Segregation – Alternative Classification

	Dissimilarity Index		Exposure Index		Racial Isolation	
	Black/ White	Non-White/ White	Black/ White	Non-White/ White	Black	Non-White
Panel A: Average Effects	(1)	(2)	(3)	(4)	(5)	(6)
Policy change	0.032***	0.029***	-0.012***	-0.009**	0.029**	0.030**
	(0.009)	(0.009)	(0.004)	(0.004)	(0.011)	(0.011)
Observations	2,047	2,047	2,047	2,047	2,047	2,047
Number of school districts	98	98	98	98	98	98
Panel B: Differential Effects	(7)	(8)	(9)	(10)	(11)	(12)
Neighborhood	0.056***	0.050***	-0.021***	-0.015***	0.043**	0.047***
	(0.011)	(0.011)	(0.004)	(0.004)	(0.018)	(0.017)
SES	-0.002	-0.003	0.005	0.003	-0.008	-0.007
	(0.009)	(0.009)	(0.005)	(0.004)	(0.009)	(0.014)
Choice	0.005	0.009	-0.005	-0.004	0.025	0.021
	(0.020)	(0.018)	(0.011)	(0.009)	(0.019)	(0.021)
Observations	2,047	2,047	2,047	2,047	2,047	2,047
Number of school districts	98	98	98	98	98	98

Table 1-8. Estimated Effects on School Segregation with Alternative Length of Time Period

	Dissimilarity Index				Exposure Index				Racial Isolation			
	Black/White		Non-White/White		Black/White		Non-White/White		Black		Non-white	
	±10 yrs	±5 yrs	±10 yrs	±5 yrs	±10 yrs	±5 yrs	±10 yrs	±5 yrs	±10 yrs	±5 yrs	±10 yrs	±5 yrs
Panel A: Average Effects	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Policy change effect	0.030***	0.024***	0.028***	0.022***	-0.011***	-0.010***	-0.009**	-0.007**	0.027**	0.017*	0.032***	0.023***
	(0.009)	(0.008)	(0.008)	(0.007)	(0.004)	(0.004)	(0.004)	(0.003)	(0.011)	(0.010)	(0.011)	(0.009)
Observations	2,047	1,628	2,047	1,628	2,047	1,628	2,047	1,628	2,047	1,628	2,047	1,628
Number of school districts	98	98	98	98	98	98	98	98	98	98	98	98
Panel B: Differential Effects	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(34)
Neighborhood	0.056***	0.040***	0.051***	0.037***	-0.022***	-0.018***	-0.018***	-0.013***	0.049***	0.032**	0.056***	0.034**
	(0.011)	(0.010)	(0.011)	(0.010)	(0.005)	(0.005)	(0.004)	(0.004)	(0.017)	(0.015)	(0.016)	(0.013)
SES	-0.001	0.006	-0.003	0.003	0.005	-0.001	0.003	-0.001	-0.009	-0.004	-0.006	0.017
	(0.009)	(0.005)	(0.009)	(0.006)	(0.005)	(0.003)	(0.003)	(0.001)	(0.009)	(0.010)	(0.014)	(0.014)
Choice	-0.005	-0.003	-0.003	-0.001	0.004	0.003	0.003	0.003	0.004	-0.004	0.003	0.003
	(0.018)	(0.014)	(0.016)	(0.011)	(0.009)	(0.007)	(0.007)	(0.005)	(0.013)	(0.011)	(0.016)	(0.011)
Observations	2,047	1,628	2,047	1,628	2,047	1,628	2,047	1,628	2,047	1,628	2,047	1,628
Number of school districts	98	98	98	98	98	98	98	98	98	98	98	98

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.10

Chapter 2. The impact of ending school desegregation plans on ninth grade repetition rates

2.1. Introduction

The landmark Supreme Court decisions of *Brown v. Board of Education* (1954) and subsequent cases led to the implementation of school desegregation plans in hundreds of school districts across the country. Implementation of court-ordered school desegregation plans resulted in rapid and dramatic increases in school integration. In 125 school districts examined by Welch and Light (1987), the proportion of black students attending virtually all-minority schools fell from 62 to 30 percent between 1968 and 1980.[1] The school desegregation was even more successful in the areas where schools were most racially segregated. In the ex-Confederate states of the South, the percentage of black students attending schools that were 90 percent or more black fell from 78 percent in 1968 to 25 percent just four years later (Clotfelter, 2004). Recent literature has found that school desegregation has brought beneficial effects to black students including lower dropout rates (Guryan, 2004; Reber, 2010), reduced criminal convictions (Weiner, Lutz, & Ludwig, 2009), increased income (Ashenfelter, Collins, & Yoon, 2006; Johnson, 2011), and improved adult health (Johnson, 2011).

In the last two decades, a large number of school districts in the U.S. have removed school desegregation plans or have adopted dramatic changes in their desegregation plans. A number of studies find that school segregation increases in the school districts that were released from court desegregation orders (Clotfelter, Vigdor, & Ladd, 2006; Lutz, 2011; Oh, 2015; Orfield & Eaton, 1996; Reardon, Grewal, Kalogrides, & Greenberg, 2012). In addition to the impact on school segregation, Billings, Deming, and Rockoff (2014) find that the end of race-

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[1] Throughout this paper, a school year is denoted by the calendar year in which it starts (e.g., the 2000-2001 school year is denoted as 2000).

based busing in Charlotte-Mecklenburg, North Carolina negatively affects high school test scores

for both white and minority students, high school graduation and four-year college attendance for

whites, and crime rates for minority males in majority-minority schools. Using the 1990 and

2000 IPUMS (Integrated Public Use Microdata Series), Lutz (2011) also finds that dismissal

from a court order leads to small increases in black dropout rates in non-Southern districts.

This paper contributes to previous literature by examining the impact of the changes in

school desegregation plans on ninth grade repetition rates in approximately 100 school districts.

In addition, it examines how the impact of the policy change on the grade repetition rates is

mediated through its impact on school segregation. The impact of the desegregation policy

changes on educational outcomes is likely to depend on the changes in peer racial composition

and related changes in schools. The present study uses approximately 100 school districts to

explore whether the effect of the policy change on grade repetition rates is related to the effect of

the same policy change on school segregation.

In addition, this study uses an educational outcome that can be consistently measured

across school districts. Educational outcomes reported by the National Center for Education

Statistics (NCES) or other agencies are based on state reports, but there are substantial

differences in measuring an outcome over time, across states, and even across school districts

within a state. Due to these measurement issues, scholars often compute educational outcomes

in their own way. For example, following Heckman and LaFontaine (2010), high school

graduation is often computed by dividing the number of diplomas issued by a school district in a

given year by the number of entering eighth grade students five years earlier. However, because

there is a five-year gap between the years measuring the number of the eighth graders and the

number of students who received diplomas, the diplomas awarded in a given year include awards

received by members of other cohorts in addition to the cohort that first entered high school five years earlier. In addition, this measure is sensitive to net transfers in and out of the school district in the five years. Instead of relying on this problematic measure, this paper examines the grade repetition rate that compares the grade of enrollment across two consecutive years. Among many grade levels, this paper focuses on the ninth grade repetition rate which is the proportion of ninth grade students who could not be promoted to the tenth grade and remain in the same grade for a subsequent school year.

Examining ninth grade repetition rates is important because ninth grade repetition is closely related to high school dropout and later life outcomes (Hauser, Pager, & Simmons, 2004; Jimerson, 1999). Grade repetition is one of the powerful predictors of high school dropout, with retained students being 5 to 11 times more likely to drop out (Jimerson, Anderson, & Whipple, 2002). In particular, ninth-grade academic outcomes such as percentage of courses failed are correlated with the probability of dropping out of high school which implies that the transition from the ninth grade to the tenth grade can alter students' educational trajectories (Neild, Stoner-Eby, & Furstenberg, 2008). Having a high school credential has substantial impacts on labor market outcomes (Autor, Katz, & Kearney, 2008; Oreopoulos, 2007; Rouse, 2007). Descriptively, young adults ages 25-34 without a high school credential have lower annual earnings ($22,900 vs. $30,000) and higher unemployment rates (15 percent vs. 12 percent) than high school completers (Kena et al., 2014). If the removal of school desegregation policies increases ninth grade repetition rates, it can also increase the proportion of students who drop out of high school, and lead to a negative impact on subsequent life courses.

The identification strategy of this paper compares the ninth grade repetition rates of school districts that changed school desegregation plans in a year to the outcome of school

districts that did not change school desegregation plans in the same year, after controlling for district-specific trends. In the 98 school districts examined in this paper, I find that the changes in student assignment policies associated with being released from desegregation obligations increased ninth grade repetition rates. My results suggest that the desegregation policy changes increased the ninth grade repetition rates by 3 to 4 percentage points, which is an increase of 0.2 standard deviations. The impact on the ninth grade repetition rate is driven by the school districts where school segregation was substantially increased due to the changes in desegregation policies. In addition, I find no evidence that the desegregation policy changes affect student movements from other districts or private schools.

The paper proceeds as follows. Section 2.2 provides background on grade repetition. Section 2.3 describes the theoretical framework. Section 2.4 describes the data. Section 2.5 explains the empirical strategy, Section 2.6 presents results, and Section 2.7 concludes.

2.2. Background

In 2007, 11 percent of public school students in kindergarten through grade 12 repeated a grade since starting school (Aud, Fox, & KewalRamani, 2010). Among grades 1 through 9, the first and ninth grade students repeat the grade most frequently (Warren, Hoffman, & Andrew, 2014). Relative to whites, grade repetition rates of blacks (21 percent vs. 9 percent) and Hispanics (12 percent vs. 9 percent) are substantially higher (Aud et al., 2010). Reasons for repeating a grade include grade retention due to the lack of academic progress and suspension due to misbehavior. Throughout this paper, I use the term of grade repetition to distinguish it from grade retention which is one of the two main reasons of repeating a grade.

Grade retention is a widely used educational remedy that holds back students when they lack required academic skills to advance to the next grade. Being retained, especially in a

primary grade, can help students perform better in classes (Alexander, Entwisle, & Dauber, 2003). However, initial academic improvements occur only during the year that the student is retained, and the achievement gains decline within 2 to 3 years of retention (Jimerson, Woehr, Kaufman, & Anderson, 2003). In addition, the causal effect of retention in later grades is unclear. It has no impact at best or negatively affects academic performance and high school completion (Jimerson, 1999; Jimerson et al., 2002; Hauser et al., 2004; Neild et al., 2008). The main source of the negative impacts is due to the stigma of failure associated with grade retention that negatively influences students' self-esteem and peer relationships (Anderson, Jimerson, & Whipple, 2005; Jimerson, 2001).

Suspension is temporary removal from regular school activities either in or out of school due to behavioral problems. Suspension is a commonly used discipline tool to improve student behavior. In 2007, about 25 percent of public school students in grades 9 through 12 had been suspended (Aud, KewalRamani, & Frohlich, 2011). Suspensions can last one day to several weeks. The vast majority of suspensions are due to minor infractions of school rules, and in these cases, suspension only lasts a couple of days. Serious infractions which often involve school violence, a weapon, or illegal drugs can result in lengthy suspensions. For example, in cases of suspensions due to the use or possession of a weapon other than a firearm in school, six percent of students were suspended for the remainder of school year (Neiman & Hill, 2011). Despite disciplinary benefits of suspension, it can negatively affect student outcomes because the loss of instructional time incurred during the suspension may lower students' academic performance. Like grade retention, the effect of suspension on academic performance is controversial. Some studies find no impact of suspension, but they often do not account for

either the length of suspensions or the grade in which students were suspended (Cobb-Clark et al., 2015; Kinsler, 2013).

In addition to the impact of suspension on academic achievement, civil rights groups argue that suspended students are often left without adult supervision out of school so engage in risky behaviors (Losen & Gillespie, 2012; Losen & Skiba, 2014). Civil rights groups also argue that the disparity in suspension rates across racial groups are due to discriminatory actions of teachers or school principals against minority students. There are differences in rates of suspension by race. In 2007, 49 percent of blacks in grades 9 through 12 had ever been suspended while 26 percent of Hispanics, 18 percent of whites, and 13 percent of Asian students in grades 9 through 12 had ever been suspended (Aud et al., 2011).

Suspension is often short, so suspended students are not likely to repeat a grade because they fail to have the minimum number of class days from their initial suspension. Likewise, due to the short length of suspensions, the negative impacts of suspension on academic achievement are not likely due to the loss of instructional time. Thus, the main mechanism that suspension leads to grade repetition is likely to be the changes in peer characteristics. Because suspended students are more likely to interact with peer groups engaging in risky behaviors out of school, the new peer groups may negatively affect student's academic performance or behaviors.

Some polices contribute to the increase in the number of grade repeaters. One of the policies can be changes in states' accountability policies which focus on high stakes test scores. In response to pressures to improve school performance, states and districts have been developing several policies regarding grade level promotion standards. Applying strict standards of grade level promotion based on test scores results in increases in grade retentions (Hauser, Frederick, & Andrew, 2007). In addition, zero tolerance and War on Drugs policies in the 1980s

and the *Gun-Free School Act* (GFSA) of 1994 have increased suspension rates (Walker, 2014). The GFSA enacted in October, 1994 requires that all local education agencies receiving federal funds under the Elementary and Secondary Education Act have a state law that expels a student bringing a firearm or explosive device to school from school for a period of not less than a year. In developing the law, states also included provisions for having minor weapons which often involve suspensions. As a result of the policies, suspensions related to the possession and the use of minor weapons were increased. Finally, the 1999 Columbine school shooting heightened attention to the zero tolerance policies, which further increases suspension rates.

Recent changes in school desegregation plans can also influence grade retention and suspensions. School desegregation plans improved educational attainment especially of minority students (Guryan, 2004; Reber, 2010), but the removal of school desegregation plans may undo this achievement. Despite the clear increase in school segregation (Clotfelter et al., 2006; Lutz, 2011; Oh, 2015; Orfield & Eaton, 1996; Reardon et al., 2012), not many studies examine student outcomes. One recent study by Billings et al. (2014) examines socially important outcomes in Charlotte-Mecklenburg, North Carolina. They find that ending race-based busing negatively affects high school test scores for both white and minority students, high school graduation and four-year college attendance for whites, and crime rates for minority males in majority-minority schools. Using approximately 100 school districts, Lutz (2011) also finds suggestive evidence that dismissal of a court desegregation order leads to a small increase in black dropout rates in non-Southern districts.

2.3. Theoretical Framework

Recent changes in the policies that regulate school desegregation resulted in an increase in racially isolated schools (Clotfelter et al., 2006; Lutz, 2011; Oh, 2015; Orfield & Eaton, 1996; Reardon et al., 2012). Because race and socioeconomic status are closely related in the U.S.,

racially segregated schools also have a large number of students from economically disadvantaged backgrounds. On average, minority students and economically disadvantaged students have lower academic performance and higher rates of school rule infractions than whites. Due to the racial and income disparity in the outcomes, schools where minority and low income students are concentrated have large proportions of underperforming students. The concentration of racially and economically disadvantaged students in school may increase grade repetition rates for the three following reasons.

First, teachers may have difficulties in improving student academic performance in a classroom with a large number of poor performing students. Literature on the costs of education suggests that the minimum spending required to produce a given level of output is higher in schools that have higher proportions of minority students or poor students who tend to be underperforming (Duncombe & Yinger, 2008). The literature mainly focuses on cost differentials by individual student's characteristics, but it may be possible that the per-pupil costs would increase at the increasing rate depending on the share of minority students or poor students in a school. If so, without considering the school-level proportion of low or poor students when calculating the per-pupil costs, the increase in the share of underperforming students in a school may lead to insufficient funds to improve student performance in the school with a high proportion of underperforming students. Because the removal of school desegregation plans increases school segregation, it may also increase the number of students who fail to meet the minimum academic progress to the next grade in the schools with high proportions of minority or poor students.

Second, students in a classroom or a school with a large proportion of students with low academic performance and risky behaviors will be negatively affected by their school peers.

Substantial literature finds that school peer composition affects student outcomes. Many studies find effects of peers on student test scores, and Lavy, Paserman, & Schlosser (2012), Bifulco, Fletcher, and Ross (2011), Bifulco, Fletcher, Ross, and Oh (2014), and Billings et al. (2014) find the effects of peers on high school graduation, college attendance, and labor market outcomes. Weiner, Lutz, and Ludwig (2009) and Billings et al. (2014) also find the effects of school peers on crime rates of young adults. Because changes in school peer composition influence student outcomes, the increase in the number of schools with higher proportions of students with low academic performance and risky behaviors will increase grade repetition rates because more students would have to repeat a grade due to grade retention or suspension.

Third, teachers might use suspensions more frequently as a disciplinary tool in schools with high proportions of minority and disrupting students. In a classroom with a small number of disrupting students, teachers will be able to address disruptive behavior in the classroom. In contrast, when the number of disrupting students is beyond a teacher's capacity to handle, he or she may choose suspension to solve classroom disruption. This possibility can be magnified under the current accountability system which evaluates teacher performance based on student test scores. Due to the pressure to improve student test scores, teachers will be more likely to resort to suspensions which can be effective in creating productive learning environments in a short run. In addition, some scholars argue there are disparities in school discipline practices that treat minority students less favorably (Losen & Gillespie, 2012; Losen & Skiba, 2014). If so, teachers would apply school rules more strictly in schools with more minority students.

2.4. Data

This section is divided into four subsections. The first discusses the sample, the second describes data sources, the third discusses the measurement of ninth grade repetition rates, and the fourth presents summary statistics.

2.4.1. Sample

A study by Welch and Light (1987), commissioned by the OCR (Office for Civil Rights), provides information on a sample of school districts that implemented school desegregation plans. Of the data sources that provide information on school desegregation plans, Welch and Light (1987) is the only one that includes districts that implemented desegregation plans by OCR orders, state legislation, and voluntarily.[2] The Welch and Light (1987) sample includes around one half of the school districts that were ever subject to school desegregation orders with the enrollment greater than 10,000 students and with the proportion of black students between 10 and 90 percent in 1990.[3]

This study uses the Welch and Light (1987) sample but excludes the following districts. First, the 16 districts in the sample that did not adopt any desegregation plans are excluded. As this study focuses on estimating the effect of major changes in school desegregation plans, it is inappropriate to include districts that did not have desegregation plans. The districts excluded by this restriction are 15 districts with the "No plan" classification and one district (New Orleans in Louisiana) which only gave students options to transfer to different public schools ("Freedom of choice" plan by Welch and Light).[4] Second, eight districts with a white population of less than 10 percent and six districts with a black population of less than 10 percent in the earliest year

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[2] Other data sources provide information on which school districts were subject to court desegregation orders (Logan & Oakley, 2004; Reardon et al., 2014).

[3] Author's calculation using the data of Reardon et al. (2012)

[4] Yonkers in New York and Lorain in Ohio adopted desegregation plans in the late 1980s, so they are treated as having desegregation plans.

when student enrollment by race appears in the data are excluded.[5] These exclusions leave a

sample of 98 school districts, which are listed in Table 2-1.[6]

2.4.2. Data Sources

The data to measure grade repetition rates come from the Common Core of Data (CCD)

of the National Center for Education Statistics (NCES). Public Elementary/Secondary School

Universe (PSU) Survey of the CCD has reported student enrollment by grade since 1987. Race-

specific enrollment of each grade is available since the late 1990s but is volatile until the early-

2000s.

I document the year of the major changes in school desegregation plans that occurred

following the release from court-ordered desegregation plans or under continuing desegregation

obligations. The legal term "unitary" signifies that a school district successfully eliminated a

dual school system that separates black and white students. Information on the year that a

district achieved unitary status is available from other sources (Clotfelter et al., 2006; Lutz,

2011), but the timing of court rulings is often not contemporaneous with changes in school

desegregation plans. Even though scholars often use the year of unitary decision as the year of

the court release of school desegregation orders, the implications of achieving unitary status were

unclear until *Dowell v. the Oklahoma City Board of Education* (1991) and *Freeman v. Pitts*

(1992) allowed districts that had achieved unitary status to move away from student assignment

policies designed to achieve racial balancing requirements.

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[5] The eight excluded districts that have less than 10% white students are Birmingham, AL; Oakland, CA; Harford, CT; Atlanta, GA; Detroit, MI; New Jersey, NJ; Memphis, TN; and San Antonio, TX. The six excluded districts with less than 10% black students are Tucson, AZ; San Jose, CA; Amarillo, TX; Ector, TX; El Paso, TX; and Raleigh, WV. School-level information in Georgia, Missouri, and Virginia first appeared in 1993, 1991, and 1992 NCES survey, respectively.

[6] New Castle County District in Delaware had been formed by school desegregation order of the U.S. District Court in 1978 and was treated as a single district by Welch and Light (1987). The county district was divided into four racially balanced districts, Brandywine, Christina, Colonial, and Red Clay in 1981, and I treat the four districts as separate districts.

There are frequently substantial time gaps between the year of being declared unitary and the year of major changes in school desegregation plans for following reasons (See Oh (2015) for more details). First, most districts that were declared unitary prior to the 1990s, before the *Dowell* (1991) and *Freeman* (1992) decisions, did not substantially modify their school assignment policies. In these cases, the date of being declared unitary tells us almost nothing about the timing of policy changes. Second, the date of being declared unitary and being released from court supervision is often ambiguous. In some cases, districts may have achieved unitary status with respect to student assignment but still remain under court supervision with respect to other factors. Third, even after the *Dowell* (1991) and *Freeman* (1992) decisions, districts entered into legally binding agreements to maintain desegregation efforts for some period of time as a condition of being declared unitary, and thus, actual release from court supervision did not occur for a number of years after being declared unitary. Fourth, it is possible that important changes in a district's student assignment policies led to legal challenges that resulted in a declaration of unitary status, in which case the relevant policy changes preceded the declaration of unitary status.

Thus, instead of relying on the year of unitary decisions, I document the exact timing of changes in student assignment policies in the sample districts using the following sources. First, school desegregation lawsuit decisions were found using Lexis-Nexis, the summary document of unitary status used for Clotfelter et al. (2006), and the data section of "Desegregation Court Cases & School Demographic Data" of the Initiative in Spatial Structures in Social Sciences (S4) project at Brown University.[7] Second, school district websites, local newspapers, the electronic archives of Education Week, and websites of the Civil Rights Project and the Integration Reports

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[7] Duke University Faculty Database: http://fds.duke.edu/db/attachment/282
  Spatial Structure in Social Science Project: http://www.s4.brown.edu/schoolsegregation/desegregationdata.htm

were searched for additional information beyond legal documents.[8] Third, district officials were

contacted to verify conflicting information on student assignment policies. Appendix A presents

the details of the data sources used, and Table 2-1 presents the year of the major policy change of

the sample districts of this paper.

2.4.3. Outcome measurement

Grade repetition rates which track the proportions of each grade repeaters among the

students who entered the first grade in the same year (denoted as cohorts) is rarely available.

Thus, education scholars have developed several ways of measuring grade repetition rates by

comparing grade of enrollment across consecutive years (Hauser et al., 2007; Warren & Saliba,

2012; Warren et al., 2014). Following these education scholars, the ninth grade repetition rate is

measured as the percent change of the ninth grade enrollment in a year compared to the eighth

grade enrollment in its previous year. This measure captures the percent of the ninth grade

students who retained in the ninth grade without progressing to the tenth grade. Specifically, the

ninth grade repetition rate is measured by the following equation (1).

$$\text{Ninth Grade repetition Rate}_{it} = \frac{\text{Grade 9 Enrollmen,it} - \text{Grade 8 Enrollment,it}-1}{\text{Grade 8 Enrollment,it}-1} \text{ x } 100 \qquad (1)$$

The two main components of this measure are the eighth and ninth grade enrollment of a

district. Because these two components are affected by many factors, this measure cannot

present the current level of grade repetition rates of a district. For example, in a district where a

majority of its middle school students are from adjacent districts, the eighth grade enrollment of

the district can be larger than the ninth grade enrollment, resulting in negative ninth grade

repetition rates using this measure. This issue is similar in the districts where a large number of

students enrolled in private elementary or middle schools attend public high schools. This

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[8] The Civil Rights Project: http://civilrightsproject.ucla.edu/
  The Integration Reports: http://theintegrationreport.wordpress.com/

measure can be also affected by several factors including ninth grade dropout rates. Holding constant all other factors that affect the eighth and the ninth grade enrollment, however, this measure can be used to examine the changes in the grade repetition rates in a district. Because this measure has a number of limitations, I use regression controls to overcome some of the issues related to the measure (i.e., district-specific trend controls). In addition, in Section 2.6.3, I carefully examine alternative sources that the eighth and the ninth grade enrollment can be affected to show that this measure using the regression control captures the changes in the grade repetition rates for the purpose of this study.

This study focuses on ninth grade repetition rates due to another limitation of the measurement of the grade repetition rates. Measuring grade repetition rates of higher than the ninth grade based on the grade of enrollment across two consecutive years will be less accurate because the ninth grade is the first grade in which a large number of students are held back. For example, measuring tenth grade repetition rates by comparing the tenth grade enrollment to the ninth grade enrollment across two consecutive years would be biased due to the inclusion of students who repeat the ninth grade. Later grade repetition rates are more closely related to socially important outcomes such as high school dropout and completion rates, and the ninth grade is the latest grade that the repetition rates can be accurately measured. Thus, this study focuses on ninth grade repetition rates.

2.4.4. Summary Statistics

Table 2-1 presents the sample districts. "Unitary" lists the year of the release from court desegregation orders, and "Policy Change" lists the year of the desegregation policy change since 1990. The comparison between "Unitary" and "Policy Change" shows that the year of the court decision is not always close to the year of the policy change. Some of the districts that are

still subject to the desegregation orders changed their desegregation plans. In contrast, a few

districts were released from such orders but have not changed their desegregation plans. Among

the 98 districts in the study sample, 50 districts made changes to their desegregation plans during

the 1990s or 2000s.

Table 2-2 presents baseline statistics for the sample districts in 1990 or the earliest year

that the district appears in the data.[9] Baseline statistics are presented for all districts and districts

with and without policy changes. The average ninth grade repetition rate of all districts is 19

percent. The average number of students is approximately 60,000. In terms of student

composition, 51 percent of students in the districts are white, 37 percent of students are black,

and 12 percent of students are Hispanic.

To capture different aspects of school segregation, three common measures of

segregation are presented: the non-white to white dissimilarity index, the non-white to white

exposure index, and the percent of non-white students attending a school with 90 percent or more

minorities. The dissimilarity index measures the degree to which non-whites and whites are

evenly spread among schools. It ranges from 0 to 1, with higher values representing more

segregation and lower values representing a more even distribution of non-whites and whites

across schools. This index measures school segregation conditional on each district's student

racial composition, so it is not sensitive to the changes in the racial composition over time.

However, because it captures student movements across the district mean of school racial

composition, it misses the movements below or above the mean.

This shortcoming can be overcome by the exposure index which measures the proportion

of white students in the typical non-white student's school. Higher values of the exposure index

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[9] School-level information in Georgia, Missouri, and Virginia first appeared in 1993, 1991, and 1992 NCES survey, respectively.

represent greater exposure of non-white students to white students. The percent of non-white students in a school with more than 90 percent minorities measures the racial isolation of non-white students. These last two measures are easy to interpret but sensitive to the changes in student racial composition such as the decrease in the number of white students due to the decrease in the share of white population in the U.S.

The mean non-white/white dissimilarity index of the sample districts is 0.35, which means 35 percent of non-white students would have to move from schools where they are overrepresented to schools where they are underrepresented to achieve a racial composition in each school that matches the racial composition of the district as a whole. The mean non-white/white exposure index is 0.43 which means the proportion of white students in the typical non-white student's school is 43 percent. 16 percent of non-white students were attending a school with 90 percent or more non-white students.

Summary statistics by the policy change status show that the districts that changed their desegregation policies in the 1990s and 2000s (the change group) are similar to that districts that have not changed their policies (the no change group). The ninth grade repetition rate for the change group is 20 percent, which is slightly higher than the rate of the no change group (18 percent). Compared to the districts with the policy changes, school districts in the no change group have higher levels of school segregation measured using the dissimilarity index and a higher percent of minority students[10] in schools with 90 percent or more minorities. The school segregation level measured using the exposure index is the same for both groups. The differences in the segregation measures between the change and the no change groups suggest that overall student distribution of the no change group is similar to the one of the change group, but the no change group has more schools in the center of the racial distribution of schools. That

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[10] Minority is defined as black and Hispanic.

is, school districts in the no change group have more schools that have just below or above the district mean of the percentage of black or non-white students. School districts in the no change group are also slightly bigger in terms of student enrollment and have lower proportions of minority students.

Examination of the observable variables listed in Table 2-2 reveals that the policy change and the no change groups are similar in the observable characteristics. The last column of Table 2-2 examines whether there are statistical differences between the means of the two groups using t-tests. Among the eight variables, the only significant difference is in the dissimilarity index, one of the three school segregation measures. This difference implies that the non-whites and whites were less evenly distributed across schools in the school districts that did not change their desegregation policies. The ninth grade repetition rate in the no change group is not statistically different from the rate in the change group. The districts with and without the policy change are similar in many observable ways, but it is impossible to rule out potential differences in unobservable factors. Thus, policy impacts will be estimated both with and without the districts that did not change desegregation policies.

2.5. Empirical Strategy

The empirical strategy of this paper uses the variation in the timing of policy changes across districts to estimate the effect of the policy changes (an interrupted time series with comparison group design). This design with trend controls identifies the association between a policy change and a particular outcome by comparing deviations from outcome trends in districts that have implemented the policy change to deviations from outcome trends during the same year in districts that have not (yet) implemented the policy change. In studies where the introduction of the policy change is initiated at different times in different districts, this design can help to

address potential bias from the other events associated with the outcome. Specifically, such time-specific events can threaten causal inferences only if they occurred at the same time as the introduction of the policy change, which is unlikely if the change is introduced at different points in time in different districts (Shaddish, Cook, & Campbell, 2001).

To examine the causal impact of the desegregation policy changes on the ninth grade repetition rates, I implement an interrupted time series design by estimating the below equation:

$$\text{Ninth Grade Repetition Rate}_{ict} = \beta\, D_{ict} + Z_{ict}{}'\psi + \theta_i + \delta_i\, T_t + \lambda_{ct} + \varepsilon_{ict.} \qquad (2)$$

In this equation, i, c, and t index a school district, court circuit, and year, respectively. The ninth grade repetition rate for each district is measured using equation (1). D is an indicator of the policy changes that takes the value of 1 in years after the district changed student assignment policies and 0 otherwise. The vector of Z_{ict} includes controls of total enrollment, percent of non-white students, and percent of non-white students squared. A time counter variable (T) takes on a value of 1 for the first year of the time series and increases by one for each subsequent year. δ_i is the slope of a district specific trend line. λ_{ct} is circuit specific year fixed-effects which control for year specific events and account for the differences among the circuit courts in the probability of policy changes (See Reardon et al., 2012).[11] ε_{ict} is a random error term, and, because observations for multiple years are used for each district, standard errors are clustered at the district level. β indicates the average effects of the desegregation policy changes. Due to the inclusion of the district-specific trend control, β specifically tells how much, on average, the ninth grade repetition rate deviates from district-specific trends following the policy changes

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[11] Desegregation policy change is closely related to court declaration of school districts as unitary, and judicial approaches to desegregation differ substantially across court circuits. Reardon et al. (2012) find that there are significant differences among the court circuits in the probability of release; dismissal rates are highest in the seventh and tenth circuits and lowest in the second, fifth, and ninth circuits.

controlling for how much the outcome in the districts in the same federal circuit without the policy changes deviates from their specific time trend in the same years.

The district-specific time trend (T) is included in the regression for several reasons. First, it is important to estimate the policy impact by comparing the changes in the grade repetition rates, because the grade repetition rates could have been trending upwards or downwards prior to the desegregation policy changes. It is particularly important because the measurement of grade repetition rates used in this paper is sensitive to external factors. For example, as explained earlier, in a district where a large number of eighth grade students are from other districts, the ninth grade repetition rates of the district measured using equation (1) will be negative because the district's eighth grade enrollment is larger than ninth grade enrollment. In estimating the policy impact on the changes in the outcome, it is not problematic because the coefficient, β, will capture the changes in the repetition rates when the negative value of the repetition rates become smaller or positive. However, if the percent of the eighth graders transferred in or out of the district was changing prior to the policy change due to the reasons unrelated to the desegregation policy changes, the impact estimate of the policy changes will be affected by the changes in the eighth grade enrollment. The inclusion of the trend control helps to address such concerns because the policy impact is estimated after controlling for the trending factors.

Second, with the trend control, the impact estimate of the policy changes is less likely to be affected by demographic changes. White enrollment in public schools has been declining over time.[12] Because white students have lower grade repetition rates than minority students on average, grade repetition rates could have been increasing over time. In the absence of district-

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[12] "From fall 2001 through fall 2011, the number of White students enrolled in prekindergarten through 12th grade in U.S. public schools decreased from 28.7 million to 25.6 million, and their share of public school enrollment decreased from 60 to 52 percent (The Condition of Education, NCES retrieved from https://nces.ed.gov/programs/coe/indicator_cge.asp on May 5, 2010)"

specific trend controls, it will be difficult to separate the impact of the demographic changes on the grade repetition rates from the policy impact. Third, unobservable trending factors that affect grade repetition rates might also be correlated with the control variables in equation (2). For example, school administrators may be more likely to use suspensions as a discipline tool when the proportion of minority students increases in a district. It would affect grade repetition rates, but such a tendency cannot be measured, and thus is impossible to be controlled for. Then, the impact estimate β will capture a spurious relationship between grade repetition rates and unobservable trending factors. A district-specific trend control would address the bias caused by unobservable trending factors (Wooldridge, 2003).

The key identifying assumption of the model is that there is no discontinuous change in unobserved variables that influence ninth grade repetition rates in a district, and the unobservable variables are not influenced by the changes in school desegregation plans.

In data analysis, I test the sensitivity of results to two choices made in equation (2). First, equation (2) includes demographic controls because of racial disparity in grade repetition rates. One concern related to the controls is that student demographic composition could have been affected by desegregation policy changes. Even though this is not the case in this study (results presented later), I estimate equation (2) with and without the controls. Second, I restrict data observations that are 10 or fewer years prior to or 10 or fewer years following the implementation of the desegregation policy change for data analysis. I also estimate the main model using observations that are 5 or fewer years prior to or 5 or fewer years following the implementation of the desegregation policy change. The lengthy observations are used unless otherwise stated.

2.6. Results

This section has three sub-sections. Section 2.6.1 presents primary results of ninth grade repetition rates. Section 2.6.2 presents the results by the subset of districts to explore the relation between school segregation and ninth grade repetition rates. Section 2.6.3 presents the results of additional tests.

Two samples are used to estimate the policy impacts. One sample is all the school districts, and another sample is the school districts that changed their desegregation policies. Panel A presents the results measured using the all districts, and Panel B presents the results measured using the districts that changed their desegregation policies (denoted as treated districts). Two districts that changed their policies are excluded from the analysis only using the treated districts due to data issues. One is Muscogee School District in Georgia that does not have any observations before the policy change. Another is Fresno Unified School District in California that changed the policy in 2012 thus only has one observation after the policy change. Thus, 48 districts are used in analysis that only uses the districts with desegregation policy change.

2.6.1. Primary Results

Table 2-3 presents estimated effects of desegregation policy changes on the ninth grade repetition rates. Policy effects are computed using the regression (2) which controls for district fixed-effects, district-specific time-trends, and court circuit-by-year fixed effects. Even numbered columns present the results estimated without demographic controls, and odd numbered columns present the results estimated with demographic controls.

The results presented in Table 2-3 suggest that the desegregation policy changes increase the ninth grade repetition rates. The estimated effects indicate that the changes in school desegregation plans increase the ninth grade repetition rates by 2.2 to 3.8 percentage points.

When up to 10 years of observations around the policy change year are used, the estimated effects measured using all districts (Panel A) are 9 to 26 percent larger than the effects measured using the policy change districts (Panel B). In contrast, when up to 5 years of observations are used, the estimated effects measured using all districts (Panel A) are 19 to 21 percent smaller than the effects measured using the policy change districts (Panel B). Despite these differences, the results using either all districts or only treated districts consistently show that the removal of school desegregation plans increases the ninth grade repetition rates. In general, the impact estimates measured using observations up to 5 year years are smaller than the impact estimates measured using observations up to 10 years. The estimated effects are not sensitive to the inclusion of demographic controls.

In addition, I estimate a regression model which includes an interaction term between the policy change indicator (D) and the time counter variable (T), which allows the changes in the district-specific trends after the desegregation policy changes.[13] Table 2-4 presents the results. Even numbered columns present the results estimated without demographic controls, and odd numbered columns present the results estimated with demographic controls. The results estimated with the inclusion of the trend shift interaction term also indicate that the changes in school desegregation plans increase the ninth grade repetition rates. The impact estimates with the trend shift interaction term are slightly larger than the main results presented in Table 2-3, and all the estimates statistically significant at the 5 or 10 percent level. When up to 5 years of observations are used, the impact estimates measuring with and without the interaction term are most different from each other. When up to 10 years of observations are used, the impact estimates measuring with and without the interaction term are similar to each other.

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[13] The equation estimated is: Ninth Grade Repetition Rate$_{ict}$ = a_1 D_{ict} + a_2 D_{ict} T_t + $Z_{ict}'\psi$ + θ_i + δ_i T_t + λ_{ct} + ε_{ict}

Depending on the analytic model and sample used, the impact estimates range from 0.023 to 0.041. The magnitude of impacts is 12 to 22 percent of the baseline mean of the ninth grade repetition rates and 13 to 23 percent of the baseline standard deviations of the repetition rates.

2.6.2. School Segregation and Ninth Grade Repetition Rates

In this section, I examine whether the impact on the ninth grade repetition rate is driven by the school districts where school segregation was substantially increased due to the changes in desegregation policies. I explore this possibility by estimating the impact on the ninth grade repetition rates across three subsets of districts which are divided by the impact of the desegregation policy change on school segregation. To do so, I measure the impact of the policy change on non-white to white school segregation by estimating equation (2) for each policy change district, without the district fixed effects and the court by year fixed effects. Dependent variables used are three different school segregation measures presented in 2.4.4. I denote each subset as districts in the 1st, 2nd, and 3rd tertile by the impact on school segregation.

Table 2-5 presents the estimated effects of desegregation policy changes on the ninth grade repetition rates for each subset of districts. Policy impacts on the ninth grade repetition rates are computed using equation (2) with up to 10 years of observations, and the districts that did not change desegregation policies are used as the control districts. The results presented in Table 2-5 suggest that, using any school desegregation measures, the impact on the ninth grade repetition rates is largest among the 3rd tertile districts that had the largest impact on school segregation. Among the school districts in the 1st tertile, there is no significant impact on the ninth grade repetition rates. Among the school districts in the 2nd tertile, the estimated effects indicate a 5 to 6 percentage point increase in the ninth grade repetition rates using the dissimilarity and exposure index. The estimated effects of the 2nd tertile districts using the

dissimilarity index and the exposure index are larger than the main estimated effect presented in Table 2-3. When using the segregation measure of the percent non-white students attending a school with 90 percent or more minorities, the impact estimates of the 2nd tertile districts are similar to the effect estimates of the 1st tertile districts and statistically insignificant. Among the 3rd tertile districts, the impact estimates on the ninth grade repetition rates indicate that desegregation policy changes increase the ninth grade repetition rates by 7 percentage points, which is almost twice as large as the main estimated effects. In short, the increase in the ninth grade repetition rates is largest in the districts where school segregation increased the most. The results presented in Table 2-5 suggest that the negative impact on the student outcome can be the result of the increase in racial school segregation.

2.6.3. Ruling out Alternative Explanations

Because the measurement of the ninth grade repetition rates used in this study can be influenced by several factors, this section examines each of the factors that may have affected by the desegregation policy changes to conclude that the measurement used in this study captures the ninth grade repetition rates. The main factors are student transfers from other districts, dropout rates, and student transfers from private schools.

First, I examine whether the desegregation policy changes affected student transfers from other districts. Because data on student transfers are not available, I estimate the policy impact on the log of total, white, and non-white student enrollment. If the desegregation policy changes affect student transfers, it is likely to affect student enrollment. Table 2-6 presents the results on student enrollment. The effects are estimated using equation (2) without demographic controls. I find no effect on both total enrollment and enrollment by race. The estimated effects are virtually zero and statistically insignificant. In addition, the results estimated for the three tertiles

by the impact on school segregation (not presented) indicate no effects on student enrollment. The results on total enrollment and enrollment by race presented in Table 2-6 indicate that student movements from other districts are not affected by the desegregation policy changes.

Second, I examine the eighth and ninth grade enrollment. This analysis is another way to examine student transfers from other districts. It can also test whether the desegregation policy changes increased the eighth and ninth grade dropouts. Because I compare the ninth grade enrollment in a particular year to the eighth grade enrollment in its previous year, the dropout of the eighth graders can affect the outcome measure if the eighth grade enrollment was measured before a large number of eighth graders dropped out. The policy change could have also increased the ninth grade dropouts. If the ninth grade enrollment was measured after a large number of ninth graders dropped out, the main findings of this paper would underestimate the impact on the ninth grade repetition rates. In fact, the pre-tenth grade dropout rates are not substantial due to compulsory school attendance rules that requires students under the certain age (ranging from 16 to 18 depending on the state) to enroll in and attend public school or some equivalent education program. According to Heckman and LaFontaine (2007), pre-tenth grade dropout rates in the U.S. are about 4 percent. Nonetheless, to address these concerns related to the eighth and ninth grade dropout rates, I estimate the impact on the natural log of the eighth and the ninth grade enrollment.

Table 2-7 presents the results of the policy impact on student enrollment by grade. The effects are estimated using equation (2) without demographic controls. I find no effect on the eighth and ninth grade enrollment. The estimated effects on the log of eighth grade enrollment are virtually zero and statistically insignificant, which suggests that dropout rates of the eighth graders are not affected by the desegregation policy changes. The results on the log of ninth

grade enrollment suggest that the enrollment increases by 1 or 2 percent which is expected if the share of the ninth graders who repeated the grade increases by the policy change, but the estimates are statistically insignificant. It is still impossible to rule out the potential impact of the policy change on the dropout rates of the ninth graders, because the potential policy impact on the increase in the ninth grade dropout rates (a decrease in the ninth grade enrollment) could have been offset by the potential policy impact on the increase in the net transfers of the ninth graders (an increase in the ninth grade enrollment). However, because of compulsory school attendance requirements, the main findings on the ninth grade repetition rates are not likely to be affected by the changes in the ninth grade dropout rates.

Third, I examine student transfers from private schools. The results of the log of the total enrollment and enrollment by race and grade presented in Tables 2-6 and 2-7 address some of the concerns about the potential changes in the net transfers, but it may not fully capture student transfers from private schools. Thus, I additionally examine the impact of the policy change on the eighth and the ninth grade enrollment of private schools. The data on private school enrollment come from the Private School Survey of the CCD. The survey provides biannual data on private school enrollment by grade since 1989 and enrollment by race since 1993. Because private schools are not in the public school district system, I measure the policy impact at the county level. That is, I measure the impact of the desegregation policy changes of a district on the changes in enrollment of private schools that are located in the same county of the district. Because only biannual data are available, for this analysis, I use observations that are 10 or fewer years prior to or 10 or fewer years following the implementation of the desegregation policy change. For the enrollment analysis by race, I restrict the sample to the districts that changed their desegregation policies after 1997 to have sufficient observations to control for the district-

specific trends. Two counties contain multiple districts of the sample. Los Angeles County in California contains three districts (Los Angeles, Long Beach, and Pasadena), and New Castle County in Delaware contains four districts (Brandywine, Christina, Colonial, and Red Clay). In New Castle County, all the four school districts changed their assignment policies, so the earliest year of the policy change was used for analysis.

Table 2-8 presents the results of the private school enrollment analysis. None of the coefficients on the log of total enrollment, white enrollment, minority enrollment, the eighth grade enrollment, and the ninth grade enrollment of private schools are statistically significant. The coefficients on the minority enrollment are 0.06 or 0.08 depending on the analytic sample used. These coefficients suggest that the desegregation policy changes increased minority enrollment of private schools by 6 to 8 percentage points, but the results are statistically insignificant. The estimate effects on the log of the ninth grade enrollment are small (0.02) and statistically insignificant. Based on the results presented in Table 2-8, there is no evidence that the desegregation policy change caused student movements between public and private schools.

In addition to analyzing the impact on private school enrollment, I examine whether the impact on the ninth grade repetition rates is larger in the districts with a large number of public schools. It is possible that, in the districts with school desegregation plans, families may have selected into the neighborhoods where they have better chances of sending their children to the public schools that they prefer. This potential sorting into preferred neighborhoods should be more substantial in districts with a large number of public schools than districts with a small number of public schools. In the districts with a small number of public schools, families might have to send their children to private school because such neighborhood selection is limited. Thus, if the main findings of this study are driven by the net transfers from private schools, the

impact of the desegregation policy changes would be larger in small districts. I explore this possibility by estimating the impact on the ninth grade repetition rates across three subsets of districts which are divided by the number of public schools. I denote each subset as districts in the 1st, 2nd, and 3rd tertile by the number of schools.

Table 2-9 presents the estimated effects of desegregation policy changes on the ninth grade repetition rates for each subset of districts. Policy effects on the ninth grade repetition rates are computed using equation (2) with up to 10 years of observations, and the districts that did not change desegregation policies are used as the control districts. The results presented in Table 2-9 suggest that the magnitude of the impact on the ninth grade repetition rates is similar across the three subsets of the districts. The impact estimates indicate that desegregation policy changes increase the ninth grade repetition rates by 4 to 5 percentage points in all subsets, which is similar to the size of the main estimated effects. Based on the results presented in Table 2-9, I conclude that the main results of this paper are not driven by the net transfers from private schools.

Finally, I test whether other events have affected grade repetition rates. The accountability policy change in the early 2000s and the *Gun-Free School Act* (GFSA) of 1994 apply to all public schools across the nation, but there can be regional variations in responding to the policies. In addition, differential responses to the 1999 Columbine school shooting across districts could have affected grade repetition rates independently from the changes in school desegregation policies. In principal, school desegregation plans were removed at several different years in districts, so the interrupted time series design with staggered replications (introduction of a policy change at the different points of time) could address the effects of most confounding factors. Other events can only threaten causal inferences if they occurred at the

same time of the removal of desegregation plans. In addition, because the above events would affect all the school districts, estimating the effects using several control districts can address potential biases caused by the events. Court circuit-by-year fixed effects also control for differential responses to the events across different geographic areas because court circuits have smaller geographic boundaries (11 court circuits in the U.S.). Nonetheless, it is possible that the estimated effects presented in Table 2-3 can be overestimated due to the effect of other major events, because the sample of this study includes the districts that modified their desegregation plans in the years around the events.

I examine potential biases caused by the events by re-estimating the policy impact on the ninth grade repetition rates after dropping the school districts that removed desegregation plans around 1994 and 1999. The GFSA was enacted in October, 1994 and requested states to establish a relevant law by October 1995, so the earliest school year that was affected by the GFSA was 1995. The Columbine school shooting occurred in April, 1999, so the earliest school year that was affected by the event was 1999. The left-hand side columns under the subtitle of "Without 1995 & 1999" of Table 2-10 present the estimated effects measured without seven districts that modified desegregation policies in either 1995 or 1999, and the right-hand side columns under the subtitle of "Without 1995, 1996, 1999, & 2000" present the estimated effects measured without 16 districts that modified desegregation policies in either 1995, 1996, 1999, or 2000. With the exclusion of a number of districts that can be most susceptible to other external events, I still find the effect of the desegregation policy changes on the ninth grade repetition rates. The estimated effects measured without the seven districts that changed their policies in either 1995 or 1999 are larger than the main estimated effects, but these results are not comparable to the results presented in Table 2-3 because different samples are used in analysis.

With the exclusion of additional districts that changed their policy in either 1996 or 2000 (one year after the events), impact estimates are smaller in general. The results presented in Table 2-10 suggest that the external events are not the main reason that the ninth grade repetition rates were increased.

2.7. Conclusion

Over the last two decades, a large number of school districts were released from court desegregation orders and replaced their school desegregation policies with alternative student assignment policies. Scholars have found that the release from school desegregation orders increased school racial segregation (Clotfelter et al., 2006; Lutz, 2011; Oh, 2015; Orfield & Eaton, 1996; Reardon et al., 2012). Evidence also suggests that these changes negatively affect high school test scores, high school graduation, four-year college attendance, and crime rates (Billings et al., 2014; Lutz, 2011).

This paper examines whether these desegregation policy changes in the 1990s and 2000s affected the ninth grade repetition rate which is closely related to high school dropout and completion rates (Hauser et al, 2004; Jimerson, 1999; Jimerson et al., 2002; Neild et al., 2008). Because the year that a district changed its school desegregation policy is often substantially different from the year that the district was released from court desegregation orders, this paper uses the year of actual policy changes of approximately 100 school districts. I find that the changes in school desegregation policies caused a statistically significant increase in the ninth grade repetition rates of about 0.2 standard deviations. I also find that the increase in the ninth grade repetition rate is greatest in the districts where the policy change increased school segregation the most.

The findings of this study have several policy implications. First, when school districts were released from court desegregation orders, choosing student assignment policies that can maintain racially integrated schools will help to minimize potential negative impacts of the policy changes on student outcomes. Scholars have found that replacing race with socioeconomic factors (e.g., family income) in student assignment policies is an effective way to maintain school integration (Chaplin, 2002; Frankenberg, 2011; Kahlenberg, 2001; Holley-Walker, 2010; Reardon et al., 2006). Certain controlled school choice programs can be also effective with free transportation provisions. Second, when school districts modify their desegregation policies, schools with more minority and/or economically disadvantaged students may need additional educational resources. There are still substantial educational disparities along racial lines. When many schools become racially isolated after removing school desegregation plans, educational outcomes of the students who attend a racially isolated school will be negatively affected without substantial district efforts to help the students.

References

Alexander, K. L., Entwisle, D. R., & Dauber, S. L. (2003). *On the Success of Failure: A Reassessment of the Effects of Retention in the Primary School Grades*. Cambridge University Press.

Anderson, G. E., Jimerson, S. R., & Whipple, A. D. (2005). Student ratings of stressful experiences at home and school: Loss of a parent and grade retention as superlative stressors. *Journal of Applied School Psychology*, *21*(1), 1-20.

Ashenfelter, O., Collins, W. J., & Yoon, A. (2006). Evaluating the role of Brown v. Board of Education in school equalization, desegregation, and the income of African Americans. *American Law and Economics Review*, *8*(2), 213-248.

Aud, S., Fox, M. A., & KewalRamani, A. (2010). Status and Trends in the Education of Racial and Ethnic Groups. NCES 2010015. *National Center for Education Statistics*.

Aud, S., KewalRamani, A., & Frohlich, L. (2011). America's Youth: Transitions to Adulthood. NCES 2012026. *National Center for Education Statistics.*

Autor, D. H., Katz, L. F., & Kearney, M. S. (2008). Trends in U.S. wage inequality: Revising the revisionists. *The Review of Economics and Statistics, 90(2), 300-323.*

Bifulco, R., Fletcher, J. M., & Ross, S. L. (2011). The effect of classmate characteristics on post-secondary outcomes: Evidence from the Add Health. *American Economic Journal: Economic Policy*, 25-53.

Bifulco, R., Fletcher, J. M., Oh, S. J., & Ross, S. L. (2014). Do high school peers have persistent effects on college attainment and other life outcomes?. *Labour Economics*, *29*, 83-90.

Billings, S. B., Deming, D., & Rockoff, J. (2014). School segregation, educational attainment, and crime: Evidence from the end of busing in Charlotte-Mecklenburg. *The Quarterly Journal of Economics*, 435-476.

Chaplin, D. (2002). Estimating the impact of economic integration of schools on racial integration. In The Century Foundation Task Force on the Common School (Eds.), *Divided We Fail: Coming Together through Public School Choice* (pp. 87–113). New York: The Century Foundation Press.

Clotfelter, C. T. (2004). *After Brown: The Rise and Retreat of School Desegregation*. Princeton, NJ: Princeton University Press.

Clotfelter, C. T., Vigdor, J. L., & Ladd H. F. (2006). Federal oversight, local control, and the specter of "Resegregation" in Southern schools. *American Law and Economics Review, 8*(2), 347-389.

Cobb-Clark, D. A., Kassenboehmer, S. C., Le, T., McVicar, D., & Zhang, R. (2015). Is there an educational penalty for being suspended from school?. *Education Economics*, *23*(4), 376-395.

Duncombe, W., & Yinger, J. M. (2008). Measurement of cost differentials. In H. F. Ladd & E. Fiske (Eds.) *Handbook of Research in Education Finance and Policy* (pp. 203-221). Laurence Erlbaum Associates.

Guryan, J. (2004). Desegregation and black dropout rates. *The American Economic Review*, *94*(4), 919-943.

Frankenberg, E. (2011). Integration after *Parents Involved*: What does research suggest about available options? In E. Frankenberg, & E. DeBray (Eds.), *Integrating schools in a changing society: New policies and legal options for a multiracial generation* (pp. 53-74)*.* Chapel Hill: University of North Carolina Press.

Hauser, R. M., Frederick, C. B., & Andrew, M. (2007). Grade retention in the age of accountability. In A. Gamoran (Ed.), *No Child Left Behind and the Poverty Gap* (pp. 120–153). Washington, DC: Brookings Institution.

Hauser, R. M., Pager, D. I., & Simmons, S. J. (2004). Race-Ethnicity, Social Background, and Grade Retention. In Walberg, H. J., Reynolds, A. J. & Wang, M. C. (Eds.)*, Can Unlike Students Learn Together? Grade Retention, Tracking, and Grouping*. Greenwich (pp. 97-114). Connecticut: Information Age Publishing.

Heckman, J. J., & LaFontaine, P. A. (2007). *The American high school graduation rate: Trends and levels.* IZA Discussion Paper Series (IZA DP No. 3216).

Heckman, J. J., & LaFontaine, P. A. (2010). The American high school graduation rate: Trends and levels. *The Review of Economics and Statistics*, *92*(2), 244-262.

Holley-Walker, D. (2010). After unitary status: Examining voluntary integration strategies for Southern school districts. *North Carolina Law Review*, *88*, 877.

Jimerson, S. R. (1999). On the failure of failure: Examining the association between early grade retention and education and employment outcomes during late adolescence. *Journal of School Psychology*, 37, 243-272.

Jimerson, S. R. (2001). Meta-analysis of grade retention research: Implications for practice in the 21st century. *School psychology review*, *30*(3), 420-437.

Jimerson, S. R., Anderson, G. E., & Whipple, A. D. (2002). Winning the battle and losing the war: Examining the relation between grade retention and dropping out of high school. *Psychology in the Schools,* 39, 441-457.

Jimerson, S. R., Woehr, S. M., Kaufman, A. M., & Anderson, G. E. (2003). Grade retention and promotion: Information and strategies for educators. *National Association of School Psychologists, S3,* 61-64.

Johnson, R. C. (2011). *Long-run impacts of school desegregation & school quality on adult attainments* (No. w16664). National Bureau of Economic Research.

Kahlenberg, R. D. (2001). *All Together Now: The Case for Economic Integration of the Public Schools*. Washington D.C.: Brookings Institution Press.

Kena, G., Aud, S., Johnson, F., Wang, X., Zhang, J., Rathbun, A., Wilkinson-Flicker, S., & Kristapovich, P. (2014). *The condition of education 2014* (NCES 2014-083.) National Center for Education Statistics.

Kinsler, J. (2013). School discipline: A source or salve for the racial achievement gap?. *International Economic Review*, *54*(1), 355-383.

Lavy, V., Paserman, M. D., & Schlosser, A. (2012). Inside the black box of ability peer effects: Evidence from variation in the proportion of low achievers in the classroom. *The Economic Journal*, *122*(559), 208–237.

Losen, D., & Gillespie, J. (2012). *Opportunities suspended: The disparate impact of disciplinary exclusion from school.* Los Angeles, CA: The UCLA Civil Rights Project/Proyecto Derechos Civiles.

Losen, D. J., & Skiba, R. J. (2014). *Suspended education: Urban middle schools in crisis.* Los Angeles, CA: The UCLA Civil Rights Project/Proyecto Derechos Civiles.

Lutz, B. (2011). The end of court-ordered desegregation. *American Economic Journal: Economic Policy*, *3*(2), 130–168.

Neild, R. C., Stoner-Eby, S., & Furstenberg, F. (2008). Connecting entrance and departure the transition to ninth grade and high school dropout. *Education and Urban Society*, *40*(5), 543-569.

Neiman, S., & Hill, M. R. (2011). *Crime, violence, discipline, and safety in US public schools: Findings from the school survey on crime and safety, 2009-2010*. National Center for Education Statistics, Institute of Education Sciences, US Department of Education.

Oh, S. J. (2015). *The end of school desegregation plans: Policy changes and school segregation.* Working Paper (Unpublished)

Oreopoulos, P. (2007). Do dropouts drop out too soon? Wealth, health and happiness from compulsory schooling. *Journal of Public Economics*, *91*(11), 2213-2229.

Orfield, G. & Eaton, E. (1996). *Dismantling Desegregation: The Quiet Reversal of Brown v. Board of Education*. NY: The New Press.

Reardon, S. F., Grewal, E. T., Kalogrides, D., & Greenberg, E. (2012). Brown fades: The end of court-ordered school desegregation and the resegregation of American public schools. *Journal of Policy Management and Analysis*, *31*(4), 876-904.

Reardon, S. F., Yun, J. T., & Kurlaender, M. (2006). Implications of income-based school assignment policies for racial school segregation. *Educational Evaluation and Policy Analysis*, *28*(1), 49-75.

Reber, S. J. (2005). Court-ordered desegregation successes and failures integrating American schools since Brown versus Board of education. *Journal of Human Resources*, *40*(3), 559-590.

Rouse, C. E. (2007). Quantifying the costs of inadequate education: Consequences for the labor market. In C. R. Belfield & H. M. Levin (Eds.), *The Price We Pay: Economic and Social Consequences of Inadequate Education* (pp. 99-124). Washington D.C.: Brookings Institution Press.

Shaddish, W. R., Cook, T. D., & Campbell, D. T. (2001). *Experimental and Quasi-experimental Designs for Generalized Causal Inference.* Boston, MA: Houghton Mifflin Company.

Walker, B. L. T. (2014). Suspended animation: A legal perspective of school discipline and African American learners in the shadows of Brown. *The Journal of Negro Education*, *83*(3), 338-351.

Warren, J. R., Hoffman, E., & Andrew, M. (2014). Patterns and Trends in Grade Retention Rates in the United States, 1995–2010. *Educational Researcher*, *43*(9), 433-443.

Warren J. R., & Saliba J. (2012). First- through eighth-grade retention rates for all 50 states: A new method and initial results. *Educational Researcher, 41*, 320–329.

Weiner, D. A., Lutz, B. F., & Ludwig J. (2009). The effects of school desegregation on crime (Working Paper No. 15380). National Bureau of Economic Research.

Welch, F., & Light, A. L. (1987). *New evidence on school desegregation*. U.S. Commission on Civil Rights Clearinghouse. Washington D.C. Publication 92.

Wooldridge, J. M. (2003). Introductory Econometric: A Modern Approach (2E). Cincinnati, OH: South-Western Publishing.

Table 2-1. List of Sample Districts and Major Policy Changes since 1990

St.	County Name	School District Name	Desegregation	Unitary	Policy Change
AL	Jefferson	Jefferson County	1971	-	-
AL	Mobile[c]	Mobile County	1971	1997	1999
AR	Pulaski	Little Rock	1971	2007	1998
CA	Fresno	Fresno Unified	1978	-	2012
CA	Los Angeles	Long Beach Unified	1980	-	-
CA	Los Angeles	Los Angeles Unified	1978	-	-
CA	Los Angeles	Pasadena Unified	1970	1979	-
CA	Contra Costa	West Contra Costa (Richmond)	1969	-	-
CA	Sacramento	Sacramento City Unified	1976	-	-
CA	San Bernardino	San Bernardino City Unified	1978	-	-
CA	San Diego	San Diego Unified	1977	1998	1996
CA	San Francisco[c]	San Francisco Unified	1971	2005	1999
CA	Solano	Vallejo City Unified	1975	-	-
CO	Denver[c]	Denver	1974	1995	1996
CT	Fairfield	Stamford	1970	-	-
DE	New Castle	Brandywine	1978	1996	2002
DE	New Castle	Christina	1978	1996	2002
DE	New Castle	Colonial	1978	1996	2001
DE	New Castle	Red Clay Consolidated	1978	1996	1995
FL	Brevard[c]	Brevard	1969	1978	-
FL	Broward[c]	Broward County	1970	1996	1995
FL	Dade[c]	Miami-Dade County	1970	2001	-
FL	Duval[c]	Duval County	1971	2001	1991
FL	Hillsborough[c]	Hillsborough County	1971	2001	2004
FL	Lee[c]	Lee County	1969	1999	1998
FL	Orange[c]	Orange County	1972	2010	1996
FL	Palm Beach[c]	Palm Beach County	1970	1979	2000
FL	Pinellas[c]	Pinellas County	1970	2000	2003
FL	Polk[c]	Polk County	1969	2000	1992
FL	Volusia[c]	Volusia County	1969	1970	-
GA	Dougherty[c]	Dougherty County	1980	-	-
GA	Muscogee[c]	Muscogee County	1971	1997	1993
IL	Cook	City of Chicago	1982	2009	-
IL	Winnebago	Rockford	1973	2001	-
IN	Allen	Fort Wayne	1971	-	-
IN	Marion	Indianapolis	1973	1998	1999
IN	St. Joseph	South Bend	1981	-	-
KS	Wyandotte	Kansas City	1977	1997	1997
KS	Sedgwick	Wichita	1971	-	2008
KY	Fayette[c]	Fayette County	1972	-	-
KY	Jefferson	Jefferson County (Louisville)	1975	2000	1991
LA	Caddo[c]	Caddo Parish	1969	-	2006
LA	Calcasieu[c]	Calcasieu Parish	1969	-	-
LA	East Baton Rouge[c]	East Baton Rouge Parish	1970	2003	1996
LA	Jefferson[c]	Jefferson Parish	1971	-	2009
LA	Rapides[c]	Rapides Parish	1969	2006	2006
LA	Terrebonne[c]	Terrebonne Parish	1969	-	-
MD	Baltimore City[c]	Baltimore City	1974	-	-
MD	Harford[c]	Harford County	1965	-	-

MD	Prince George's[c]	Prince George's County	1973	2002	2001
MA	Suffolk	Boston	1974	1987	2000
MA	Bristol	New Bedford	1976	-	-
MA	Hampden	Springfield	1974	-	2005
MI	Kent	Grand Rapids	1968	-	-
MI	Ingham	Lansing	1972	-	-
MN	Hennepin	Minneapolis	1974	-	2001
MO	Jackson	Kansas City	1977	2003	1999
MO	St. Louis City[c]	St. Louis City	1980	1999	-
NE	Douglas	Omaha	1976	1984	1999
NV	Clark[c]	Clark County	1972	-	-
NJ	Hudson	Jersey City	1976	-	-
NY	Erie	Buffalo City	1976	1995	2003
NY	Monroe	Rochester City	1970	-	2004
NY	Westchester	Yonkers City	1986	*2001(02)*	-
NC	Cumberland[c]	Cumberland County	1969	1978	-
NC	Gaston[c]	Gaston County	1970	*n.a.*	-
NC	Mecklenburg[c]	Charlotte-Mecklenburg	1970	2002	2002
NC	New Hanover[c]	New Hanover County	1969	1983	2007
OH	Summit	Akron City	1977	-	-
OH	Hamilton	Cincinnati City	1973	1991	-
OH	Cuyahoga	Cleveland Municipal	1979	1998	1993
OH	Franklin	Columbus City	1979	1988	1996
OH	Montgomery	Dayton City	1976	2002	2002
OH	Lorain	Lorain City	1985	1994	-
OH	Lucas	Toledo City	1980	-	-
OK	Comanche	Lawton	1973	-	-
OK	Oklahoma	Oklahoma City	1972	1991	-
OK	Tulsa	Tulsa	1971	1983	-
OR	Multnomah	Portland	1974	-	-
PA	Philadelphia[c]	Philadelphia City	1978	2009	-
PA	Allegheny	Pittsburgh	1980	-	1996
SC	Charleston[c]	Charleston County	1970	1994	-
SC	Greenville[c]	Greenville County	1970	1985	2002
SC	Richland	Richland County 01	1970	*n.a.*	-
TN	Davidson[c]	Metropolitan Nashville	1971	1998	2008
TX	Travis	Austin Independent	1980	1983	2000
TX	Tarrant	Dallas Independent	1971	2003	1994
TX	Tarrant	Fort Worth Independent	1973	1990	-
TX	Harris	Houston Independent	1971	1983	1998
TX	Lubbock	Lubbock Independent	1978	1991	-
TX	McLennan	Waco Independent	1973	1989	-
VA	Arlington[c]	Arlington County	1971	-	1998
VA	Norfolk City[c]	Norfolk City	1970	1985	2001
VA	Pittsylvania[c]	Pittsylvania County	1969	-	-
VA	Roanoke City[c]	Roanoke City	1970	-	-
WA	King	Seattle	1978	*n.a.*	1997
WA	Pierce	Tacoma	1968	-	-
WI	Milwaukee	Milwaukee	1976	-	1998

[c] indicates counties that are coterminous with a school district
New Castle School District, DE, was subdivided into four school districts listed above.

Table 2-2. Baseline Statistics of Sample Districts

Variable	Group			T-statistic
	All	Change	No Change	
9th grade repetition rates	0.19 (0.18)	0.20 (0.16)	0.18 (0.20)	0.57
Non-white/white dissimilarity index	0.35 (0.15)	0.32 (0.12)	0.38 (0.16)	-2.12**
Non-white/white exposure index	0.43 (0.19)	0.43 (0.17)	0.43 (0.21)	-0.02
% non-white students in 90-100% non-white school	0.16 (0.21)	0.13 (0.16)	0.19 (0.25)	-1.55
Total student enrollment	59,957 (76,668)	58,658 (38,732)	61,311 (102,771)	-0.17
% white students	0.51 (0.20)	0.50 (0.17)	0.52 (0.22)	-0.40
% black students	0.37 (0.17)	0.39 (0.16)	0.35 (0.18)	1.28
% Hispanic students	0.12 (0.02)	0.11 (0.02)	0.13 (0.02)	0.93
Total number of districts	98	50	48	

Descriptive statistics (mean and standard deviation in parentheses) are measured using the Public Elementary/Secondary School Universe Survey.
Means are computed using the value in 1990 or the earliest year appeared in data.
T-statistics is based on two independent samples t-test comparing the means of a normally distributed variable for both change and no change groups.

Table 2-3. Estimated Effects on 9th Grade Repetition Rates

	Ninth grade repetition rates			
Observations used	±10 yrs		±5 yrs	
Panel A: All districts	(1)	(2)	(3)	(4)
Policy change effect	0.036**	0.038**	0.022	0.023*
	(0.016)	(0.016)	(0.014)	(0.014)
Demographic controls	X	O	X	O
Observations	1,995	1,995	1,618	1,618
Number of school districts	98	98	98	98
Panel B: Treated districts	(9)	(10)	(11)	(12)
Policy change effect	0.033*	0.030	0.027*	0.029*
	(0.018)	(0.018)	(0.015)	(0.015)
Demographic controls	X	O	X	O
Observations	834	834	467	467
Number of school districts	48	48	48	48

Notes: "X" and "O" indicate the exclusion and the inclusion of demographic controls, respectively. Clustered standard errors are in parentheses. * indicates statistically significant at the 0.10; ** indicates statistically significant at 0.05; *** indicates statistically significant at 0.01.

Table 2-4. Estimated Effects on 9th Grade Repetition Rates – Alternative Specification

Observations used	With the trend shift interaction term			
	±10 yrs		±5 yrs	
Panel A: All districts	(1)	(2)	(3)	(4)
Policy change effect	0.035**	0.038**	0.026*	0.034*
	(0.016)	(0.016)	(0.014)	(0.017)
Demographic controls	X	O	X	O
Observations	1,995	1,995	1,618	1,618
Number of school districts	98	98	98	98
Panel B: Treated districts	(5)	(6)	(7)	(8)
Policy change effect	0.041**	0.037*	0.033*	0.034*
	(0.020)	(0.019)	(0.017)	(0.017)
Demographic controls	X	O	X	O
Observations	834	834	467	467
Number of school districts	48	48	48	48

Notes: "X" and "O" indicate the exclusion and the inclusion of demographic controls, respectively. Clustered standard errors are in parentheses. * indicates statistically significant at the 0.10; ** indicates statistically significant at 0.05; *** indicates statistically significant at 0.01.

Table 2-5. Estimated Effects on 9th Grade Repetition Rates by School Segregation Impact

	1st Tertile		2nd Tertile		3rd Tertile	
Impact measured using the dissimilarity index						
Policy change effect	-0.000	-0.006	0.047*	0.050*	0.069**	0.071**
	(0.026)	(0.026)	(0.027)	(0.027)	(0.032)	(0.032)
Demographic controls	X	O	X	O	X	O
Observations	1,409	1,409	1,452	1,452	1,456	1,456
Number of school districts	66	66	66	66	66	66
Impact measured using the exposure index						
Policy change effect	0.003	-0.004	0.054*	0.057**	0.069**	0.071**
	(0.024)	(0.024)	(0.029)	(0.028)	(0.031)	(0.031)
Demographic controls	X	O	X	O	X	O
Observations	1,420	1,420	1,445	1,445	1,452	1,452
Number of school districts	66	66	66	66	66	66
Impact measured using percent non-white students in non-white-majority school						
Policy change effect	0.023	0.025	0.025	0.022	0.073**	0.076**
	(0.028)	(0.028)	(0.029)	(0.029)	(0.029)	(0.030)
Demographic controls	X	O	X	O	X	O
Observations	1,440	1,440	1,431	1,431	1,446	1,446
Number of school districts	66	66	66	66	66	66

Notes: The smaller the tertile, the smaller the impact on school segregation. "X" and "O" indicate the exclusion and the inclusion of demographic controls, respectively. Clustered standard errors are in parentheses. * indicates statistically significant at the 0.10; ** indicates statistically significant at 0.05; *** indicates statistically significant at 0.01.

Table 2-6. Estimated Effects on Public School Enrollment by Race

	Log of total enrollment		Log of white enrollment		Log of minority enrollment	
Observations used	±10 yrs	±5 yrs	±10 yrs	±5 yrs	±10 yrs	±5 yrs
Panel A: All districts	(1)	(2)	(3)	(4)	(5)	(6)
Policy change effect	-0.008	-0.005	-0.012	-0.000	-0.009	-0.007
	(0.007)	(0.003)	(0.009)	(0.005)	(0.009)	(0.005)
Observations	2,016	1,633	2,016	1,633	2,016	1,633
Number of school districts	98	98	98	98	98	98
Panel B: Treated districts	(7)	(8)	(9)	(10)	(11)	(12)
Policy change effect	-0.001	-0.004	-0.002	-0.001	-0.002	-0.003
	(0.007)	(0.004)	(0.009)	(0.006)	(0.011)	(0.007)
Observations	842	469	842	469	842	469
Number of school districts	48	48	48	48	48	48

Clustered standard errors are in parentheses.

Table 2-7. Estimated Effects on Public School Enrollment by Grade

	Log of 8th grade enrollment		Log of 9th grade enrollment	
Observations used	±10 yrs	±5 yrs	±10 yrs	±5 yrs
Panel A: All districts	(1)	(2)	(3)	(4)
Policy change effect	-0.007	0.004	0.016	0.009
	(0.010)	(0.008)	(0.015)	(0.011)
Observations	2,016	1,633	2,016	1,633
Number of school districts	98	98	98	98
Panel B: Treated districts	(5)	(6)	(7)	(8)
Policy change effect	-0.009	-0.001	0.010	0.007
	(0.010)	(0.009)	(0.018)	(0.013)
Observations	842	469	842	469
Number of school districts	48	48	48	48

Clustered standard errors are in parentheses.

Table 2-8. Estimated Effects on Private School Enrollment

	Log of total enrollment	Log of white enrollment	Log of min. enrollment	Log of 8th gr. enrollment	Log of 9th gr. enrollment
Panel A: All districts	(1)	(2)	(3)	(4)	(5)
Policy change effect	0.011	0.008	0.058	0.004	0.019
	(0.025)	(0.039)	(0.053)	(0.032)	(0.043)
Observations	920	756	756	919	917
Number of school districts	93	80	80	93	93
Panel B: Treated districts	(6)	(7)	(8)	(9)	(10)
Policy change effect	0.011	0.015	0.075	-0.012	0.020
	(0.036)	(0.053)	(0.086)	(0.039)	(0.067)
Observations	388	300	300	388	387
Number of school districts	45	32	32	45	45

Clustered standard errors are in parentheses. Up to 10 years of observations are used due to the lack of annual data. For the analysis of the log of white and minority enrollment, school districts that changed their desegregation plans before 1997 were not used because the enrollment by race is only available from 1993

Table 2-9. Estimated Effects on 9th Grade Repetition Rates by the Number of Schools

	1st Tertile	2nd Tertile	3rd Tertile
Policy change effect	0.040	0.050*	0.043
	(0.025)	(0.028)	(0.028)
Observations	1,453	1,431	1,433
Number of school districts	66	66	66

Notes: The smaller the tertile, the smaller the impact on school segregation.
Clustered standard errors are in parentheses. * indicates statistically significant at the 0.10; ** indicates statistically significant at 0.05; *** indicates statistically significant at 0.01.

Table 2-10. Estimated Effects on 9th Grade Repetition Rates – Tests of Bias by Other Events

	Without 1995 & 1999				Without 1995, 1996, 1999 & 2000			
Observations used	±10 yrs		±5 yrs		±10 yrs		±5 yrs	
Panel A: All districts	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Policy change effect	0.046***	0.047***	0.028*	0.030*	0.030*	0.032*	0.016	0.017
	(0.016)	(0.016)	(0.015)	(0.015)	(0.017)	(0.017)	(0.016)	(0.016)
Demographic controls	X	O	X	O	X	O	X	O
Observations	1,867	1,867	1,548	1,548	1,706	1,706	1,458	1,458
Number of school districts	91	91	91	91	82	82	82	82
Panel B: Treated districts	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Policy change effect	0.050**	0.051***	0.041**	0.043**	0.032	0.035*	0.048*	0.048
	(0.019)	(0.015)	(0.020)	(0.021)	(0.022)	(0.019)	(0.028)	(0.029)
Demographic controls	X	O	X	O	X	O	X	O
Observations	706	706	397	397	545	545	307	307
Number of school districts	41	41	41	41	32	32	32	32

Clustered standard errors are in parentheses. * indicates statistically significant at the 0.10; ** indicates statistically significant at 0.05; *** indicates statistically significant at 0.01.

Chapter 3. Effects of school choice on student sorting by ability: Evidence from Seoul, Korea

3.1. Introduction

      A large number of school districts in the U.S. have expanded school choice options. Despite the potential benefits brought by school choice, evidence suggests that school choice segregates the student body by student racial and family economic background (Bifulco & Ladd, 2007; Bifulco, Ladd, & Ross, 2009; Carnoy, 2000; Epple & Romano, 1998; Ladd & Fiske, 2001; Levin, 1998). Most of the studies focus on the effect of school choice programs on school segregation in the U.S., but a couple of studies examine school choice programs outside of the U.S. For example, Ladd and Fiske (2001) examine school choice programs in New Zealand, and Hsieh and Urquiola (2006) examine private school vouchers in Chile. Effects of school choice on school segregation in Asian countries are largely unknown. This present study focuses on the newly implemented school choice policy in Seoul, Korea (the Republic of Korea) and examines whether the school choice policy in Seoul increases school segregation by student performance. In addition, it examines school factors that families value in selecting schools.

      In 2010, the Seoul Metropolitan Office of Education in Korea drastically changed its student assignment policy from a random student assignment based on neighborhood attendance zones to a school choice policy. Since 2010, the Seoul High School Choice Policy has been assigning entering high school students to any school of the students' choice based on a lottery.[1] Prior to the policy change, all students in Seoul were randomly assigned to a school in their attendance zone. The transition to the school choice policy occurred without any phase-in or trial period, and the details of the school choice program were unknown until August 2009. The policy instantly affected all students in Seoul who progressed to high school in March 2010

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[1] The first grade of high school in South Korea is equivalent to the 10th grade in the U.S.

(School year in Korea starts in March). Exploiting the sudden change in the student assignment policy in Seoul as a natural experiment, I examine the effect of the school choice policy in Seoul on student sorting. Specifically, this paper focuses on student sorting by ability because one of the main critiques of school choice is that high performing schools cream-skim educationally advantaged students when school choice is introduced.

In addition to examining the policy effect on school segregation, this paper also examines which school factors are valued in school selection. The implementation of the Seoul High School Choice Policy provides unique opportunities to examine the effect of school factors on school selection. First, because all the students must choose schools, school choice of all students can be observed. Thus, the school selection results in Seoul are not influenced due to the different characteristics between participants and non-participants of school choice.[2] Second, many observable school characteristics are very similar in Seoul, so it is possible to examine the effects of a few school factors that have enough variation independently from the similar factors. For example, schools in Seoul are nearly identical in terms of teacher characteristics, curriculum, and class size which are considered to affect school selection. Student composition was also identical until 2009. Due to unobservable school characteristics (e.g., school administration), however, the average school performance of each school in Seoul is substantially different despite the nearly identical initial performance of assigned students and homogenous school factors. Using the variation in the average school performance and school popularity in the first year of school choice, this paper explores whether school performance is an important determinant of school choice.

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[2] It is well known that higher performing students' families are more active in school choice than lower performing students' families because higher performing students' families are better at getting information about school quality, navigating school choice options, and providing transportation to school (See Levin, 1999).

The main identification strategy for school segregation analysis is a pretest-posttest design. Specifically, it compares school segregation prior to and following the implementation of the high school choice policy in Seoul. Because students were equally distributed across schools in every attendance zone prior to the policy change, the level of school segregation in 2009 is not driven by any school- or student-related characteristics. For the school preference analysis, I analyze the association between school characteristics and school popularity.

I find that the Seoul School Choice Policy in 2010 caused a statistically significant increase in school ability segregation by 0.04 which is equal to 33 percent of the dissimilarity index sample mean and equal to 200 percent of the 2009 cross-sectional standard deviation of the index. Because schools in Seoul were very integrated prior to the implementation of school choice, the impact of school choice is very large in terms of the standard deviation increase. In addition, the effect gets larger over time. I also find that students prefer schools with high average performance levels of graduates.

Seoul is heavily segregated by income: Families living in the South of the Han River have income twice as high as families living in the North of the Han River. Due to the segregated neighborhoods in Seoul, policy makers in Seoul tried to integrate schools to mitigate the geographical segregation of residents. The Seoul High School Choice Policy was introduced to further integrate schools by allowing students to attend any school in Seoul regardless of their residential location. However, despite the original political intention, schools became more segregated after the implementation of school choice.

The paper proceeds as follows. Section 3.2 reviews the relevant literature. Section 3.3 provides background on student assignment policies in Seoul. Section 3.4 describes the data.

Section 3.5 explains the empirical strategy, Section 3.6 presents results, and Section 3.7 concludes.

3.2. Literature Review

There are several types of school choice. One type of school choice in the U.S. is open enrollment which allows parents to rank preferences among public schools, and a district makes efforts to assign students to their highest priority schools. Other types of school choice programs are the use of alternative schools which provide school choice to students (e.g., charter and magnet schools). Except specialized magnet schools that require certain skills to enter the schools, students voluntarily apply to attend such alternative schools and are often selected to the schools using a lottery. Providing private school vouchers is another form of school choice that allows students to attend a private school without the financial burden of tuition.

School choice allows families to choose which school their children will attend, so it could improve school-student match quality (Friedman, 1962; Hoxby, 2000). As a result of students' self-selection into schools, school choice is likely to affect the level of school segregation. School choice can potentially integrate schools by breaking the link between neighborhood segregation and school segregation. In contrast, it can also increase school segregation by students self-selecting into a school. Scholars interested in the effect of school choice on segregation have examined the impact of school choice programs in the U.S. and other countries on school segregation. Several empirical studies have found that educational programs which expand parental choice of schools increase school segregation (Bifulco & Ladd, 2007; Bifulco, Ladd, & Ross, 2009; Cullen, Jacob, & Levitt, 2005; Hastings, Kane, & Staiger, 2005). One explanation for the increase in school segregation is different characteristics of participants and non-participants of school choice programs. For example, Long and Toma (1988), Coleman

and Hoffer (1987), Levin (1998), and Bifulco, Ladd, and Ross (2009) document that parents who select private schools or opt out of assigned public schools have higher socio-economic status (e.g. higher parental education level) than parents who do not.

Most of the studies that examine the effect of school choice on school segregation focus on school segregation by race and family economic backgrounds. There are several theories that explain the increase in school racial and socioeconomic segregation following the implementation of school choice. One theory posits that the preference for choice schools are similar across different racial and income groups even though minority and low-income families are less likely to participate in school choice due to their budget constraints. As a result of the different income levels by race, school choice can increase racial segregation, even more so in the districts without transportation provisions to choice schools. Another theory posits that preference toward student composition may be different across different racial and income groups. Several theories including Blumer's group position theory posit that the dominant group in terms of social status will distance themselves from subordinate groups to maintain their social positioning (Blumer, 1958). Based on such theories, white or otherwise advantaged parents would avoid schools with concentrations of minority or other disadvantaged populations. On the other hand, theories on the preference toward homogenous groups posit that people seek out environments that can allow them to interact with those similar to themselves. Studies looking at the types of choices that families made often find that parents seek schools where the student composition more closely resembles the student's own background (Henig, 1996; Levin, 1999; Weiher & Tedin, 2002). The theories on the preference toward homogenous groups imply minority or less advantaged families are as likely to choose segregated over integrated

environments as are white or more advantaged families, which explain why school choice may lead to an increase in school segregation.

Not a large number of studies have examined the impact of school choice on school segregation by student performance. Also, there are no clear theories for school segregation by ability. Because students' race and family economic backgrounds are very closely related to academic performance, studies that looked at school segregation by ability in the U.S. cannot analyze the effect of school choice on student ability independently from student race or socioeconomic backgrounds. As a result, to the best of my knowledge, no study has provided the causal effect of school choice on school segregation by academic performance levels.

Examining school choice in Seoul is advantageous in examining the impact of school choice on school segregation by academic performance levels for two reasons. First, Korea is a racially homogenous country, so it is possible to analyze the effect on school segregation by ability independently from racial segregation. Second, prior to the implementation of school choice, Seoul randomly assigned students based on academic performance in order to integrate schools by student academic performance, so the impact of school choice on academic segregation can be precisely measured.

3.3. Background

Seoul is the capital of Korea with over 10 million people in 234 square miles, and it has over 200 high schools. The Seoul Metropolitan Office of Education has jurisdiction over 11 school districts, and a school district consists of two or three administrative districts. Due to the centralized administration of the Seoul Metropolitan Office of Education, however, the 11 school districts are equivalent to neighborhood attendance zones in the U.S. That is, each student's school district is determined based on students' home address, and students are primarily

assigned to a school within their school district. Thus, I denote the 11 school districts in Seoul as attendance zones throughout this paper. Figure 3-1 presents the map of 11 attendance zones.

Regular high schools are very homogenous in Korea.[3] First, until 2009, there was no student sorting within attendance zones because all students were randomly assigned to a school within their attendance zone. Second, teacher characteristics are equally balanced across public schools. In Korea, teachers cannot select the public school that they wish to work for, and public schools must accept assigned teachers by the Seoul Metropolitan Office of Education. The Office of Education assigns newly hired teachers to each of their public schools and rotates existing teachers every five years. In addition, teacher salary is also controlled by the government, and each salary level is determined solely by a pay step based on the length of one's service. Third, the school curriculum is identical across all public schools as well as among public and private schools. Both public and private schools in Korea are government-subsidized so they closely follow the Ministry of Education's guidelines and the national curriculum as specified by the Elementary and Secondary Education Act. Therefore, all schools in Seoul follow the same governmental regulations, and all students basically follow the same curriculum and textbooks. Accordingly, school-related characteristics are similar in many important aspects.

This initial homogeneity of schools in Seoul started diverging for the following reasons. First, Seoul introduced school choice in 1996 for the schools in the center of Seoul. This policy was introduced because the city center was hollowing out so the schools in the center of Seoul could not fill their enrollment only with the students who lived in the attendance zone (Seoul

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[3] There are several types of high schools in Korea: regular high schools, special high schools (gifted high schools), and vocational or technical high schools. Special high schools select students based on merit, largely student academic performance. Vocational or technical high schools are designed for students who want to develop vocational skills to enter labor markets upon graduation or enter two year college. The Seoul High School Policy only applies to regular high schools.

Metropolitan Office of Education, 2009). Seoul turned the schools located within the 5 km

radius of the Seoul City Hall and all schools in Yongsan-gu into "pre-choice post-assignment

schools" and has allowed any student in Seoul to voluntarily apply for the schools since 1996. I

denote these schools as non-random schools. These schools are located in the attendance zone

11 in Figure 3-1. School assignment to these non-random schools preceded the random

assignments of schools in other 10 attendance zones. When these non-random schools are

oversubscribed, students are selected using a lottery, but admission preference is given to the

students who live near the schools. If these non-random schools are undersubscribed, students

are randomly selected based on the student's distance from the school to home during the

random assignments of schools in other attendance zones ("post-assignment"). In practice, until

2009, most of the students who lived in the center of Seoul chose these non-random schools,

because, if they didn't choose these schools, they were likely to be assigned to a school far away

from their home. Thus, these schools provided school choice to the students who lived outside

of the attendance zones only if the schools couldn't fill their enrollment with neighborhood

students. Even with this limited extent, student characteristics in the non-random schools

became different from other schools in that the non-random schools had the highest level of

school segregation in 2009 (See the last row of Table 3-5). After the implementation of the

Seoul High School Choice Policy in 2010, all high schools in Seoul become choice schools, so

there is no clear distinction between these non-random high schools and other high schools in

Seoul.

Second, the Seoul High School Choice Policy in 2010 introduced autonomous private

schools and autonomous public schools which are similar to private schools and charter schools

in the U.S, respectively.[4] Autonomous schools are able to set their own admission policies and

select students among applicants.[5] Autonomous private schools are different from autonomous

public schools in application restrictions and tuition. Autonomous private schools, on average,

have tuition three times higher than regular schools, and students within the upper 50 percentile

ranks of middle school standing are eligible to apply for the schools.[6] The upper 50 percentile

rank eligibility restriction and high tuition do not apply for autonomous public schools. Because

autonomous private schools are likely to be stratified by income, Seoul requires all autonomous

private schools to select 20 percent of the total students among low income students. In an

attempt to integrate students by family income, the upper 50 percentile performance rank

eligibility does not have to apply to the low income students. Low income students are selected

through application materials and interview, and their tuition is waived. 13 and 5 private schools

turned into autonomous private schools in 2010 and 2011, respectively. While autonomous

private schools are similar to private schools in the U.S, autonomous public schools focusing on

different curriculum are similar to the U.S. charter schools. All students who apply for

autonomous public schools are selected using a lottery. Two schools turned into autonomous

public schools in 2009 as a trial, and 5 and 12 public schools were turned into autonomous public

schools in 2010 and 2011, respectively. Autonomous schools attract students using specialized

curriculum, so these schools contribute to widening heterogeneity of schools.

Third, the Seoul High School Choice Policy changed regular high school assignments

from neighborhood-based random assignments to school choice. Until 2009, except for students

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[4] Public schools and private schools are very similar in Korea, so only autonomous private schools are equivalent to private schools in the U.S.

[5] Autonomous schools are also able to set 35 to 50 percent of their curriculum differently from the ones set by the Ministry of Education.

[6] This restriction of middle school standing was removed in 2015.

who applied for the non-random schools, all students progressing to high school were randomly assigned to a school using a computerized lottery system. The previous policy divided students into three groups based on their middle school standing in order to equally distribute students by school performance. See Figure 3-2 for student random assignment mechanisms used until 2009. According to Seoul Education Act, the distance from school to home is an important factor in the random student assignment, so, until 2009, students in an attendance zone had an equal chance of attending high schools around their homes. In contrast, the Seoul High School Choice Policy allows students to choose regular high schools within and outside of their attendance zones. Whether this third change increases school segregation is the focus of this paper.

The Seoul High School Choice Policy utilizes three rounds of assigning students across regular high schools.[7] The first round assigns 20 percent of the total enrollment of each school, the second and the third rounds assign 40 percent of the total enrollment. All students must choose two schools for the first round and two schools for the second round. The first round schools can be any schools in Seoul, but the second round schools must be the schools within students' attendance zone determined by home address. Students can rank the two schools (as the first and second choice school) for the first and second round. At the first round, using a computerized lottery system, 20 percent of students are randomly assigned to their first or second choice school regardless of their attendance zone (40 percent for the schools in the attendance zone 11). After assigning schools for the 20 percent of students at the first round, 40 percent of

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[7] The policy has two stages of school assignment, called pre- and post-stages. The post stage is relevant to regular high schools, and it consists of three rounds. The pre-stage assigns students to autonomous public high schools and science & arts focused high schools which is similar to special magnet schools in the U.S. At the pre-stage, students are able to choose one autonomous public high school and one science & arts focused high school. School choice of autonomous and science & arts focused high schools is not mandatory

students are assigned to their first or second choice school of the second round which is in their

attendance zone (60 percent for the schools in the attendance zone 11). At the third round, the

remaining 40 percent of students are randomly assigned to a school in their greater attendance

zone which combines their attendance zone and adjacent attendance zones. If students only want

to choose their neighborhood schools, they can choose the exact same two schools in the first

and the second round.[8]

The main changes caused by the school choice program in Seoul are the availability of

high school choices within the attendance zones as well as outside of neighborhood attendance

zones. However, the percentage of students who chose a school outside of their attendance zone

for the first round is not large and declines over time. In the first year of the policy

implementation (2010), 14.4 percent of students chose schools outside. The rate is 10.3 percent

in 2011 and 8.6 percent in 2012.

3.4. Data

The sample for this study consists of all regular high schools in Seoul. For data analysis,

I only use regular high schools in Seoul which excludes non-random schools and autonomous

schools. I exclude non-random schools because students were not randomly assigned to the

schools, and I exclude autonomous schools because data on the schools are not available.

Descriptive statistics of non-random schools and autonomous schools are presented if relevant

information is available. Four sets of data were used. First, data to measure school segregation

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[8] Several systems are adopted to avoid gaming the school choice. First, student assignments of autonomous public high schools and science & arts focused high schools precede at the pre-stage, so students can choose both regular high schools and the two alternative types of schools. Second, because two schools at the first and the second rounds can be exactly the same, students do not have to choose either schools within their attendance zone or schools outside of their attendance zones. Third, students are entered into the lottery system for both the first choice school and the second choice school at the same time, and if students are chosen for the both schools, they are assigned to the first choice school. Thus, students have no incentives to write their second choice school as the first choice school at each round.

are each regular high school's entering student distribution by middle school performance percentile rank. The student distribution data were collected by the National Assembly of the Republic of Korea from each high school in 2009, 2010, and 2011. Second, data on school performance and other school characteristics are from both Ministry of Education and the Seoul Metropolitan Office of Education. The performance outcome is based on the College Scholastic Aptitude Test (CSAT) which is a high-stakes test offered to students only once at the end of their third year of high school. The CSAT is similar to the SAT in the U.S., and a majority of students take the CSAT. I use student-level test scores standardized at the national mean. Third, data to measure school popularity (defined later) come from the Seoul Metropolitan Office of Education. School popularity data of autonomous high schools were collected from newspaper articles. Fourth, the local income tax data come from two sources. Data on the annual local income tax revenues are obtained from the "Annual Local Tax Statistics Report" published by the Ministry of Government Administration and Home Affairs of Korea. I divide each year's total local income tax revenues by the number of households to derive the amount of local income tax paid per household. The data on the number of households come from the Korean Statistical Information Service.

Table 3-1 presents the characteristics of 11 attendance zones in Seoul as of 2009, such as the annual local income tax paid per household, the number of schools, the number of students, and proportions of students in the top 10 percentile ranks by their middle school performance in all high schools in each attendance zone. The non-random schools are in the center of Seoul which are geographically located in several attendance zones.[9] In 2009, Seoul had 173 regular

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[9] Because all the schools within the 5 km radius of the Seoul City Hall were turned into the non-random schools, the schools can belong to several attendance zones. See Figure 3-1 for the intersection between the circle of the attendance zone 11 and other attendance zones.

high schools with 78,414 students and 39 non-random schools with 15,519 students. In terms of

the proportions of students in the top 10 percentile ranks, each attendance zone had

approximately 10 percent of students in the top 10 percentile ranks. I also present the

proportions of students in the top 10 percentile ranks by coeducational high school status. Even

though students were randomly assigned to either single-sex or coeducational high school in

2009, because average performance of female students is higher than male students,

coeducational schools had lower proportions of students in the upper ranked students than single-

sex schools. The proportions of students in the top 10 percentile ranks are 0.06 in all-male high

schools which is less than a half of the mean of all-female high schools (0.13). Among all high

schools in each attendance zone, the standard deviations of the proportions of each attendance

zone are about 0.02 or 0.03, which is high if students were randomly assigned to high school by

ability. However, within the same types of schools (either coeducational schools or single-sex

schools), the standard deviations are nearly zero in all attendance zones, which supports the

random distribution of students across schools within attendance zones in 2009. Finally, the

local income tax paid per household of each attendance zone ranges from 111 to 2,169 (in

thousands Korean Won equivalent to one U.S. Dollar). Households in Gangnam paid almost 20

times more local income tax than households in North in 2009, which suggests that

neighborhoods in Seoul are very segregated by income.

The main outcome of interest of this paper is school segregation. I use two measures of

school segregation, a dissimilarity index and an exposure index. Because students were

randomly assigned within their attendance zones until 2009, I measure school segregation across

schools of each attendance zone. School segregation by student academic performance is

measured using the proportions of the first grade high school students (equivalent to the tenth

grade in the U.S.) in the top 10 percentile ranks of middle school performance. The dissimilarity

index of the students in the top 10 percentile ranks to all other students below the top 10

percentile ranks[10] (the elite to non-elite dissimilarity index) can be computed as:

$$D_i = \frac{1}{2} \sum_{j=1}^{n} \left| \frac{e_{ij}}{E_i} - \frac{ne_{ij}}{NE_i} \right|$$

where e_{ij} and ne_{ij} refer to the number of students in the top 10 percentile ranks of academic

performance and the number of students below the top 10 percentile ranks in school j in

attendance zone i, respectively, and E_i and NE_i refer to the total number of students in the top 10

and below the top 10 percentile ranks in the attendance zone, respectively. The dissimilarity

index measures the degree to which the elite and non-elite students are evenly spread among

schools. It ranges from 0 to 1, with higher values representing more segregation and lower

values representing a more even distribution of students by performance across schools. More

generally, the dissimilarity index can be interpreted as the proportion of elite students who would

have to move from schools where they are overrepresented to schools where they are

underrepresented. The elite to non-elite dissimilarity index will be 0 if all high schools within an

attendance zone have 10 percent of elite students.

In addition to the dissimilarity index, I measure an exposure index which captures the

likelihood that a person from one group will encounter and interact with a person from another

group in a typical setting. This non-elite to elite exposure index can calculated as:

$$E_i = \sum_{i=1}^{n} \frac{ne_{ij}}{NE_i} \frac{e_{ij}}{(e_{ij} + ne_{ij})}$$

where e_{ij}, ne_{ij}, and NE_i are defined as in the previous equation. This index can be interpreted as

the proportion of elite students in the typical non-elite student's school. It ranges from 0 to 1,

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[10] The dissimilarity index can be computed with any two groups, but the percent students in the top 10 percentile is the only one cutoff that was reported consistently over time.

with higher values representing less segregation and lower values representing more segregation. The non-elite to elite exposure index will be 0.1 if typical non-elite students attend schools that have 10 percent of elite students.

Table 3-2 presents the mean of the dissimilarity indices of 10 attendance zones in 2009, 2010, and 2011. The number of high schools used to measure school segregation in 2010 and 2011 are less than 173 because, among the 173 schools, 12 and 13 schools turned to autonomous schools in 2010 and 2011, respectively.[11] Due to the random student assignment until 2009, it is not surprising to see that schools were very integrated in 2009. The school segregation measured by the dissimilarity index is 0.13 in 2009, which means 13 percent of the students in the top 10 percentile ranks in schools that they are overrepresented should transfer to the schools that they are underrepresented within their attendance zone in order to perfectly integrate high schools by performance levels. Despite the random student assignments in 2009, the dissimilarity index is not zero because the share of high performing students is larger in female-only schools than male-only schools and in coeducational schools. In 2009, the non-elite to elite exposure index is 0.1, which also suggests that schools were nearly perfectly integrated in terms of the typical composition of elite students (0.1). The dissimilarity index is 0.17 in 2010 and 0.19 in 2011. The dissimilarity index was increased by 30 percent from 2009 to 2010 and 12 percent from 2010 to 2011. The exposure index of 0.10 in 2009 decreased to 0.09 in 2010 and 0.08 in 2011.

I use oversubscription rates of each school at the first round assignment as an indicator of school popularity. Oversubscription rates are the number of students who chose each school divided by the number of the first grade enrollment of each school in 2010. Seven regular schools were undersubscribed, and the number of students who chose the schools was not

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[11] Including non-random schools, 18 and 17 schools turned to autonomous schools in 2010 and 2011, respectively.

reported. Thus, I recorded their oversubscription rates of the schools as 0. The oversubscription rates of regular high schools range from 0 to 17. Table 3-3 presents the oversubscription rates by school types. The rates of regular high schools are not comparable to the rates of autonomous private schools which accept 80 percent of their students from the students in the upper 50 percentile ranks. 20 percent of the total enrollment of autonomous private schools are reserved for low income students, so autonomous private schools have two separate oversubscription rates, one for students in the upper 50 percentile ranks and another for low income students. The oversubscription rate of autonomous private schools among the students in the upper 50 percentile ranks has the mean of 2.89 with the standard deviation of 2.33, and it ranges from 0 to 9.1. The rates among low income students are substantially lower than the regular applicants in the upper 50 percentile ranks: It has the mean of 0.52 and ranges from 0 to 1.6. Only 5 out of 13 autonomous private schools had more low income applicants than their allotted slots for low income students. Since the middle school performance eligibility restriction does not apply to the students from low income families and their tuition is waived, the lower rate among low income students is not due to their academic or financial restrictions. Finally, autonomous public schools were less popular than regular schools in 2010.

3.5. Empirical Strategy

3.5.1. School Segregation

A pretest-posttest design compares the outcomes before and after an intervention. The pretest-posttest design often cannot estimate the causal effect of the intervention because the pretest provides weak information about the counterfactual, what might have happened had the intervention not occurred (Shaddish, Cook, & Campbell, 2001). For example, if receiving an intervention is determined by time-variant characteristics of the object(s), the posttest outcome is

likely to be affected by the characteristics of the treated object(s). In addition, if the introduction of the intervention was gradual, other events that occurred between the pretest and the posttest period could have also affected the posttest outcome. Thus, the simple comparison of the pretest and the posttest outcomes is not likely to capture the true effect of the intervention because the posttest outcome is affected by the time-variant characteristics of the treated objects and effects of other events.

The impact of the Seoul High School Choice Policy on school segregation can be estimated using the pretest-posttest design because the introduction of the policy was immediate and the policy implementation was not determined by attendance zone characteristics. In addition, prior to the policy change, students were randomly assigned to regular high schools within the same attendance zones, so the level of school segregation prior to the implementation of the policy cannot be affected by student self-selection into a school. This random assignment is crucial in measuring the causal effect of school choice on school segregation because, in the absence of the random assignment, student self-selection into a school affects school segregation which is the same mechanism that school choice affects school segregation. That is, in the absence of the random assignment, the level of school segregation prior to the implementation of school choice would be higher than the counterfactual segregation level, so the pretest-posttest design will underestimate the effect of school choice on school segregation.

For the analysis using observations in 2009 and 2010, the pretest-posttest design can be implemented by estimating the following equation:

$$Y_{it} = \beta \, T_{2010} + \theta_i + \text{Income Tax}_{it} + \varepsilon_{it} \tag{1}$$

where Y_{it} is the dissimilarity or exposure index of attendance zone i in year t; T_{2010} is a dummy variable equaling 1 for all attendance zones in 2010 or 0 for all attendance zones in 2009; θ_i

indicates the attendance zone fixed effects; Income Tax$_{it}$ is the average local income tax paid per household in attendance zone i in year t; and ε_i is a random error term. β indicates the average effect of school choice on school segregation.

For the analysis using observations in 2009, 2010, and 2011, the following equation (2) is estimated:

$$Y_{it} = \beta_1 \, T_{2010} + \beta_2 \, T_{2011} + \theta_i + \text{Income Tax}_{it} + \varepsilon_{it} \tag{2}$$

where T$_{2011}$ is a dummy variable equaling 1 for all attendance zones in 2011 or 0 for all attendance zones in 2009 and 2010; and others are defined as in the previous equation. β_1 indicates the average effect of school choice on school segregation in 2010 relative to the school year 2009, and β_2 indicates the average effect of school choice on school segregation in 2011 relative to the school year 2009.

3.5.2. School Preference

Families would select a school based on many factors. Let's assume that school selection is a function of average school performance, student composition, teacher characteristics, curriculum, and other school factors such as coeducational school status and parental involvement in school. F in the following equation denotes the unknown function of the included variables that affect school selection.

School Selection = F(School Performance, Peer, Teacher, Curriculum, Other school factors)

One issue of estimating independent effects of each variable on school selection in the above function is that the variables are closely related to each other. For example, student and teacher characteristics are known to affect average school performance, so it would be difficult to analyze whether school performance independently affects school selection. Seoul is a unique place where many important factors in the above school selection function are homogenous. In

particular, teacher characteristics and curriculum are very similar across schools. Due to the

random assignment of students within the same attendance zones, peer characteristics were

homogenous until 2009. Despite many commonalities, due to unobservable factors such as

school administration, average school performance levels are different across schools within the

same attendance zones. Using the variation in a few school factors, I analyze the impact of the

school factors on school selection. Specifically, I estimate the following regression:

$$R_{si} = Z_{si}'\psi + \theta_i + \varepsilon_{si} \qquad (3)$$

where R_{si} is the oversubscription rate of each school s in attendance zone i in 2010; the vector of

Z_{si} includes pre-determined school characteristics such as the standardized CSAT test scores of

2009 graduates and the School Development Contribution Funds of each school s in attendance

zone i in 2009; θ_i indicates the attendance zone fixed effects; and ε_{si} is a random error term.

Standard errors are clustered at the attendance zone levels. Coefficients in the vector ψ indicate

the associations between the relevant school factor and school selection.

3.6. Results

This section has four sub-sections, and each presents results of within-attendance zone

balance tests in student distribution in 2009, attrition of elite students to autonomous schools,

school segregation, and school selection analysis.

3.6.1. Test of Within-Attendance Zone Balance in Student Distribution in 2009

Before presenting main results on school segregation, I first test for the validity of the

research design used for this school segregation analysis by examining balance in student

distributions across subsets of schools. If students sorted into certain schools that they preferred

prior to the introduction of school choice, the pretest-posttest design cannot provide the causal

estimates of the choice policy on school segregation. For example, if high performing students

selected into the high schools where previous graduates had high average CSAT scores, the

pretest-posttest design would understate the impact of school choice on school segregation.

Even though the nearly zero standard deviations of the proportions of students in the top 10

percentile ranks presented in Table 3-1 suggest that schools within the same attendance zones are

almost identical in the student distribution, I test balance in several student distributions across

subsets of schools.

These tests are conducted using the three groups of schools within the same attendance

zones divided by their average school performance because high performing schools are found to

be preferred among students (results presented in Section 3.6.4.). Independent variables are

three dummy variables which indicate whether each school in the same attendance zone belongs

to the 1st, 2nd, or 3rd tertile of the CSAT English tests score distribution[12] of 2008 graduates (the

smaller the tertile, the higher the average CSAT scores). That is, the 1st tertile dummy takes the

value of 1 for the schools in the 1st tertile within the same attendance zone or 0 otherwise. The

2nd and the 3rd tertile dummies are created similarly. Then, I run a regression of each of the

seven school-level variables which reflect student distribution by performance and family

backgrounds on each tertile dummy. The variables reflecting student distribution by school

performance are the share of students whose middle school percentile ranks below 9.99 (upper-

ranked), between 10.00 to 49.99 (middle-ranked), and 50.00 or above (lower-ranked). Four

other variables reflecting student distribution by family economic backgrounds are the share of

students whose family receives the government basic livelihood assistance, the share of students

with a single parent, the share of students receiving any form of tuition support, and the share of

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[12] High school students must take the two same tests, Korean and English. Because standardized English test scores have more variations (0.30) than standardized Korean test scores (0.23), I use English test scores to divide schools into three groups.

students receiving lunch support at school. All the school-level variables are measured using the characteristics of the first-year high school students of each school in 2009. I only use coeducational schools for the tests because the number of single sex schools is small to divide into three subsets. The total number of coeducational schools in 2009 is 77. Because the variables used in the balancing tests are missing for some schools, schools with missing values were excluded from the relevant analysis.

Table 3-4 present the results of balance tests. The coefficients of the variables related to the student distribution by performance are nearly zero and statistically insignificant. If high performing schools (schools in the 1st tertile) had more elite students than other schools in the same attendance zones, the coefficients of the share of upper-ranked students should be positive and statistically significant. As can be expected from Table 3-1, the shares of upper-, middle-, and lower-ranked students are almost identical between the three subsets of schools. These results support that students were randomly assigned to schools by middle school performance ranks within the same attendance zones in 2009. In addition, there are no systematic differences in student economic backgrounds across three subsets of schools. The coefficients of the percent of students by their family economic backgrounds are larger than the coefficients of the percent of upper-, middle-, and lower-ranked students, but none of the coefficients are statistically significant. The results of the balancing tests presented in Table 3-4 show that baseline student characteristics are reasonably balanced across schools.

3.6.2. Effects of Autonomous School Opening on Elite Students' Movement

This section examines the changes in the proportions of students in the top 10 percentile ranks between 2009 and 2010. Autonomous schools are not included in segregation and preference analysis, but the establishment of autonomous schools are likely to affect the

movement of high performing students. It is important to examine the movement of elite students because their movement can affect school segregation.

Table 3-5 presents the mean of the proportions of the upper-ranked students of each attendance zone in 2009 and 2010. In all attendance zones, the proportions of the upper-ranked students remained constant or decreased by one or two percentage points from 2009 to 2010. These results suggest that 10 to 20 percent of the upper ranked students (one to two percentage points of the top ten percentile ranks) may have moved to autonomous schools. The decrease in the proportions of the upper-ranked students suggests that high-performing students chose schools that have high performing peers (Recall the restrictions of upper 50 percentile ranks for the autonomous private schools). Due to the lack of data on autonomous schools, I cannot analyze whether the proportions actually increased in the autonomous schools in 2010, but, a large number of news released in 2010 reported that autonomous private schools recruited large proportions of high performing students.

The last column of Table 3-5 presents the changes in the means and standard deviations (in brackets) of the proportions of the upper-ranked students between 2009 and 2010. The changes in the standard deviations are an indicator of changes in school segregation within attendance zones. The standard deviations of 10 attendance zones remained constant or increased by 0.01 or 0.02, which implies the increase in school segregation across schools within the same attendance zones. In contrast, school segregation and the share of the upper-ranked students of the non-random schools in the attendance zone 11 decreased from 2009 and 2010. When all schools became available to school choice in 2010, school segregation of the non-random schools decreased. The decrease in school segregation in the areas where school choice was available before 2010 suggests that, when students became able to select nearby schools,

some of the high performing students applied to the nearby schools in their attendance zones instead of applying for the schools in the center of Seoul.

3.6.3. School Segregation

This section presents the results of the impact of the Seoul High School Choice Policy on school segregation. The policy effects on school segregation are computed using the regressions (1) and (2). Panel A presents the estimated effects measured using observations in 2009 and 2010, and Panel B presents the estimated effects measured using observations in 2009, 2010, and 2011. Even numbered columns are estimated without the local income tax control, and odd numbered columns are estimated with the control.

The results estimated using the elite to non-elite dissimilarity index presented in Table 3-6 suggest that school choice in Seoul increased the elite to non-elite dissimilarity index by 0.042 to 0.043 points in 2010 which is an increase of about 2 standard deviations of the index. The estimate effects of the policy change in 2011 are 0.069 when measured without the local income tax control and 0.76 when measured with the control. All the coefficients are statistically significant at the 1 percent level. The results measured using the dissimilarity index indicate that an additional four to eight percentage point of students in the top 10 percentile ranks (10 percent of the total students) would have to transfer to other schools to perfectly integrate schools in Seoul by academic performance levels compared to the segregation level prior to the policy change.

The estimated effects measured using the exposure index also suggest that schools became segregated by academic performance. The impact estimate is -0.007 in 2010 and -0.014 or -0.015 in 2011 depending on the inclusion of the local income tax control in analysis. The coefficients suggest that the share of elite students in a typical non-elite school decreased by

more than one percentage point in 2010. All coefficients are statistically significant at the 1 percent level. However, because the total share of the elite students decreased by one percentage point (See Table 3-5) in 2010 possibly due to the openings of autonomous schools, the estimated effects measured using the exposure index are likely to be affected by the compositional changes (Recall autonomous schools are not included in analysis due to the lack of data). That is, the share of elite students decreases when elite students move to autonomous schools, so the exposure index also decreases due to the student composition changes. In contrast, the effects estimated using the dissimilarity index are not biased by the compositional change, because the dissimilarity index measures school segregation conditional on the student composition (thus controlling for the effect of the compositional changes). In sum, the results presented in Table 3-6 suggest that, using both the dissimilarity index and the exposure index, the school choice program increased school segregation by student performance in Seoul. In addition, the segregation effects became larger over time.

I also analyze school segregation using segregation indices measured at two different geographical units.[13] First, I use greater attendance zones because, at the third round of school assignments, 40 percent of students are randomly assigned to a school in their greater attendance zone which combines their attendance zone and adjacent attendance zones. Second, I use administrative districts because administrative districts are smaller attendances zones (Recall that one attendance zone has two or three administrative districts). It is possible to gauge what is the geographical scope of student movements by comparing the results using the segregation indices measured at two different geographical units.

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[13] The impact on school segregation measured at the entire district level is very similar to the impact measured at the attendance zone level.

Table 3-7 presents results of school segregation estimated using the segregation indices measured at the greater attendance zone levels. I use three greater attendance zones, one combining the attendance zone 1, 2, 3, and 4 (North of the Han River which divides Seoul), another combining the attendance zone 5, 6, and 7 (Southeast of the Han River), and the other combining the attendance zone 8, 9, and 10 (Southwest of the Han River). In general, the estimated effects on school segregation at the greater attendance zone level are 4 to 14 percent smaller than the main estimated effects presented in Table 3-6. The estimated effect measured using the exposure index is only significant when 2009, 2010, and 2011 data are used for data analysis. The coefficients of the non-elite to elite exposure index estimated using 2009 and 2010 data are similar to the coefficient (-0.007) estimated using the same index measured at the attendance zone. Due to the decrease in the number of observations, however, the coefficients are statistically insignificant.

Table 3-8 presents the results estimated using segregation indices measured at smaller attendance zones. In general, the estimated effects on school segregation at the smaller attendance zone levels are 5 to 29 percent larger than the main estimated effects. The estimated effects on the elite to non-elite dissimilarity index in 2011, however, are 20 to 28 percent smaller than the main estimated effects. All coefficients are statistically significant at the 1 percent level. The comparison of the results of Tables 3-7 and 3-8 with the main results of Table 3-6 suggests that students in Seoul choose schools nearby their home under the school choice policy. Since Seoul does not provide transportation to school, students are likely to prefer to attend a school which is close to their home.

In addition to school segregation by student performance, I examine school socioeconomic segregation. I computed the dissimilarity index by replacing the number of

students in the top 10 percentile ranks with the number of free-lunch eligible students[14] and replacing the number of students below the top 10 percentile ranks with the number of students who are not eligible for a free lunch. The number of free-lunch eligible students by grade is only available in 2009, so I use the information on the free-lunch eligible students of each high school (including the first, second, and third graders of high school) to compute segregation measures in 2010. This is not very problematic because the second and third graders of each high school were randomly assigned and students were evenly distributed by free lunch status across schools (See Panel B of Table 3-4). Using the school-level free lunch information instead of the grade specific information, however, would underestimate the impact on school socioeconomic segregation, so I also compute the dissimilarity index in 2012 when all students in the first, second, and the third grades of high school were admitted through school choice.

Table 3-9 presents the results. The results are estimated using the regression (1) because only two observations per attendance zone were used for this analysis (The dummy T_{2010} takes the value of 1 for the observations not measured in 2009). Columns (1) and (2) present the results estimated using the dissimilarity indices in 2009 and 2010, and columns (3) and (4) present the results estimated using the dissimilarity indices 2009 and 2012, respectively. The exposure index was not used for this analysis because the proportions of students eligible for free lunch differs by school year. I find no effect of school choice on school socioeconomic segregation. The estimated coefficients presented in Table 3-9 are nearly zero and statistically insignificant. These results also support that students may have chosen schools within their attendance zones. Because attendance zones are segregated by income, school socioeconomic

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[14] Similar to the U.S. system, students from families with incomes below 130 percent of the poverty level are eligible for free lunch.

segregation is likely to increase if school choice affects student movement across attendance zones.

Finally, in all the Tables 3-6 to 3-9, the results estimated with and without the local income tax control are very similar, and the coefficients on the control variable (not presented) are nearly zero. One explanation of these results is the tax variable in each attendance zone does not substantially vary over time. I also find no systematic relation between the changes in school segregation and the average local tax paid. These results suggest that the effects on school segregation do not depend on the average income level of attendance zones, which cannot be true if schools in affluent attendance zones attracted more high performing students than schools in poor attendance zones.

3.6.4. School Preference

Some of the results presented in the Section 3.6.3 suggest that the distance from home to school is an important factor in school selection. In this section, I explore what other school factors are preferred in school selection. I use school-level oversubscription rates for this preference analysis. Analyzing preference using school-level oversubscription rates requires two conditions. First, every student must utilize choice because, if the participation in school choice is voluntary, oversubscription rates will reflect the different ability and motivation to utilize choice among participants and non-participants. In Seoul, the participation in school choice is mandatory so that the first concern is irrelevant. Second, there should be enough variation in school factors, and the school factors should be constant over time.

In Table 3-10, I present the variation in school-level characteristics such as average class size, pupil/teacher ratio, and proportions of the certified regular teachers, the CSAT English test scores in 2009, and per-pupil school development contribution funds (the private funds) of each

attendance zone. The average class size is 36.55, the average pupil/teacher ratio is 18.66, and the

average proportions of certified regular teachers are 0.95. The means of the average class size,

pupil/teacher ratio, and proportions of the certified regular teachers presented in Table 3-10 are

very similar across 10 attendance zones. In addition, the standard deviations of each variable is

small, which suggest that schools within the attendance zones are similar in terms of the

characteristics. In contrast, the CSAT English test scores and the school development

contribution funds show relatively large differences across and within attendance zones. The

CSAT English test scores are standardized at the national student mean, so, if the average

performance of students in each school is identical, both the mean and standard deviation of each

attendance zone should be zero. However, the mean of each attendance zone ranges from -0.27

to 0.25, and the standard deviation of each attendance zone also ranges from 0.12 to 0.23, which

suggests that there is enough variation in the test scores.[15] The per-pupil school development

contribution funds are also different across and within the attendance zones. The funds are based

on voluntary contributions from non-profit sectors including parents, and the funds should be

used to educational purposes such as extracurricular activities. The means of the per-pupil funds

range from 31.53 to 127.97 (in thousands Korean Won equivalent to one U.S. Dollar), and the

standard deviations of each attendance zone range from 28.50 to 246.83.[16] In short, in contrast to

the three educational inputs controlled by the Korean government, average school performance

levels and the school development contribution funds are different across schools.

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[15] I also tested whether school factors are constant over time by examining whether school performance of a specific school is predictable based on previous performance. I calculated each school's differences between the school's CSAT English test score mean and the attendance zone mean for the same test in 2008 and 2009. I regressed the 2008 deviation on the 2009 deviation with the attendance zone fixed effects. The coefficient of the 2008 deviation is 0.85 and statistically significant at the 1 percent level. This result suggests that the 2008 test scores predicts 2009 test scores, so the school performance level is stable in a school.

[16] The total per-pupil spending (including teacher salaries) was 7,900 (in thousands Korean Won) in 2010.

Using the variation in the test scores and the development funds, Table 3-11 presents the association between school oversubscription rates and several school factors. The column (1) presents the results estimated using the regression (3), and the column (2) presents the results estimated using the regression (3) with three additional governmental input variables. The coefficients of the CSAT English test scores range from 4.8 to 5.9, which means that a school with a 0.5 standard deviation higher test scores would have two or three more students applied for each slot of the first grade of high school. Because the mean of school oversubscription rates is 4.44 in 2010, the effect of the average school performance is large in magnitude. The school development funds are also positively associated with the increase in the oversubscription rates, and the coefficients suggest that schools with approximately $120 more private funds per pupil (a one standard deviation increase) would have about one more student apply to the school. The results presented in Table 3-11 suggest that the average school performance is important in parental school selection. In addition, the different school performance levels are likely to be the results of unobservable school factors (e.g., school administration) because observable school inputs are similar across all schools in Seoul.

3.7. Conclusion

Seoul started implementing the Seoul High School Choice Policy in 2010 that allows students to attend any school in Seoul regardless of their residential location. Because neighborhoods in Seoul are very segregated by income, policy makers in Seoul tried to integrate schools to mitigate the geographical segregation of residents. This paper examines the impact of school choice on school segregation. Specifically, this paper examines school segregation by student performance levels.

Despite the political intention to promote school integration, I find that school choice in Seoul increased school segregation by student performance. In addition, I find that, in the attendance zone where school choice was adopted in 1996 (Jungbu), school segregation decreased when all schools in Seoul become available to school choice. The attendance zone (Jungbu) was one of the most segregated attendance zones in Seoul. Several findings of this paper suggest that students mainly choose neighborhood schools within their own attendance zones. Contrary to the increase in school segregation by student performance, I find no effect of the same policy change on school socioeconomic segregation.

In addition to the increase in school segregation by student performance, I find that parents prefer schools with high average test scores of previous graduates. Due to the lack of data, I cannot directly test whether all types of students prefer high performing schools. However, if every student equally prefers high performing schools, there would not be an increase in school segregation by student ability. I also find suggestive evidence that autonomous private schools that accept a majority of students from the upper and middle performance percentile ranks were not popular among low income students who tend to have low academic performance. Combining these results, my results suggest that high achievers prefer to attend high performing schools more than low achievers.

Many scholars have argued that school choice programs have allowed high performing schools to cream-skim educationally advantaged students. This critique applies to Seoul. The findings of this study are not generalizable because educational settings in Seoul are unique in many aspects. Despite this limitation, the results of this study contributes to the current debates on the effect of school choice on school segregation by student ability in the U.S. Studies evaluating the school choice policies in the U.S. cannot clearly argue that school choice increases

student sorting by performance levels because student performance is closely related to race and family income. However, I find that, even in a racially homogenous country, school choice increases school segregation by student performance. This result may suggest that school choice increases school segregation by ability through differential individual selection processes.

References

Bifulco, R., & Ladd, H. F. (2007). School choice, racial segregation, and test-score gaps: Evidence from North Carolina's charter school program. *Journal of Policy Analysis and Management*, *26*(1), 31-56.

Bifulco, R., Ladd, H. F., & Ross, S. L. (2009). The effects of public school choice on those left behind: Evidence from Durham, North Carolina. *Peabody Journal of Education*, *84*(2), 130-149.

Blumer, H. (1958). Race prejudice as a sense of group position. *Pacific Sociological Review*, 3-7.

Carnoy, M. (2000). School choice? Or is it privatization?. *Educational Researcher*, 29(7): 15–20.

Coleman, J. S., & Hoffer, T. (1987). *Public and Private High Schools: The Impact of Communities* (p. 213). New York: Basic Books.

Cullen, J. B., Jacob, B. A., & Levitt, S. D. (2005). The impact of school choice on student outcomes: an analysis of the Chicago Public Schools. *Journal of Public Economics*, *89*(5), 729-760.

Epple, D., & Romano, R. E. (1998). Competition between private and public schools, vouchers, and peer-group effects. *American Economic Review*, 33-62.

Friedman, M. (1962). *Capitalism and Freedom*. Chicago, IL: University of Chicago press.

Hastings, J. S., Kane, T. J., & Staiger, D. O. (2005). *Parental preferences and school competition: Evidence from a public school choice program* (Working Paper No. 11805). National Bureau of Economic Research.

Henig, J. R. (1996). The local dynamics of choice: Ethnic preferences and institutional responses. In B. Fuller, & R. F. Elmore (Eds.) *Who Chooses? Who Loses? Culture, Institutions, and the Unequal Effects of School Choice* (pp. 95-117). New York, NY: Teachers College Press

Hsieh, C. T., & Urquiola, M. (2006). The effects of generalized school choice on achievement and stratification: Evidence from Chile's voucher program. *Journal of Public Economics*, *90*(8), 1477-1503.

Hoxby, C. M. (2000). Does competition among public schools benefit students and taxpayers?. *American Economic Review*, *90*(5), 1209-1238.

Ladd, H. F., & Fiske, E. B. (2001). The uneven playing field of school choice: Evidence from New Zealand. *Journal of Policy Analysis and Management*, *20*(1), 43-64.

Levin, H. M. (1998). Educational vouchers: Effectiveness, choice, and costs. *Journal of Policy Analysis and Management*, *17*(3), 373-392.

Levin, H. M. (1999). The public-private nexus in education. *American Behavioral Scientist*, *43*(1), 124-137.

Long, J. E., & Toma, E. F. (1988). The determinants of private school attendance, 1970-1980. *Review of Economics and Statistics*, *70*(2), 351-357.

Shaddish, W. R., Cook, T. D., & Campbell, D. T. (2001). *Experimental and Quasi-experimental Designs for Generalized Causal Inference.* Boston, MA: Houghton Mifflin Company.

Weiher, G. R., & Tedin, K. L. (2002). Does choice lead to racially distinctive schools? Charter schools and household preferences. *Journal of Policy Analysis and Management*, *21*(1), 79-92.

Figure 3-1. School and Administrative Districts in Seoul (2009)
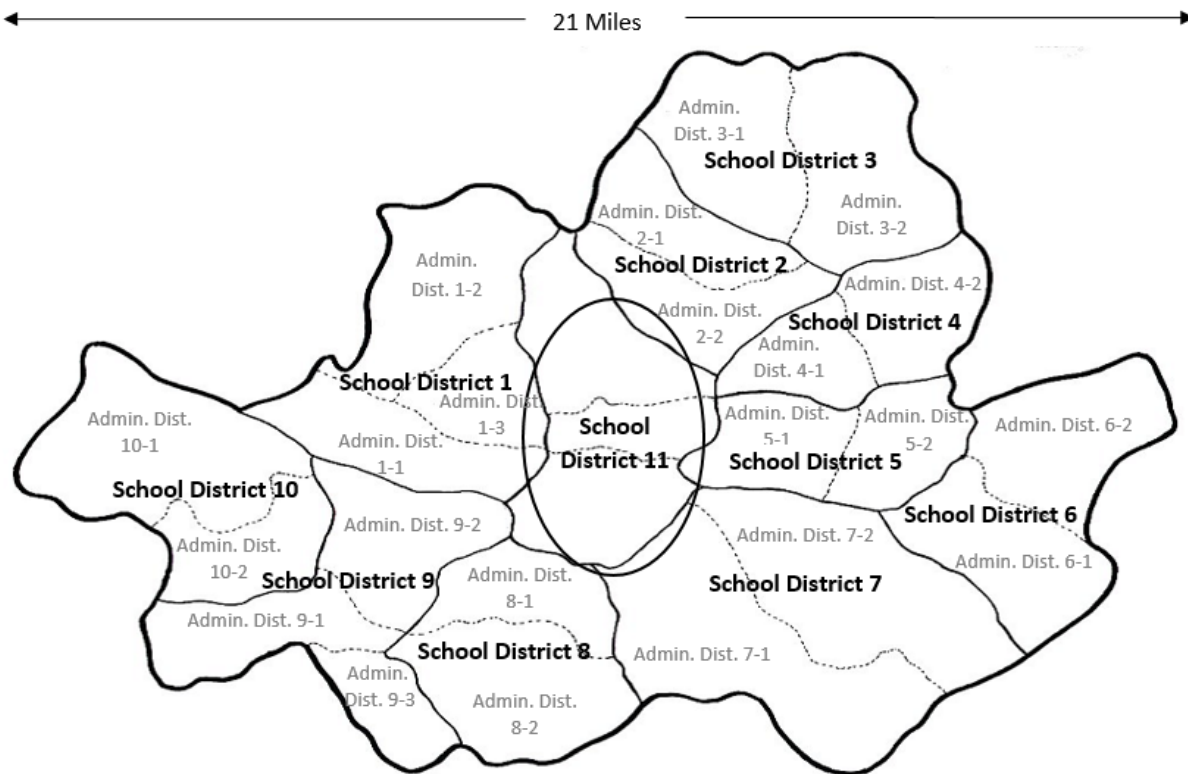
Note: School districts 1 to 10 are denoted as attendance zones 1 to 10 throughout the paper.

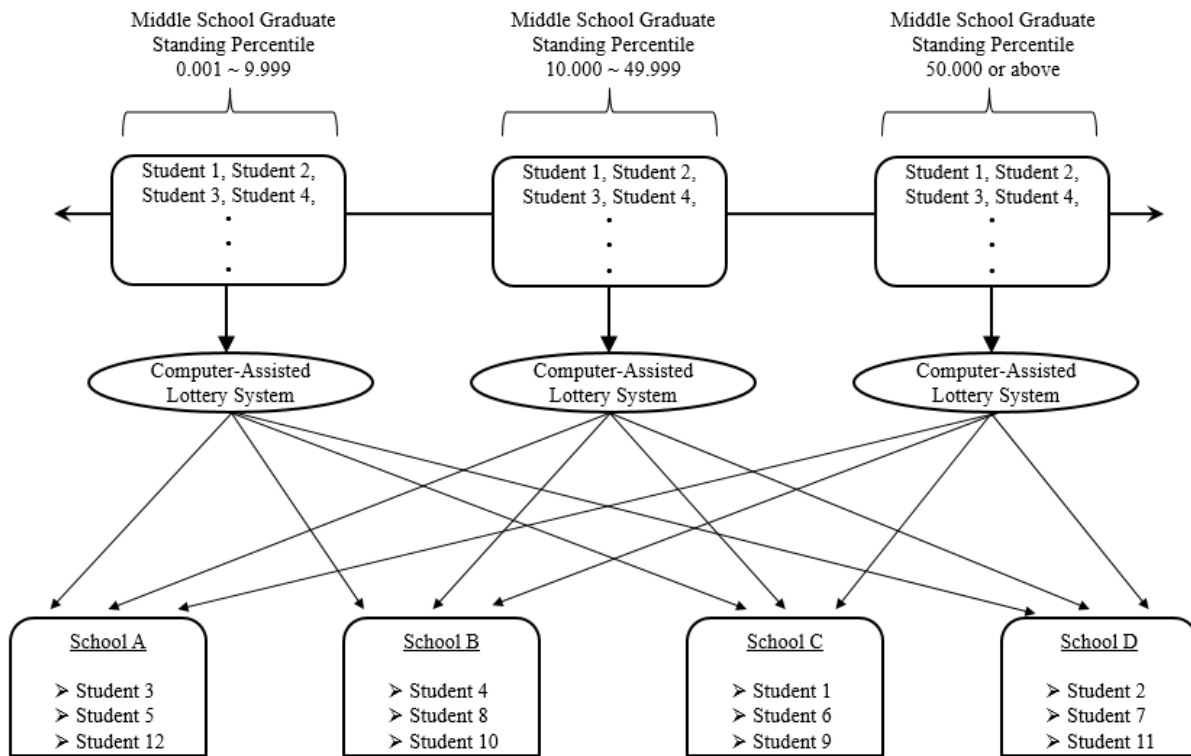**Figure 3-2. Student Random Assignment Mechanisms (2009)**

Table 3-1. List of Attendance Zones in Seoul and High School Characteristics in 2009

No.	Name	Tax	Num. of schools [Number of non-random schools]	Num. of students [Num. of students in non-random schools]	Upper-ranked students of random schools			
					All Schools	Coeducational Schools	Male Schools	Female Schools
1	West	266	12 [7]	5,524 [2,869]	0.11 (0.03)	0.11 (0.00)	0.07 (0.00)	0.14 (0.00)
2	Seongbuk	239	10 [1]	4,413 [465]	0.10 (0.01)	0.10 (0.00)	0.08 (n.a)	0.12 (0.00)
3	North	111	23 [0]	10,884 [0]	0.10 (0.03)	0.10 (0.01)	0.06 (0.01)	0.14 (0.01)
4	East	145	13 [2]	5,415 [791]	0.11 (0.03)	0.10 (0.00)	0.07 (0.00)	0.14 (0.00)
5	Seongdong	148	7 [6]	2,954 [2,593]	0.12 (0.02)	0.11 (0.00)	0.08 (n.a)	0.15 (0.00)
6	Gangdong	330	22 [0]	11,455 [0]	0.09 (0.02)	0.09 (0.00)	0.06 (0.00)	0.12 (0.00)
7	Gangnam	2,169	26 [0]	12,120 [0]	0.09 (0.02)	0.09 (0.01)	0.06 (0.00)	0.12 (0.00)
8	Dongjak	165	16 [0]	6,158 [0]	0.10 (0.03)	0.10 (0.00)	0.06 (0.00)	0.14 (0.00)
9	South	819	19 [1]	7,644 [291]	0.10 (0.03)	0.09 (0.01)	0.05 (0.00)	0.14 (0.01)
10	Gangseo	280	25 [0]	11,847 [0]	0.10 (0.03)	0.10 (0.01)	0.06 (0.01)	0.14 (0.01)
11	Jungbu (Central)	n.a.	0 [22]	0 [8,510]	n.a.	n.a.	n.a.	n.a.
	Total		173 [39]	78,414 [15,519]	173	77	49	47

Notes: Schools are restricted to regular high schools in Seoul. *n.a.* signifies that a standard deviation is not available because there is only one boys' school in an attendance zone.
The 39 non-random schools include 37 pre-choice and post-selection schools and two trial autonomous public high schools (Wonmook and Guhyun high schools). The non-random schools are geographically located in several attendance zones in the center of Seoul.

Table 3-2. Changes in School Segregation

Measure	2009	2010	2011
Elite to non-elite dissimilarity index	0.13 (0.02)	0.17 (0.03)	0.19 (0.04)
Non-elite to Elite exposure index	0.10 (0.01)	0.09 (0.01)	0.08 (0.01)

Note: Means are cross-sectional sample means, standard deviations are in parentheses.

Table 3-3. Average Oversubscription Rates of Each Attendance Zone by School Types (2010)

No.	Name	Regular Schools	Autonomous Private Schools		Autonomous Public Schools
			Regular	Low-Income	
1	West	4.09	1.45	0.00	*n.a.*
2	Seongbuk	3.66	2.10	1.60	*n.a.*
3	North	5.35	*n.a.*	*n.a.*	0.80
4	East	4.53	2.00	1.20	3.50
5	Seongdong	3.16	3.60	1.50	*n.a.*
6	Gangdong	4.40	1.80	0.00	*n.a.*
7	Gangnam	5.75	4.30	0.00	*n.a.*
8	Dongjak	5.07	*n.a.*	*n.a.*	2.00
9	South	4.16	1.20	0.00	7.50
10	Gangseo	5.07	9.10	1.10	2.90
11	Jungbu (Central)	1.75	2.10	0.47	1.90
	Mean	4.44	2.89	0.52	2.77

Table 3-4. Tests of Within-Attendance Zone Balance in Baseline Achievement (2009)

Dependent variable	1st Tertile (1 = yes)	Number of Observations	2nd Tertile (1 = yes)	Number of Observations	3rd Tertile (1 = yes)	Number of Observations
Panel A. Student distribution by middle school performance						
% Upper-ranked students	0.001	69	-0.001	69	-0.000	69
($\psi < 0.10$)	(0.001)		(0.001)		(0.001)	
% Middle-ranked students	0.000	69	-0.001	69	0.000	69
($0.10 < \psi < 0.50$)	(0.002)		(0.002)		(0.002)	
% Lower-ranked students	-0.001	69	0.001	69	0.000	69
($\psi \geq 0.50$)	(0.003)		(0.003)		(0.003)	
Panel B. Student distribution by family economic backgrounds						
% Gov't financial aids	-0.051	76	-0.026	76	0.077	76
	(0.039)		(0.051)		(0.083)	
% Single parent	0.063	76	-0.026	76	-0.037	76
	(0.096)		(0.126)		(0.204)	
% Tuition support	-0.001	72	0.003	72	-0.002	72
	(0.018)		(0.023)		(0.037)	
% Lunch support	-0.004	77	-0.008	77	0.012	77
	(0.017)		(0.021)		(0.035)	

Notes: Regressions are conducted using the coeducational school sample. I estimate all coefficients by running a regression of each dependent variable on a dummy variable indicating each school belongs to the 1st tertile, 2nd tertile, or 3rd tertile of the 2008 CSAT English test score distribution conditional on attendance zones. The smaller the tertile, the higher the average CSAT test scores. Schools with a missing value were excluded from the relevant analysis. Standard errors are in parentheses. Ψ denotes middle school graduate standing percentile rank. Attendance zones with missing values were excluded from analysis.

Table 3-5. Changes in Proportions of the Upper-ranked Students between 2009 and 2010

No.	Attendance zone	Num. of schools	2009	2010	Δ Change
1	West	12	0.11	0.09	-0.02
			(0.03)	(0.03)	[+0.00]
2	Seongbuk	10	0.10	0.09	-0.01
			(0.01)	(0.03)	[+0.02]
3	North	23	0.10	0.09	-0.01
			(0.03)	(0.04)	[+0.01]
4	East	13	0.11	0.10	-0.01
			(0.03)	(0.05)	[+0.02]
5	Seongdong	7	0.12	0.10	-0.02
			(0.02)	(0.04)	[+0.02]
6	Gangdong	22	0.09	0.08	-0.01
			(0.02)	(0.03)	[+0.01]
7	Gangnam	26	0.09	0.09	-0.00
			(0.02)	(0.03)	[+0.01]
8	Dongjak	16	0.10	0.10	-0.00
			(0.03)	(0.04)	[+0.01]
9	South	19	0.10	0.09	-0.01
			(0.03)	(0.04)	[+0.01]
10	Gangseo	25	0.10	0.09	-0.01
			(0.03)	(0.04)	[+0.01]
11	The Center of Seoul	39	0.11	0.09	-0.02
	(Non-random schools in 2009)		(0.04)	(0.03)	[-0.01]
	Seoul Mean		0.10	0.09	-0.01

Notes: Standard deviations are in parentheses, and the difference of standard deviations between 2009 and 2010 are presented in brackets.

Table 3-6. Estimated Effects on School Segregation by Student Academic Performance

	Elite to non-elite dissimilarity index		Non-elite to elite exposure index	
Panel A : 2009, 2010	(1)	(2)	(3)	(4)
School choice effect in 2010	0.042***	0.043***	-0.007***	-0.007***
	(0.011)	(0.011)	(0.002)	(0.002)
Control variable	X	O	X	O
Observations	20	20	20	20
Number of attendance zones	10	10	10	10
Panel B: 2009, 2010, 2011	(5)	(6)	(7)	(8)
School choice effect in 2010	0.042***	0.043***	-0.007***	-0.007***
	(0.012)	(0.012)	(0.002)	(0.002)
School choice effect in 2011	0.069***	0.076***	-0.014***	-0.015***
	(0.012)	(0.013)	(0.002)	(0.002)
Control variable	X	O	X	O
Observations	30	30	30	30
Number of attendance zones	10	10	10	10

Notes: "X" and "O" indicate the exclusion and the inclusion of the control variable, respectively. Standard errors are in parentheses. *** indicates statistically significant at 0.01.

Table 3-7. Estimated Effects on School Segregation using Greater Attendance Zones

	Elite to non-elite dissimilarity index		Non-elite to elite exposure index	
Panel A: 2009, 2010	(1)	(2)	(3)	(4)
School choice effect in 2010	0.036**	0.045*	-0.006	-0.008
	(0.007)	(0.008)	(0.002)	(0.003)
Average income tax control	X	O	X	O
Observations	6	6	6	6
Number of attendance zones	3	3	3	3
Panel B: 2009, 2010, 2011	(5)	(6)	(7)	(8)
School choice effect in 2010	0.036*	0.037*	-0.006**	-0.006**
	(0.013)	(0.015)	(0.002)	(0.002)
School choice effect in 2011	0.061*	0.073*	-0.013***	-0.017**
	(0.013)	(0.025)	(0.002)	(0.003)
Average income tax control	X	O	X	O
Observations	9	9	9	9
Number of attendance zones	3	3	3	3

Notes: "X" and "O" indicate the exclusion and the inclusion of the control variable, respectively. Standard errors are in parentheses. * indicates statistically significant at the 0.10; ** indicates statistically significant at 0.05; *** indicates statistically significant at 0.01.

Table 3-8. Estimated Effects on School Segregation using Smaller Attendance Zones

	Elite to non-elite dissimilarity index		Non-elite to elite exposure index	
Panel A: 2009, 2010	(1)	(2)	(3)	(4)
School choice effect in 2010	0.044***	0.044***	-0.008***	-0.009***
	(0.008)	(0.008)	(0.002)	(0.002)
Average income tax control	X	O	X	O
Observations	40	40	40	40
Number of attendance zones	20	20	20	20
Panel B: 2009, 2010, 2011	(5)	(6)	(7)	(8)
School choice effect in 2010	0.044***	0.045***	-0.008***	-0.008***
	(0.008)	(0.010)	(0.002)	(0.002)
School choice effect in 2011	0.055***	0.055***	-0.017***	-0.019***
	(0.010)	(0.011)	(0.002)	(0.003)
Average income tax control	X	O	X	O
Observations	60	60	60	60
Number of attendance zones	20	20	20	20

Notes: "X" and "O" indicate the exclusion and the inclusion of the control variable, respectively. Standard errors are in parentheses. *** indicates statistically significant at 0.01.

Table 3-9. Estimated Effects on School Segregation by Free Lunch Eligibility

Data used	Free lunch to non-free lunch dissimilarity index			
	2009 and 2010		2009 and 2012	
	(1)	(2)	(3)	(4)
School choice effect	0.014	0.015	0.000	0.001
	(0.021)	(0.023)	(0.015)	(0.016)
Average income tax control	X	O	X	O
Observations	20	20	20	20
Number of attendance zones	10	10	10	10

Notes: "X" and "O" indicate the exclusion and the inclusion of the control variable, respectively. Standard errors are in parentheses. Standard deviations are in parentheses.

Table 3-10. School Characteristics by High School Attendance Zones in Seoul (2009)

No.	Name	Governmental Inputs			Outcome	Non-govtal input
		Class size	Pupil-teacher ratio	% Regular Teachers	Performance (CSAT)	Private Funds
1	West	36.94 (1.46)	18.44 (1.59)	0.93 (0.05)	-0.02 (0.18)	72.91 (57.81)
2	Seongbuk	35.97 (1.81)	18.42 (1.08)	0.93 (0.05)	-0.19 (0.23)	46.84 (26.49)
3	North	36.55 (1.48)	18.66 (1.02)	0.94 (0.02)	0.02 (0.18)	31.53 (33.26)
4	East	35.89 (1.22)	18.28 (1.14)	0.95 (0.01)	-0.22 (0.18)	83.58 (110.26)
5	Seongdong	38.23 (1.25)	18.49 (1.54)	0.93 (0.06)	-0.15 (0.12)	107.04 (99.31)
6	Gangdong	37.67 (1.21)	19.39 (0.90)	0.95 (0.01)	0.03 (0.14)	96.79 (246.83)
7	Gangnam	36.72 (2.05)	18.84 (1.11)	0.95 (0.01)	0.25 (0.16)	127.97 (144.70)
8	Dongjak	34.95 (2.39)	17.94 (0.88)	0.94 (0.03)	-0.10 (0.15)	59.50 (64.48)
9	South	34.75 (3.38)	17.75 (1.14)	0.94 (0.02)	-0.27 (0.22)	41.61 (28.50)
10	Gangseo	37.77 (1.53)	19.46 (1.16)	0.94 (0.05)	0.01 (0.23)	42.97 (35.70)

Notes: The performance is based on the 2008 CSAT standardized English test scores. Means of each attendance zone are presented, and standard deviations are in parentheses.

Table 3-11. Estimated Effects on Oversubscription Rates

	Oversubscription rates	Oversubscription rates
	(1)	(2)
Performance (Standardized CSAT score)	5.879***	4.777***
	(1.047)	(0.952)
School development funds	0.015***	0.011***
	(0.003)	(0.002)
Coeducational school	-0.634	-0.388
	(0.502)	(0.448)
Class size		0.726***
		(0.175)
Pupil/teacher ratio		0.249
		(0.306)
% regular teachers		0.196
		(10.875)
Number of attendance zones	11	11
Observations	168	168

Notes: 11 attendance zones were used for oversubscription analysis. Standard errors clustered at the attendance zone levels are in parentheses. *** indicates statistically significant at 0.01.

Appendix A. Bibliography and Details of Changes in School Desegregation Plans

AL, Mobile County: Neighborhood in 1999

Duke, B. A. (2009). *The strange career of Birdie Mae Davis: A history of a school desegregation lawsuit in Mobile, Alabama*, 1963-1997 (Master's thesis). Auburn University. Auburn, AL.

> "In the fall of 1999, the school system limited the number of crosstown busing routes for the purpose of integration by two-thirds, leaving only twenty routes. The opening of three schools, Howard Elementary School, Calloway-Smith, and Ella Grant Elementary, all in inner-city locations, allowed for students who had been previously bused up to fourteen miles to attend the newest schools in the district, in their own neighborhood" (p. 150).

> "The thirty-four years of litigation that comprised the *Birdie Made Davis case* has a significant impact on Mobile County Schools. In total, the board created seven magnet schools to attract white students into previously majority black schools. As of 1997, the school system bused about 2,800 students…" (p. 148).

Davis v. Mobile, CIVIL ACTION NO: 98-0419-RV-C (1999, May)

> "Pursuant to that policy, the Mobile County Public School System will not transport students who live within a two-mile radius of the school unless they meet certain exceptions." Those exceptions are special education students, students in an unsafe situation, and students who live near bus stops that were in existence prior to the strict implementation of the two-mile rule that have been grandfathered.

AR, Little Rock: Choice in 1987, Neighborhood in 1998

Little Rock v. Pulaski, 237 F. Supp. 2d 988 (2002)

> In 1987, "LRSD proceeded to develop a 'controlled choice' desegregation plan, which was approved by Judge Woods on February 27, 1987 (docket no. 739). Under this plan, LRSD was divided into two attendance zones of approximately equal racial balance. Students were assigned to schools so that each grade at each school reflected the racial balance within that attendance zone. After a student was assigned to a school, the student's parents could request reassignment to another school within their attendance zone. That request would be granted so long as each school would remain within a range of plus or minus 12.5% of the black student population at the school. The plan also provided for eight magnet schools (four elementary, two junior high, and two high schools), with seats reserved for students of each of the three Pulaski County school districts. The target racial composition of the magnet schools was 50%-50%... The controlled choice plan was implemented beginning with the 1987-88 school year (docket no. 670)."

> In 1998… "a federal judge's approval of a revised plan authoriz(ed) less busing and more neighborhood schools in Little Rock." The newly approved 24-page consent decree replaced 1989 accord. It authorized administrators to stop assigning students to schools across town, except in the unlikely event that such busing was needed to prevent a school from becoming more than 80 percent white.

CA, Fresno: Neighborhood in 2012

The Initiative in Spatial Structures in Social Sciences (S4) project at Brown University (Desegregation Court Cases & School Demographic data section). Retrieved from http://www.s4.brown.edu/schoolsegregation/schoolsegdatapage/codes/schoolseg.asp

> Fresno implemented desegregation plans by HEW action. "HEW/OCR action pending since 1968; notice of intention to initiate formal enforcement proceedings, 1975; ESAA funds denied, 1977; antibusing amendments preclude further desegregation (per 1978 supplement)"

Fresno Unified School District. (n.d.). *Facilities master plan-Final report* [PDF documents]. Retrieved from http://www.fresnounified.org/dept/planning/masterplan/Shared%20Documents/fusd%20master%20plan-2009-0423.pdf

> The district relied on magnet schools and minor non-contiguous zoning (changing middle school feeder patterns). Elementary and high school students were already assigned to neighborhood schools. Based on Facilities Master Plan adopted in 2009, Fresno changed feeder patterns and adjusted school attendance zones in 2012. This change involved grade reconfiguration of schools as well as new school construction and school closure.

CA, San Diego: SES in 1996

Board of Education v. Superior Court (Carlin), 61 Cal. App. 4th 411; 71 Cal. Rptr. 2d 562 (1998)

> "For over two decades, the superior court has supervised San Diego Unified School District's voluntary integration plan. In August 1996, the court fixed January 1, 2000, as the date court supervision would end. A year later the court modified its order to end supervision on July 1, 1998…" A voluntary integration plan (Voluntary Ethnic Enrollment Program: VEEP) and the school choice program were implemented under a desegregation court order. The VEEP program had been renamed to the Voluntary Enrollment Exchange Program and took a broader view of integration, focusing on economic disadvantage. In 1996, the district Superintendent Bertha "Pendleton declared no student is denied classroom placement within a school based solely on race [61 Cal. App. 4th 417] or ethnicity and no school boundaries have been 'gerrymandered' for racial or ethnic balance purposes." Later, the district supplemented the VEEP and magnet programs with a statewide open enrollment program (named 'Choice' in California with no provision of free transportation).

Koedel, C., Betts, J. R., Rice, L. A., & Zau, A. C. (2010). *The social cost of open enrollment as a school choice policy.* Working paper No. 0906. University of Missouri. Retrieved from http://economics.missouri.edu/working-papers/2009/WP0910_koedel.pdf

> "The VEEP program was originally designed with the goal of mixing students to make within-school student populations more representative of the district's overall racial diversity. It originated as part of the district's response to the 1977 *Carlin v. Board of*

Education decision, where the California Supreme Court determined that 23 San Diego schools were racially segregated and ordered the district to integrate them. After California passed Proposition 209 in 1996, it became illegal to provide programs that gave racial preferences. The VEEP program continued, but took a broader view of integration, focusing on economic disadvantage. District-provided busing is available to students who participate in the VEEP program, and the busing pattern is designed to move students between less affluent and more affluent neighborhoods. Schools in less affluent areas are matched to schools in more affluent, predominantly white areas, in what are called allied patterns. Although any student of any race can apply to attend any school in the VEEP busing pattern, the pattern is such that student-movement through the VEEP program should have an integrating effect on the district.

The magnet program was also part of the district's response to the 1977 court decision, and it was also designed with integration as an explicit objective. At its inception, the magnet program typically sought to attract students from primarily white to primarily non-white areas by offering specialized curricula and additional resources. A few magnets were established in relatively affluent areas in the hope of attracting students from less affluent areas. Similarly to VEEP, transportation is provided by the district for magnet students. Again, while any student can apply to any magnet school, the design of the magnet program is such that it should also integrate the district" (pp. 2-3).

CA, San Francisco: Neighborhood in 1999; SES in 2001

Asimov, N. (2000, Jan. 7). District oks race-neutral school plan. *San Francisco Chronicle*. Retrieved from http://www.sfgate.com/education/article/S-F-District-OKs-Race-Neutral-School-Plan-2785679.php

"(B)oard members said they had rejected a plan designed to achieve at least some integration by considering students' poverty level, test scores and English language skills. Instead of using that so-called diversity index, the board decided that children will be assigned using the same method as for the 1999-2000 school year. Priority will be given to children who live near a school, have a sibling enrolled at a campus or who live in certain ZIP code... Until a year ago, school enrollment was governed by ethnic quotas stemming from the NAACP suit."

Hendrie, C. (1999, Feb. 24). San Francisco desegregation decree to end. *Education Week.*

"San Francisco school officials agreed last week to stop using race and ethnicity as determining factors in assigning students to school... The district will also drop racial-balance guidelines that limit the proportion of students from any single racial or ethnic group to 40 percent at 'alternative' or magnet schools that draw students from around the city, and to 45 percent at other public schools."

Kahlenberg, R. D. (2007). *Rescuing Brown v. Board of Education: Profiles of twelve school districts pursuing socioeconomic school integration*. NY: Century Foundation.

"In April, 2001, the San Francisco School Board adopted a new student assignment plan, which replaced a racial desegregation scheme with one that seeks socioeconomic diversity. Under the new plan, the district began using a seven-part definition, including

socioeconomic status (has the student participated in free/reduced lunch, Calworks, or public housing?); academic achievement (has the student scored below the thirtieth percentile on Stanford 9?); mothers educational background (has she had post–high school education?); student's language status (limited English or not proficient?); quality of students prior school (lowest ranking in California Academic Performance Index?); students home language (other than English?); and residence in different geographic area.

…San Francisco has a 100 percent choice system, and students apply to schools at the beginning of elementary, middle, and high school, rather than being assigned based on the neighborhood in which they live… At the same time, 81 percent of families get receive one of their choices of schools, 63 percent their first choice…"

CO, Denver: Neighborhood in 1996

McQuillan, P. J., & Englert, K. S. (2000). Return to neighborhood schools, concentrated poverty, and educational opportunity: An agenda for reform. *Hastings Constitutional Law Quarterly*, *28*, 739-770.

"In Denver, Colorado federal courts declared the city school system unitary in 1996 after busing students for over twenty years. Busing was halted for elementary schools that year and for secondary schools the following year" (p. 739).

Keyes v. School District No. 1, Denver, 902 F. Supp. 1274 (1995)

"The Colorado Constitution does not prohibit all busing. What is prohibited is assignment and transportation of public school pupils according to a preconceived plan of racial mixture."

DE, Brandywine: SES in 2002

Delaware State Board of Education (2002, March 28). *Decision. In Re: Neighborhood School Plans of Delmar, Seaford, Appoquinimink, Colonial, Christina, Red Clay Consolidated and Brandywine School Districts.*

"The boundaries of the attendance areas in the Brandywine Plan continue to be primarily a function of existing school capacity and of the neighborhoods in which the schools sit. (Brandywine X- 36-37). The boundaries have also been adjusted to account for poverty. Using household income data, students living in the District's poorest neighborhoods are assigned to attend schools in wealthier, usually suburban, areas. (Brandywine X-36-37). Because poverty within the District is concentrated in the City of Wilmington, City students in grades K-3 are assigned to attend schools in the suburbs. (Id.; Voter's Guide at page 14.) Two of the District's three intermediate schools are located in the City. As a result, most City students are assigned to their neighborhood school in grades 4-6; students in the District's north-west suburbs attend school in the City for these grades. Middle and high school assignments follow a similar pattern, with students from the City's low-income neighborhoods attending schools in the suburbs. (Id.) Adjusting attendance areas for poverty allows the District to maintain the FRL percentage in each of its schools to a range of 16 to 47% of the school's student population" (p. 51).

Kahlenberg, R. D. (2007). *Rescuing Brown v. Board of Education: Profiles of twelve school districts pursuing socioeconomic school integration*. NY: Century Foundation.

> "In 2000, however, the Delaware State legislature passed the Neighborhood Schools Act, mandating neighborhood school assignments and prohibiting student assignment based on race. Brandywine responded by proposing to the state board, in November 2001, that the school district be allowed to use a flexible student assignment plan which would keep all schools between 16 percent and 47 percent low income, as opposed to a neighborhood assignment plan which would have increased ranges from 6 percent to 73 percent low income… In March 2002, the Delaware State Board of Education approved Brandywine's non-neighborhood assignment plan as a justified exception to a state law generally favoring neighborhood schools."

DE, Christina: SES in 2002; Neighborhood in 2008

Delaware State Board of Education (2002, March 28). *Decision. In Re: Neighborhood School Plans of Delmar, Seaford, Appoquinimink, Colonial, Christina, Red Clay Consolidated and Brandywine School Districts.*

> "As part of its plan, Christian replaced a June 1996 policy that balanced student population by racial compositions with revised Student Enrollment Guidelines that require school populations to be within plus or minus 20% of the district's average socioeconomic status ratio for the grades offered at the school" (p. 27).

Delaware State Board of Education (2003, March 20). *Decision and Order: Appoquinimink, Christina School Districts Resubmitted Neighborhood School Plans. In Re: Neighborhood School Plans of Delmar, Seaford, Appoquinimink, Colonial, Christina, Red Clay Consolidated and Brandywine School Districts.*

> "There is no indication that the Preferred Plan assigns any student to school on the basis of race, or considers the racial composition of the schools in making student assignments. The Preferred Plan does modify student assignment policies to create school populations that are within plus or minus 20% of the District's average socioeconomic status ratio for the grades offered at the school (p. 15)."

Delaware State Board of Education (2008, Feb. 21). *Decision: In Re: Neighborhood School Plans of the Christina School Districts.*

> "Christina's proposed attendance zones for assigning students to its elementary schools are a function of geographic distance, natural neighborhood boundaries, and capacity of the schools. Where, however, to do so would result in overcrowding or under-utilization, the District has attempted to balance enrollment to take into consideration these concerns and allow some space for growth at each site. If all students were assigned to the elementary school closest to their home, for example, Leasure and Marshall Elementary Schools would be at 155% and 215% of capacity respectively while McVey and Jones would be at 41% and 48% respectively" (pp. 10-11).

DE, Colonial: Neighborhood in 2001

Delaware State Board of Education (2002, March 28). *Decision. In Re: Neighborhood School Plans of Delmar, Seaford, Appoquinimink, Colonial, Christina, Red Clay Consolidated and Brandywine School Districts.*

> "The Plan's K-5 grade configuration and attendance areas were implemented this school year, in September 2001, with the opening of Southern Elementary" (p. 20). "Once target enrollments were set for each school, the District began drawing attendance areas, beginning with schools where closest-to-home assignments and neighborhood boundaries were easily identifiable" (p. 21). "The District's Plan eliminates bus rides for some students, and reduces it for others" (p. 22).

DE, Red Clay Consolidated: Choice in 1995

Delaware State Board of Education (2002, March 28). *Decision. In Re: Neighborhood School Plans of Delmar, Seaford, Appoquinimink, Colonial, Christina, Red Clay Consolidated and Brandywine School Districts.*

> "(T)he District's existing choice program guarantees every student a seat in their feeder pattern school, yet is still able to accommodate the school preferences of most students filing choice applications" (p. 43). "Red Clay's Neighborhood School Plan relies entirely on a choice system to decide where students will go to school. Geography plays a role in the process, but it is geography based on feeder patterns rather than a closest-to-home analysis… the District would only 'assign' students to schools when they do not submit a choice application. Choicing students are guaranteed only that they will receive a seat in their feeder pattern school: by definition, this will not be the closest school to their homes for at least some grades" (p. 44).

Other sources (Summary of several articles of Delaforum). Retrieved from http://www.delaforum.com/ARCHIVE/Archive%20contents.htm

> Students have been required to choose high schools since 1995, and no one has been denied his or her first choice. At the high school level, where enrollment has been under the choice plan for several years, all students who apply on time get their first choice. The choice programs has also applied to elementary students since 2001. The General Assembly in DE in the 1990s enacted a law which permits students and parents to attend any public school in the state.

FL, Broward County: Neighborhood in 1995

Hirschman, B. (1995, July 4). School busing in court's hands, Attorneys ask judge to evaluate district's desegregation efforts. *Sun Sentinel*. Retrieved from http://articles.sun-sentinel.com/1995-07-04/news/9507040023_1_district-s-desegregation-desegregation-lawsuit-desegregation-policies

> "The motion rejects the School Board's June 20 vote to stick with a plan that would take three years to eliminate all starbursting - the practice of busing black children from one neighborhood to as many as eight different schools to further desegregation. Starbursting affected 5,454 children in 19 neighborhoods being bused to 64 schools, school records

show… The School Board in recent months took steps to bring about 1,700 of the starburst children home to neighborhood schools next year."

Talalay, S. (1995, Dec. 6). Finally, a plan to end Starbursting, Groups: Black students should get to choose schools. *Sun Sentinel*. Retrieved from http://articles.sun-sentinel.com/1995-12-06/news/9512060023_1_neighborhood-schools-new-middle-school-school-board

"For the first time in a quarter of a century, all black children in Broward County would be allowed to return to neighborhood schools next year, under recommendations by community groups released on Tuesday. The school boundary recommendations would end starbursting, the practice of scattering black children from one neighborhood to desegregate several far-flung schools. The proposals, which are in line with a School Board promise to end the practice known as starbursting, would allow black students to attend their assigned schools or to return to their neighborhood schools."

Citizens concerned about Our Children v. Broward, 966 F. Supp. 1166 (1997)

"The School Board claims that it has ended both the practice of starbursting and the practice of assigning children to magnet programs on the basis of race..."

Hendrie, C. (1998, June 10). New magnet school policies sidestep an old issue: Race. *Education Week*.

After a federal judge unexpectedly ended the 224,000-student district's desegregation order in 1996, officials scrambled to devise a less race-conscious policy for magnet schools that they felt would stand up in court. They came up with a plan in which half the slots in programs with more applicants than seats are filled through a strictly random lottery. Then a second drawing is held in which students from groups that were underrepresented in the first lottery are given extra chances. The categories considered include not just race and ethnicity, but also socioeconomic background, special needs, and English fluency.

FL, Duval County: Neighborhood in 1991

Jim Saunders, J. & MacDonaldm M. (1997, July, 22). Schools, NAACP: Opening shots. *The Florida Times-Union*. Retrieved from http://jacksonville.com/tu-online/stories/072297/2b1deseg.html

"Former Superintendent Larry Zenke is expected to testify that the school system has made progress by using magnet schools, which offer specialized programs that try to attract students to schools outside their neighborhoods. The magnet schools, part of the 1990 agreement, replaced Duval County's former system of involuntary busing."

NAACP v. Duval, Case No. 85-316-Civ-J-10C (1999)

"The District shall be administratively divided into seven zones. In zones I-V, the parties agree that, commencing with the 1991-92 school year, each school shall have as its desegregative goal the enrollment of at least 20% black students and 45% white students [that is, a black student enrollment of 20% to 55%]. In zones VI and VII, the district plans to operate each school within +/- 10% of the zone-wide racial composition at its

grade organizational level. The district shall take steps to the maximum extent practicable to achieve these goals. (Doc. 86, P 3, 4).

Zones I through V, as configured by the Board pursuant to this mandate, comprise the majority of the geographic area of Duval County and contain the most schools. Zones VI and VII are located in the outer geographic areas of the County -- the beaches area and the far west section. The Board created and implemented all seven attendance zones at the beginning of the 1990-91 school year, and they remain in use today. The zoning requirement of the Agreement has therefore been met.

In addition to establishing attendance zones, the parties agreed to define percentage goals for the racial composition of the student body at each elementary school. Specifically, for schools located in Zones I through V, the Agreement set a goal of at least 20% and no more than 55% black enrollment. In the 1990-91 school year, the first year of the Agreement's operation, 88 elementary schools were located in Zones I through V. Of these schools, 27 enrolled a student population that was more than 55% black. See Def. Exh. 96. The following school year, in accordance with the Agreement, the Board eliminated its system of mandatory busing and implemented its magnet programs. That year, the number of elementary schools located in Zones I through V with a black student enrollment in excess of 55% increased from 27 to 30, a circumstance that must surely have been within the contemplation of the parties as a natural consequence of the elimination of mandatory busing."

FL, Hillsborough County: Choice in 2004

Ave, M. (2003, Nov. 15). School choice debuts. *St, Petersburg Times*. Retrieved from http://www.sptimes.com/2003/11/15/Hillsborough/School_choice_debuts.shtml

"The choice plan, an alternative to assigning children to neighborhood schools, will eventually end three decades of busing for desegregation. It begins next fall, in the 2004-2005 school year, but families must make their choices in the next two months if they want to participate. Its main purpose? To keep schools racially diverse without busing. Applications and 11-page booklets will be mailed next week to the 50,000 students eligible to participate in the choice plan's inaugural year, about one-third of the county's 180,000 enrollment. Though most students don't have to choose, thousands are eligible. Most students can stay at their current schools without filling out an application. The only ones who must indicate whether they are staying or going elsewhere are the 14,000 who are bused for desegregation. If they don't, school officials will pick one for them. The goal is for black children to pick schools in white neighborhoods and white children to attend schools in black neighborhoods because of special course offerings such as magnet programs. The plan pairs seven regions, which are large, mostly suburban and rural areas, with corresponding zones - urban areas from which minority children have been bused in the past. The plan offers school choice to students of neighborhood schools in zones if they are entering kindergarten, sixth and ninth grades. And it lets students of all grades choose if they live in urban 'zones' and attend neighborhood schools or live in satellite areas and have been bused for desegregation… Students are not guaranteed their first

choice, but will be assigned by a computerized lottery based on where they live and space available in their chosen schools. Race will not be a consideration, but preference will be given to students who live in regions who apply to zone schools and zone students who apply to region schools."

Ave, M. (2005, June 23). Board broadens school choice. *Tampa Bay Times*. Retrieved from http://www.sptimes.com/2005/06/23/Hillsborough/Board_broadens_school.shtml

"Until now, the opportunity to choose a school within a certain region was available only to incoming suburban kindergarteners, sixth-graders, ninth-graders and all students living in urban neighborhoods. The expanded plan goes into effect in 2006-07, but can only be used at schools with available space. The application period will run from Oct. 3 to Dec. 12. A random computerized lottery will assign children to schools."

FL, Lee County: Choice in 1998; Neighborhood in 2005

Willie, C. V., Edwards, R., & Alves, M. J. (2002). *Student diversity, choice and school improvement*. Greenwood Publishing Group.

"Lee County launched a comprehensive Controlled Choice plan in 1998… The student assignment plan is designed to give parents the opportunity to make selections from a wide range of school offerings. The plan is phased in through kindergarten in elementary school, grade 6 in middle school, and grade 9 in high school. The Lee county School District is organized into three large geographic choice zones: West Lee County, South Lee County, and East Lee County. Each zone contains several elementary schools, two to four middle schools, and two to three high schools… Parents and students list their preferences, in rank-order within their choice zone and for district-wide magnet schools. Students are assigned to schools where space exists and according to racial and ethnic diversity guidelines, sibling and proximity preferences are honored" (pp. 9-10).

St. Petersburg Times. (2005, Jan. 29). *Reflecting on Choice*. Retrieved from http://www.sptimes.com/2005/01/29/news_pf/Opinion/Reflecting_on_choice.shtml

"Lee County, which began its choice plan before Pinellas, was removed from court supervision this year… Lee's choice zones were further subdivided in an attempt to reduce busing costs and give families more choices close to home. Lee will have nine subzones... Lee also gives a neighborhood preference to every family within roughly two miles of a school... Most significantly, Lee will continue to use racial ratios in assignment… Says Lee planning director Mike Smith: 'There is nothing legal or illegal about it. If we're challenged, we'll deal with it then.'"

The School Board of Lee County. (n.d.). *Plan for student assignment.*

"The Plan continues to use choice as the heart of the student assignment method. It responds to the clear desire of some Lee County families to have more school options closer to home and to avoid being required to have their child attend a school distant from home. By dividing the large Choice Zones into smaller sub-zones, The Plan responds to the desires of many families to reduce the ride time for their children… The District began implementation of The Plan in the Fall of 2005 for the 2005-06 school year. As required, the District has reviewed the success of The Plan in each year of

implementation. For example, changes made in the implementation of The Plan for 2006-07 provided the possibilities for waiving the non-contiguous sub-zone assignment principle under certain circumstances and implemented the sub-zone preference as an additional assignment factor" (pp. 9-10).

St. Petersburg Times. (2005, Jan. 29). *Reflecting on Choice.* Retrieved from http://www.sptimes.com/2005/01/29/news_pf/Opinion/Reflecting_on_choice.shtml

"Lee also gives a neighborhood preference to every family within roughly two miles of a school; Pinellas' preference is a fraction of that. Most significantly, Lee will continue to use racial ratios in assignment. Pinellas, at the instruction of its board attorney, will not."

FL, Orange County: Neighborhood in 1996

Orlando Sentinel. (2014). *Orange County desegregation timeline.*

"(1996) Orange County wins court approval in July to stop busing more than 3,700 students, many of them black. The move makes four schools essentially all-black again. About 2,000 students continue to be bused under court order."

Sneed, M. (2008, May). *Unitary status: A process, Orange County Public Schools Governance Committee* [PowerPoint slides]. Hogan & Hartson LLP. Retrieved from https://www.ocps.net/sb/Documents/May%2014%20OCPS%20Unitary%20Status%20Presentation.pdf

"June 1996 order approved rezoning to reduce busing and island zones (slide 8)."

"In 1996, OCPS informed the Court of initiatives that would be implemented as four schools impacted by rezoning (slide 28)."

Hobbs, E. (2010, Jan. 26). Historic moment: Orange school board approves desegregation settlement. *Orlando Sentinel.*

"The agreement leaves many desegregation-era practices -- such as cross-town busing -- in place and focuses heavily on upgrading the technology and buildings of old schools in black neighborhoods… Under the plan, the School Board will agree to rush the renovations of 17 schools, most of them in low-income black neighborhoods, and vow not to close them unless an emergency situation warranted it. The board also promised to set new recruitment goals for hiring minority teachers, while actively ensuring equal access to all of its extracurricular activities."

FL, Palm Beach County: Choice in 2000

Edwards, K. I., Hudnell, I. E., Newton, M. S. & Raing, D. G. R. (2004). Historical timeline of black education in Palm Beach County Florida. *The Ipet-Isut Historical Preservation Foundation.* Retrieved from http://www.palmbeachschools.org/sc/AfricanAmericanStudies/documents/BrownvBoardPBCTimeline.pdf

"(1989) Palm Beach County creates magnets at S.D. Spady Elementary and Atlantic High schools in Delray Beach, Suncoast High in Riviera Beach and the School of the Arts in West Palm Beach.

(1990) The Supreme Court rules that districts may end forced busing... It gives the county two years to fix the problem, then extends the deadline to 1995. The Office for Civil Rights notifies the Palm Beach County School District that it was 'in violation of Title VI as it relates to the assignment of students to schools and the provision of educational services at predominantly Black schools.' Magnet programs are established to correct the violation.

(1991) Palm Beach County School officials unveil programs to create integrated neighborhoods so schools can become racially balanced without busing.

(1999) The Office for Civil Rights stops monitoring schools in Palm Beach County, saying the district had taken appropriate steps.

(2000) The District's open enrollment plan was implemented as the 'Riviera Beach Community Choice' Plan.

(2002) Palm Beach County school district stops busing Black students from Delray Beach and Boynton Beach into the suburbs, eliminating the last remnant of the 1970s desegregation efforts."

Barszewski, L. (1994, Nov. 18). 'Controlled choice' school plan debated. Linking West Boca, Delray students could give area required black percentage. *Sun Sentinel.* Retrieved from http://articles.sun-sentinel.com/1994-11-18/news/9411171059_1_choice-program-palm-beach-county-school-district

"If 'controlled choice' comes to Palm Beach County schools, children in the Delray Beach and Boca Raton areas could be choosing from among schools up to 20 miles from their homes. The choice would give parents a range of options about where to send their children, but there is no guarantee they would get their first - or even fifth - choice. The school district is considering creating a controlled choice program over the next five years to satisfy a 1990 desegregation agreement with the federal Office for Civil Rights… Palm Beach County is not under a court order, and it buses only about 6,000 of its 126,000 students for integration reasons… The current proposal would divide the county into four or five geographic zones, each having black student populations of between 18 percent and 38 percent. By linking schools west of Boca Raton with those in Delray Beach, the district would just barely clear the 18 percent hurdle. The 22 schools in the Delray Beach-Boca Raton area have 5,163 black students and an overall student population of 27,745, which makes the area's student population 18.6 percent black. One of the ideas behind controlled choice is to improve programs at all schools as they compete for students, Zabik said… The proposal calls for an International Baccalaureate program at Glades Central High School, which officials said would draw white students from the Wellington-Royal Palm Beach area."

Travis, S. (2014, March 8). Palm Beach County schools consider full choice. *Sun Sentinel.* Retrieved from http://articles.sun-sentinel.com/2014-03-08/news/fl-palm-school-choice-20140305_1_choice-programs-choice-schools-palm-beach-county-schools

"The district's choice programs, formerly known as magnet programs, were created in the 1980s specifically for desegregation… Students are assigned to neighborhood schools but can also apply to more than 52 other schools, including the high-performing Nova schools; College Academy, which offers all college-level courses; and Dillard High, which offers arts and finance academies."

FL, Pinellas County: Choice in 2003; Neighborhood in 2007

Hegarty, S. & Oppel, S. (1998, Aug. 16). Federal oversight tough to end. *St. Petersburg Times*. Retrieved from http://www.sptimes.com/SouthPinellas/81698/Federal_oversight_tou.html

> "If oversight ends, the School Board has said it will end busing for desegregation. But that doesn't mean all busing would end. About 42 percent -- or 45,851 -- of Pinellas students in pre-kindergarten through 12th grade are bused to school. But only 14 percent of them, or 6,419, are bused to meet race ratios; the majority ride for other reasons, such as distance or hazardous walking conditions..."

Bennett, K. (2003). Pinellas school desegregation: A chronology. *St. Petersburg Times.* Retrieved from http://www.sptimes.com/2003/05/21/Tampabay/Pinellas_school_deseg.shtml

> "Oct. 25, 2000: The School Board approves a choice plan that will end traditional school zoning in the 2003-04 school year. It votes to split the county into four areas for elementary schools, three areas for middle schools and one for high schools. Students will apply to attend a school in their area."

Logan, M. (2004, April 2). District pleased with school choice result. But only a fraction of those eligible for the controlled choice program decide to attend new schools. *St. Petersburg Times.* Retrieved from http://www.sptimes.com/2004/04/02/Hillsborough/District_pleased_with.shtml

> "Hillsborough's choice plan, unlike the one in Pinellas County, does not ask students to apply to attend the school near where they live."

St. Petersburg Times. (2005, Jan. 29). *Reflecting on Choice.* Retrieved from http://www.sptimes.com/2005/01/29/news_pf/Opinion/Reflecting_on_choice.shtml

> "Pinellas, by contrast, has almost twice the number of students and only one zone for high schools. Lee also gives a neighborhood preference to every family within roughly two miles of a school; Pinellas' preference is a fraction of that. Most significantly, Lee will continue to use racial ratios in assignment. Pinellas, at the instruction of its board attorney, will not."

St. Petersburg Times. (2007, June 29). *Racial Integration in Pinellas and Hillsborough Schools.* Retrieved from http://www.sptimes.com/2007/06/29/Southpinellas/Racial_integration_in.shtml

> "(2003) The choice plan begins. For the first four years, it will be very much like the old busing plan, with a rule that no school is more than 42 percent black. The first four years are called 'controlled choice.'
>
> (2007) Controlled choice ends in May, and for the first time since 1971, the district will not use race when assigning students to schools. School officials begin work on a new plan."

FL, Polk County: Choice in 1992

Bridges, C. (n.d.). *Polk County Schools Magnet/Choice Enrollment Plan* [PowerPoint slides]. Office of Magnet, Choice and Charter Schools. A Magnet School Assistance Program (MSAP) Project. Retrieved from http://www.polk-fl.net/districtinfo/departments/schoolbased/schoolchoice/documents/SiblingOptions120611.pdf

> In the 1980s, the district used fixed attendance zones within municipal areas (slide A3). Since the 1990s, the district has expanded magnet and choice schools using large attendance zones and implemented controlled open enrollment (slide A3). According to a 1992 consent order (slide A5), eight magnet schools were created in four Polk County geographic areas. Students were admitted to magnet schools by choice within larger attendance zones, but student selection was controlled to achieve desegregation. Admission was determined via lottery, and there were no prerequisite admission requirements. The district practiced limited neighborhood priority to maximize minority student school choices. Student transportation was provided by school district to support diverse enrollment. By the 2000 final order, the district opened new middle and elementary schools in Winter Haven and completed permanent arts facilities at Jewett School of the Arts (slide A6).

Dunn, A. (2004, May 17). Historic school ruling issued 50 years ago. *The Ledger*. Retrieved from http://www.theledger.com/article/20040517/NEWS/405170379?p=4&tc=pg

> "Today, Polk County tries to maintain racial balance with a goal of keeping black enrollment at each school between 15 percent and 40 percent."

GA, Muscogee County: Neighborhood in 1992

Lockett v. Muscogee, 111 F. 3d 839 (1997)

> "Toward the end of the 1970s, the school board began reducing the number of student reassignments and attendance zone adjustments… By the mid-1980s, the racial compositions within many of the schools were disproportionate with the county-wide student racial composition, and by 1991, several racially identifiable schools existed…
>
> (T)he school board implemented a neighborhood-school plan that eliminated cross-district busing and called for students to be assigned to local neighborhood-schools. The school board also proposed magnet programs and majority-to-minority transfer programs to off-set any negative impact that the neighborhood assignment plan might have on racial composition within the schools… (T)he school board implemented a majority to minority transfer program in 1992 to offset any racial impact that the neighborhood assignment plan could have."

IN, Fort Wayne: Choice in 1988

U.S. Commission on Civil Rights. (1979). *Equal opportunity in Fort Wayne Community Schools: A reassessment.* Retrieved from http://www.law.umaryland.edu/marshall/usccr/documents/cr12sch625.pdf

> "The settlement provided that no children would be involuntarily bused although optional elementary school transfers would be encouraged. In addition, magnet schools would be created… some aspects of the settlement agreement have been implemented, in particular the voluntary transfer plan" (p. 5). "In a December 1977 settlement agreement, the FWCS agreed not to transfer involuntarily any student to a school outside his or her usual attendance area for the purpose of achieving racial balance in the elementary grades, but did agree to open magnet schools in the central city" (p. 15).

Parents for Quality Education with Integration Incorporated v. Fort Wayne, 728 F. Supp. 1373 (1990)

> "The racial balance plan will rely primarily on voluntary methods... In establishing and maintaining magnet schools, FWCS will retain neighborhood attendance areas for the purpose of giving priority in admission into a magnet school to children of that attendance area. Such priorities are subject, however, to the dominant concerns of affording parents choices based on interest and maintaining racial balance in the magnet schools. Any child displaced by creation of a magnet school will be given priority into any other magnet school or program. FWCS will provide aggregate openings in its magnet schools to black students at least proportionate to the number of black students in the elementary schools… No admission requirements will be imposed for entrance to magnets, other than interest and racial balance considerations…

> The system-wide racial balance goal is 15 percent to 45 percent black (and 55 percent to 85 percent white) but full compliance and performance will be deemed to exist so long as no school falls below the 10 percent black range and no more than three schools fall into the 45 percent to 50 percent black range…

> *Fall 1988:* MAP 1. Croninger and Young converted to magnet schools; magnet programs instituted at Waynedale and Franke Parke; Memorial Park closed.

> *Fall 1989*: MAP 2. Irwin converted to magnet school, and magnet programs instituted at Price, Holland and Washington Center schools.

> *Fall 1990*: MAP 3. Bunche or Ward converted to a magnet school, and three magnet schools or programs instituted at predominantly white schools.

> *Fall 1991*: MAP 4. Remaining predominantly black school, Ward or Bunche, converted to magnet school, and additional magnet programs instituted at remaining predominantly white schools, as necessary to meet the racial balance goals specified in Section 6."

IN, Indianapolis: Neighborhood in 1999

Wilma L. M. (2011). *Indianapolis public schools desegregation case collection, 1971-1999.* Collection #0749. William Henry Smith Memorial Library. Retrieved from

http://www.indianahistory.org/our-collections/collection-guides/indianapolis-public-schools-desegregation-case.pdf

> "In June 1998 a settlement was reached between IPS, suburban township schools, and government agencies when Dillin approved an agreement that would phase out busing of inner city black students to township schools by 2017… Within the school systems in townships with an African American population of 20% or more, the phase-out would begin in the fall 1999. School systems in townships less than 20% African American would begin phase-out in the school year, 2004–05."

Hendrie, C. (1998, July 8). In Indianapolis, Nashville, a new era dawns. *Education Week.*

> "In Indianapolis, the busing of some 5,500 black students from the inner city to nearby suburbs will be phased out one grade per year under the deal approved by U.S. District Judge S, Hugh Dillin… For at least one of the six suburban districts involved in the transfer program, the 13-year phaseout will start in the fall of 1999."

KS, Kansas City: Neighborhood in 1997

United States v. Kansas City, 974 F. Supp. 1367 (1997)

> In 1997, Kansas City adopted redistricting and district improvement plans. The redistricting plan eliminated the three sets of paired elementary schools so that students in those attendance areas could attend their neighborhood schools. It also eliminated middle and high school non-contiguous attendance boundaries in the northeast area so that students assigned to 'pure' feeder patterns from elementary to middle to high school. It eliminated racial balance transfers at the middle school level and changed eligibility standards for such transfers for elementary students. New magnet schools were also built.

> "1. Designates the Wyandotte High School cluster (Wyandotte High School, Central and Northwest middle schools, and Banneker, Chelsea, Douglass, Fairfax, Hawthorne, Mark Twain, M.D. Pearson, Roosevelt, and Whittier Elementary Schools) as the first set of schools for implementation of First Things First and a project emphasizing mathematics, science, and technology. Other schools, by cluster, will follow over a three-year period. The Wyandotte High School science lab, along with science labs in the other high schools in the district, will also be remodeled to meet the rigorous standards of a revised curriculum.

> 2. Transforms Banneker Elementary School into a magnet school emphasizing science and technology in order to attract a more diverse student body.

> 3. Establishes, by the year 2000, a magnet program at Northwest Middle School. This program is designed to supplement the magnet properties of the Banneker magnet program and, together with Wyandotte High School, provides an integrated science and technology curriculum from K-12, Banneker through Wyandotte.

> 4. Eliminates the three sets of 'paired' elementary schools - Banneker and M.E. Pearson; Douglass and Frances Willard; and Grant and John Fiske. Students in those attendance areas will now attend their neighborhood schools. Banneker will

be transformed into a science and technology neighborhood/magnet school. Douglass will continue its participation in the Basic Schools program, enhancing the educational opportunities for those students. Through redistricting, Grant will become an integrated, and indeed racially balanced, neighborhood school.

5. Eliminates middle and high school non-contiguous attendance boundaries in the northeast area. Throughout the District, students will be assigned to 'pure' feeder patterns from elementary to middle to high school…

8. Eliminates racial balance transfers at the middle school level and changes eligibility standards for such transfers for elementary students."

KS, Wichita: Neighborhood in 2008

Wegbreit, D. (2008, Apr. 1). Wichita, Kan., to end desegregation busing. *School Transportation News*. Retrieved from http://www.stnonline.com/resources/government/related-government-articles/1674-wichita-kan-to-end-desegregation-busing

> "Starting this fall, students formerly bused out of the predominately African-American area in the northeast part of the city will be assigned to new schools in their neighborhood. The district will also dismantle a lottery system that bused some white students to the predominantly African-American area for one year of elementary school. Both groups will be allowed to continue attending their original schools — with transportation — for the remainder of their time in the district. Darren Mucci, division director of operations, said the district decided to end the program it had voluntarily established in 1971 after hearing the Supreme Court ruling in the Seattle and Jefferson County, Ky., school assignment cases…

> Under the tentative plan, 16 of the 27 magnets are 'neighborhood magnets,' meaning they allow all students to attend but reserve as many as half of seats for neighborhood students. Of these, four are in the predominantly African-American area. According to the district spokesman Susan Arensman, the district has no plan to redraw these boundaries as part of their post-desegregation plan. But if the district does not look at either redrawing boundaries or giving all students equal access to all the magnet schools, Myles said future generations of Wichita students could have segregated educational experiences like the 'hyper-segregated' Cleveland schools he attended.

> According to Wendy Johnson, a district spokeswoman, desegregation busing was a small part of the district's transportation operation. Of the 19,500 daily riders, fewer than 2,100 students — 1,570 African American and 500 Caucasian — were bused this year due to the desegregation plan. Far more — 6,200 — were bused to magnets. Proponents of the plan say these magnets will be the main tool in the diversity that existed under the old program."

KY, Jefferson County (Louisville): Rezoning/Pair in 1975; Neighborhood in 1991; SES 2008

Orfield, G. (2014). Foreword. In Niemeyer, A. (2014). The courts, the legislature, and Delaware's resegregation. A report on school segregation in Delaware, 1989-2010. Report. The Civil Rights Project. Retrieved from http://civilrightsproject.ucla.edu/research/k-12-education/integration-and-diversity/courts-the-legislature-and-delawares-resegregation/niemeyer-courts-legislature-delaware-school.pdf

> "..one of the only two states where the federal courts ordered a district merger and full desegregation of what had been separate school districts in a large metropolitan area, Wilmington [in Delaware] became a test of the possibility and durability of city-suburban desegregation policies… This happened in only one other major metropolitan area— Louisville-Jefferson County, Kentucky… In fact, the district and community remain so committed to desegregation that they recently came up a new plan when the Supreme Court overturned the former one" (p. 6).

Hampton v. Jefferson, 72 F. Supp. 2d 753 (1999)

> "In 1991, the Board eliminated the alphabet plan and mandatory busing entirely and instituted a student choice system. See Stipulated Exhibit # 19, Detailed Description of the District's Managed Choice Student Assignment Plan, at 1 (not dated). In 1996, the Board adopted the current plan… A lengthy process of expert consultation and public input shaped formulation of the 1996 'managed choice' plan.
>
> The 1996 'managed choice' plan which allowed students to choose from schools near their homes subject to the receiving school's capacity, as long as such assignment would not cause the school's percentage of black students to fall below 15% or rise above 50%. The racial guidelines influence several points of the student assignment process. First, the guidelines shape attendance boundaries that determine 'resides' areas. Each student has a 'resides school' serving his or her home address. This school is the default school for assignment purposes. The Board assigns a student to the resides school unless: (1) the student gains admission to another school through the application process, (2) the student has a special programmatic need, (3) the student's resides school is at capacity, or (4) the 'student's placement would cause the resides school to be out of compliance with the District's racial composition guidelines.'"

Day, R. (2012, Aug. 21). No JCPS neighborhood school ruling today. *The Courier-Journal.* Retrieved from http://theprincipal.blogspot.com/2012/08/no-jcps-neighborhood-school-ruling-today.html

> "The board adopted a new plan in 2008 that looked at race, income, and education levels of students' neighborhoods when assigning children to schools. But it has spent the past four years making changes to that plan after hearing numerous complaints from parents over long bus rides and the lack of access to neighborhood schools."

Maxwell, L. A. (2014, May 14). Ky. district 'keeps faith' on school desegregation. *Education Week.*

> "The goal in Jefferson County is to ensure that all 155 schools hit a mark that falls within the district's diversity index, which means, ideally, that no school will be filled with too many children from a Category 1 census block, which has higher-than-average numbers of nonwhites, poor families, and adults who didn't graduate from high school or go on to

college. Currently, 95 percent of schools fall within the diversity index set by the school board, Mr. Rodosky said."

LA, Caddo Parish: SES-Voluntary in 2006

Cavalier v. Caddo, 403 F.3d 246 (2005)

> The use of race in magnet school admission decision was ruled unconstitutional. The district did not achieve unitary status in terms of other student assignment (such as voluntary majority-to-minority transfer) but achieved unitary of magnet schools in 2000.

Hendrie, C. (2005, March 23). Appeals court rejects district's magnet policy. *Education Week*.

> "A federal district court had ended its oversight of the magnet school in 1990, the appellate majority found, even though the district as a whole was not declared 'unitary,' or free of the remnant of its segregated past."

Caddo Parish School Board. (n.d.). *Student assignment processes and policies.*

> Caddo removed race consideration in magnet admission but started considering socioeconomic factors beginning at Oct. 2005. Race is still used for the majority-to-minority voluntary transfer.

LA, East Baton Rouge Parish: Neighborhood in 1996; SES in 2007

Stone, F. A. (1992). *Public school desegregation/redesign: A case study in East Baton Rouge Parish, Louisiana*. Urban Education Reports Number Fourteen. Connecticut University.

> "(T)he cluster system was established by Judge John Parker's 1981 court order. It created ten clusters made up of thirty-five schools in EBRP. The clusters are groups of three or four schools that have been brought together. The aim is to get white students to attend predominantly black schools, and blacks to go to formerly all-white institutions. A black child in Eden Park, for example, could be bused to Broadmoor, a school in a white neighborhood. Travel in the reverse direction could also be mandated" (p. 70).

Watson, J. E. (2002). Quest for unitary status: The East Baton Rough Parish School Desegregation Case. *Louisiana Law Review*, *62*(3), 953-989.

> "On August 2, 1996, the district court approved the 1996 Consent Decree after both the Board and the plaintiffs agreed to the provisions of the new plan... the new plan contained eight major provisions, including provisions addressing community sensitive attendance zones and facility enhancements at 'racially identifiable schools'" (p. 956). "Under the 1996 Decree, the Board has a duty to open and maintain thirty-three magnet schools, advertise these magnet schools, increase their minority enrollment, and fund this program with a minimum of 5.7 million dollars" (p. 974).

Cowen Institute. (2010). Louisiana desegregation case studies: East Baton Rough, West Carroll, and Tangipahoa. *Tulane University*. Retrieved from http://www.coweninstitute.com/wp-content/uploads/2010/08/Louisiana-Desegregation-Case-Studies.pdf

"1981-1996: Desegregation through mandatory busing… This plan remained in effect until 1996… In 2003, both the Baker and Zachary communities split from EBRPSS to form their own school systems. Likewise, the Central Community left the EBRPSS to form its own school system in 2007. The new Central Community School District took a sizeable proportion of EBRPSS's white students, decreasing the percentage of white students in EBRPSS to 11% in the fall of 2007. And, since the district is no longer under a desegregation order, the remedies available to the district to maintain racial balance are limited. By law, a district no longer under a desegregation order is prohibited from using racial quotas or any other racial criteria to maintain desegregation (EBRPSS had been using racial criteria to ensure diversity within its magnet schools). However, in an effort to maintain diversity, the district currently uses socioeconomic status in magnet school admissions criteria. Additionally, although the school board freed itself from the federal court's restrictions, the state of Louisiana has found the board's management of the district to be unsatisfactory. Currently, the state runs seven charter schools within the district, has management agreements with four schools, and has memoranda of understanding with another three schools" (pp. 2-4).

LA, Jefferson Parish: Choice in 2009

Jefferson Parish Public Schools. (2008, September). Proposed plan for schools for advanced study; Jefferson Parish Public Schools. (2008, October). Proposed amendment to the elementary school portion of the magnet school plan.

> In July 2008, JPPSS school board created a policy consistent with the expectations outlined in the Dandridge Court Order, and the Compliance Office mirrored the same actions by aligning its operating procedures with the policy.

> Some schools were gradually transformed into magnet schools (Hazel Park, Rupple, and Metairie) beginning from 2009 school year. In deciding admission to magnet schools, students' race was considered. The school district's east bank and west bank had different racial composition, so building schools in either side altered school attendance zones. Some changes in grade reconfiguration were accompanied. At the end of 2008 school year, the school district decided students' attendance zones (domicile) based on parent driver's license.

Dandridge v. Jefferson, Civil Action No. : 64-14801 (2009)

> "(T)he school system was authorized to continue to utilize its existing magnet schools, and students attending those schools were allowed to continue in them through the schools' terminal grade, regardless of where in the Parish they resided. As part of the operation of magnet programs prior to approval and implementation of the Magnet Plan, the JPSB also seeks the Court's approval of new arts and Montessori magnet programs at Washington, Ames, Clancy, and Lincoln elementary schools, all racially-identifiable black schools. See New Magnet Programs Motion. The new Magnet Plan was submitted on October 30, 2008. The plan requires students on the respective banks of the Mississippi to attend a magnet school on their home bank and equalizes the offerings on each side of the river. Under the proposal, magnet students on the West Bank in grades K-5 will be served by Gretna No. 2 and Ruppel elementary schools. Magnet students in

grades 6-8 will be housed at Thomas Jefferson Middle School. Magnet students in grades 9-12 will be housed at the site of the former Archbishop Blenk school. All of these programs are either new or existing programs. On the East Bank, magnet students in grades K-6 will be housed at Hazel Park and Metairie Academy elementary schools, while magnet students in grades 7-12 will be housed at Haynes Academy. Metarie and Haynes Academy are existing magnet programs, but Hazel Park is an existing elementary school that, under the plan, would be converted into a magnet school."

LA, Rapides Parish: SES-Voluntary in 2006

Rapides Parish School Board. (2006, July 6). *Proposed majority to minority transfer policy*. Retrieved from http://ww2.rpsb.us/agendas/06-07/070706/Item_28.pdf

"When unitary status is achieved, transfers based solely on racial criteria will no longer be granted... For magnet transfers, a race-neutral student selection process will be used to select a diverse student population in all magnet schools. The process will ensure diversity by selecting students from different socio-economic backgrounds and career/academic interests."

Rapides Parish School Board. (n.d.). *Student transfer and withdrawal*. Retrieved from http://ww2.rpsb.us/agendas/07-08/080707/Item_18.pdf

In July 2006, the district revised student transfer and withdrawal policies by replacing race consideration in magnet school admissions with socioeconomic factors.

MD, Prince George's County: Choice in 1985; Neighborhood in 2001

Eaton, S. E., & Crutcher, E. (1996). Magnets, media, and mirages: Prince George's County's "miracle" cure. In G. Orfield & E. Eaton (Eds.), *Dismantling Desegregation: The Quiet Reversal of Brown v. Board of Education*, 265-289. NY: The New Press.

"Prince George's County has operated under a court-ordered desegregation plan since 1972… Judge Frank Kaufman ordered a desegregation plan that reassigned huge numbers of students and included mandatory busing… By 1985, the two parties in the suit had worked out a compromise centered around Murphy's magnet school concept… In July 1994, school officials announced that they would try to get out of their remaining mandatory busing requirements, which currently affects less than 10 percent of county students. For now, the court order requires that magnet schools and programs do nothing more than meet numerical racial quotas" (pp. 267-270).

Johnston, R. C. (2000, Nov. 29). Md. district plans return to neighborhood schools. *Education Week.*

"Beginning next August, about 4100 students will be moved from the high schools they are now attending to schools in their neighborhoods, under a rezoning plan ratified this month by the board... The change will affect only 9th and 10th graders--a decision that seeks to minimize the impact on the school careers of 11th and 12th graders. And only a small portion of the 13,000 students in the county who are bused outside their

communities will be affected by this stage of a long-term plan that will be phased in over several years. By approving the new student-assignment plan Nov. 16, Prince George's County joins dozens of other districts nationwide that are adjusting to the end of mandatory-busing orders by returning students to neighborhood schools."

Ayscue, J. B., Flaxman, G., Kucsera, J. & Siegel-Hawley, G. (2013). Settle for segregation or strive for diversity? A defining moment for Maryland's public schools. The Civil Rights Project. Retrieved from http://civilrightsproject.ucla.edu/research/k-12-education/integration-and-diversity/settle-for-segregation-or-strive-for-diversity-a-defining-moment-for-maryland2019s-public-schools/MARYLAND_4-17-13_POST.pdf

"When the court-ordered desegregation plan was lifted in 2002, the school board of Prince George's County divided the district into three subdistricts that were relatively balanced in terms of racial and socioeconomic composition. Within a subdistrict, students could choose to attend any magnet school. The hope was that integrated schools would result naturally from the students' choices combined with the fact that each subdistrict was racially and socioeconomically balanced, but this goal was never fully achieved. At the beginning of the 2004-2005 school year, Prince George's County eliminated 33 magnet programs due to state funding cuts, thus drastically reducing the strategy that was originally intended to achieve integration" (pp. 3-4).

MA, Boston: Choice in 1989; 2000 SES-Voluntary

Boston's Children First v. Boston, 375 F.3d 71 (2004)

"BPS adopted an assignment system known as the Controlled Choice Student Assignment Plan, (the 'Old Plan'), which went into effect for the 1989-90 academic year… BPS assigns students to schools at the transition grades during students' public school careers, each of which corresponds to a student's advancement to a new type of school: kindergarten 1 (programs for 4-year-olds), kindergarten 2 (programs for five-year-olds), first grade (elementary school), sixth grade (middle school), and ninth grade (high school). While high school assignments are made on a citywide basis, Boston is divided into three Attendance Zones--the North, East, and West Zones--for purposes of the elementary and middle school assignments at issue in this case. These zones were drawn by the district court as part of its desegregation orders, and the lines largely hew to major transportation routes to keep traditional neighborhoods intact as much as possible. Students are eligible to attend any of the schools located in the Attendance Zone in which the students reside. As part of the assignment process, students rank their preferences for the schools within their Attendance Zone, as well as for the few schools that accept students from any part of the city without regard to Attendance Zone lines. Students whose siblings attend a school receive a preference for that school during the assignment process. Similarly, students who live within the walk zone of a given school receive a preference for seats at that school. Finally, every student receives a randomly assigned lottery number, with the lower numbers being considered more advantageous. Under the Old Plan, BPS assigned students to schools using the following criteria: the student's rank preference for the school; whether a sibling already attended the school; whether the student lived within the school's walk zone; whether the student had already matriculated

at the school on a temporary basis; and, as a tie-breaker, the student's random number, with a lower random number winning out over higher numbers. Assignments under the Old Plan operated with one additional constraint--the 'ideal racial percentage' for each grade's population, as calculated by the racial and ethnic composition of the student population in that grade within each of the three Attendance Zones. If admitting a student would cause a deviation of more than 15% from the 'ideal racial percentage,' that student would not be admitted. The Old Plan operated largely without change for ten years, from 1989 through 1999."

In 2000, the district stopped its use of race (replaced with lottery), and reduced the percentage of available seats allocated for students within a school's walk zone from 100% to 50%. "(T)he Boston School Committee, at the recommendation of Superintendent Payzant, voted to remove the racial guidelines from the assignment system on July 14, 1999… BPS adopted a facially race-neutral assignment plans in November 1999..."

Caroline, H. (1999, Aug. 4). Boston board votes to end era of race-based assignment. *Education Week.*

"(T)he school board voted 5-2 last month to adopt a race-blind admission policy starting in September 2000."

MA, Springfield: Choice in 1990; Neighborhood in 2005

Schneider, R. E. (2013, June 13). *Springfield student assignment plan – Jurisdiction of Board and Commissioner of Education* [A letter from Rhoda E. Schneider, General Counsel to David P. Driscoll, Commissioner of Education]. *Mass.gov*. Retrieved from http://www.doe.mass.edu/lawsregs/news05/springfield_memo.html

"In 1990, the School Committee adopted a controlled choice student assignment plan, which the Board approved as an amendment to all previously approved Springfield desegregation plans. Since 1990, Springfield has adopted and the Commissioner of Education has approved several minor modifications to the plan, most recently in 2004."

Goldberg, M. (2007, June 28). Many lament court's desegregation ruling. *The Republican Newsroom*. Retrieved from http://blog.masslive.com/breakingnews/print.html?entry=/2007/06/many_lament_courts_desegregati.html

"In 2005, Springfield adopted a 'boundary school plan,' which assigns children to schools based primarily on home address, Burke said. However, address zones were clustered 'in a way to improve the racial balance in the schools.' The boundary school plan probably meets the new legal standard, and no major reshuffling of students is anticipated…"

Arbulu, N. E. (2005, April 3). Neighborhood schools are back. *The Republican Newsroom*. Retrieved from *http://unit-e.com/urbancompass/boundarymap1.jpg; http://unit-e.com/urbancompass/boundarymap2.jpg; http://unit-e.com/urbancompass/boundarymap3.jpg*

"District officials next September will begin returning students to their neighborhood school, 31 years after busing was first used for desegregation. The School Committee last week approved the controversial 'boundary' plan, which assigns most students to their closest elementary and middle school or one they can walk to based on drawn boundaries. Some students still will be bused based on where they live, or if there is no 'safe path' for them to get to school. Students may choose to attend one of five magnet schools that have specialized programs funded through the U.S. Magnet Schools Assistance grant. These schools are open to all students as required by the grant… The move to neighborhood schools affects at least 4,000 students next September… The desegregation plan created six education districts and bused 5,800 students to achieve racial balance at a time when the city was predominately white and blacks were segregated in Mason Square area schools."

Springfield Public Schools. (1993). *Springfield Public Schools: Schools of choice.* Retrieved from http://eric.ed.gov/?id=ED365772

MN, Minneapolis: Choice in 2001

Kahlenberg, R. D. (2007). *Rescuing Brown v. Board of Education: Profiles of twelve school districts pursuing socioeconomic school integration*. NY: Century Foundation.

"In March 2000, the parties settled the suit, reaching an agreement on a four-year experiment beginning in the fall of 2001 to encourage greater socioeconomic integration of schools in a number of ways. Building on the state's interdistrict transfer law, the state agreed to make transportation available for low-income students (up to $500 per year) to attend suburban schools. Eight suburbs agreed to set aside a total of at least 500 seats for low income city students each year. Within Minneapolis, magnet schools that were wealthier than the city average were required to set aside up to 20 percent of kindergarten seats for low income students, and up to 50 percent of seats that open up in first through fifth grades. Students attending schools with two continuous years of low performance were given a right to transfer to other public schools. The agreement came on top of an earlier commitment from the state legislature to build a K–12 Minneapolis magnet to draw from eight surrounding suburban districts, and an interdistrict school in suburban Roseville, open to students from North St. Paul and St. Paul" (p. 38).

Frankenberg, E. (2011). Integration after *Parents Involved*: What does research suggest about available options? In E. Frankenberg, & E. DeBray (Eds.), *Integrating schools in a changing society: New policies and legal options for a multiracial generation* (53-74). Chapel Hill: University of North Carolina Press.

"Minneapolis may offer a promising race-neutral interdistrict model. The program, called The Choice Is Yours, began in 2001-2 in response to a city-suburban segregation lawsuit. Unlike the other interdistrict programs profiled here, Minneapolis's effort bases student eligibility on family socioeconomic status. By 2006-7, nearly 2,000 students placed in nine suburban districts were participating, and the program was voluntarily continued" (p. 65).

MO, Kansas City: Choice in 1986; Neighborhood in 1999

Hendrie, C. (1998, Fe. 25). Falling stars. *Education Week.*

> "Next fall, under a restructuring plan largely approved this month by a federal judge, well over half the district's nearly 60 separate magnet programs are slated for extinction. While only a dozen of the district's nearly 60 separate schools are now typical neighborhood schools, that number should climb to nearly 40 by this time next year… The root of Kansas City's unusually extensive magnet program extend back to 1984, when a federal judge laid the task of remedying the ills of the city's past system of racially segregated schools on both the district and the state. .. The result: a plan to convert all of the district's middle and high schools and most of its elementary schools to magnets. The twin goals were to promote racial mixing and upgrade educational quality and achievement. Over a seven-year period that began in 1986, dozens of schools developed specialized themes... Most of the schools losing their themes will have traditional attendance zones and become known as 'comprehensive community schools.' A central goal of this plan is to curtail busing."

Parker, W. (1998). Supreme Court and public law remedies: A tale of two Kansas cities, *Hastings Law Journal*, *50*, 475-571.

NE, Omaha: Neighborhood in 1999

Omaha Public Schools. (n.d.). *Student assignment plan summary*. Retrieved from http://district.ops.org/Portals/0/StudentCommunityServices/StudentPlacement/Student%20Assignment%20Plan%20Summary.pdf

> "On November 16, 2009, the Board of Education approved a revision to the Student Assignment Plan that had been in operation since 1999. The changes were implemented beginning in the 2010-2011 school year. The changes incorporated innovative modifications that better serve the district's students and ensure alignment of school choice processes with those of the Learning Community's Diversity Plan. The prior Student Assignment Plan replaced the district's desegregation plan that had been in operation since 1975.
>
> The revised Student Assignment Plan's biggest change was the adjustment in eligibility by residence to eligibility by socio-economic status at the student level and integrative priorities. Choices are designed by school organizational levels: elementary schools, middle schools and high schools. Choices include attending one's home attendance area school or voluntarily applying to attend any one of the district's schools in the appropriate grade range. Priority is given to siblings first, and then those students who increase the socio-economic diversity of the school. Socioeconomic status determined by eligibility to participate in the federal free or reduced-price lunch program establishes whether a student has priority for acceptance… To further promote integration magnet schools exist, four in the western portion of the district and four in the eastern portion, geographically evenly distributed.
>
> Elementary students who reside more than 1.5 miles driving distance from their home attendance area school are provided transportation to that school by the district. Students

who live more than 1.0 mile from the school of choice they attend (that is not their home attendance school) and who (1) bring socioeconomic diversity to the school, or (2) are eligible for free or reduced-price lunch, receive transportation. The district continues to provide transportation to students who selected options under the former Student Assignment Plan."

White, K. A. (1999, May 19). Omaha voters approve $254 million bond measure. *Education Week.*

> "Omaha voters last week approve the biggest school-construction-bond issue in Nebraska history, a measure that is a crucial step toward ending mandatory busing and returning to neighborhood schools… And it will allow the district to open three new magnet schools… the bond issue also paved the way for leaders of the 45,000-sutdent district to move forward with a plan to abandon mandatory, race-based busing and provide parents and students a number of new options of schooling."

Omaha Public Schools. (1999, April). *The student assignment plan.*

NY, Buffalo City: Choice in 2003

Fahey, J. (2009, October 19). *Buffalo Public Schools PK-08 student assignment plan review* [Issue Brief].

> "1976 – 2003
> o 'Deseg' era
> o Citywide magnet schools
> o ECC/Academic pairing (Pk-02 and 3-8)
> o Some neighborhood schools
> o Steady walk/bussed ratio of one third walkers and two thirds bussed
> o 0.75 mile walk boundary for transportation eligibility established
> o Unitary status granted 1996, student assignment plan unchanged through 2002-03
> 2003-04
> o Three zones (A, B, & C) with choice schools in each zone
> o City wide schools remained
> o Plan only lasted one year
> 2004-05 to present
> o 100% open enrollment – full choice
> o Attendance possible at any school from any address
> o Enrollment based on parent selection of schools with placement priorities granted for sibling preference, proximity preference and availability" (p. 1)

NY, Rochester City: Choice in 2004

By the People America in the World. (2005). Equal educational opportunities (Rochester issues). *Deliberation Week*.

> "In 2004, the Rochester City School District adopted a policy called 'managed choice' that would allow parents to select which elementary school their child would attend. It

would replace the current system that automatically sends a child to the closest elementary school. With the managed choice policy... Rochester city schools are divided into three zones... Northeast - Northwest - and South. Parents are asked to choose three schools within the zone they live in and rank them. A lottery system determines which of their three chosen schools their child attends. The new policy sets neighborhood school boundaries to families within a half-mile radius of the school... and 70 percent of those families are guaranteed a spot for their child. The policy has created some controversy because it does not include an absolute guarantee that kids can attend their neighborhood school if parents choose that."

Rochester School Board. (n.d.). *Rochester school board policy manual parent preference/Managed choice policy 5153.*

"Assigning students to Zone schools of choice by a computerized lottery, which requires that the District program the computer to assign students to their first-choice school in accordance with the following priorities: (a) Sibling Preference when there is one child enrolled at a school already; (b) a 0.50 Proximity Preference for 60% of the available seats; and (c) socioeconomic fairness guidelines (determined by Free or Reduced Lunch ratios at the school level)."

NC, Charlotte-Mecklenburg: Neighborhood in 2002

Clotfelter, C. T., Ladd, H. F. & Vigdor, J. L. (2013). *Racial and economic diversity in North Carolina's schools: An update.* Sanford Working Paper Series SAN13-01.

"(T)he school board adopted a new assignment plan in 2002 that, like the one in Winston-Salem/Forsyth, put greater emphasis on neighborhood schools and offered parents greater choice about which schools their children would attend" (p. 4).

Weinstein, J. M. (2013). *The impact of school racial compositions on neighborhood racial composition: Evidence from school redistricting*. Unpublished Paper.

"In Fall 2001, CMS was ordered to dismantle the race-based student assignment plan that had been in effect for 30 year. Under this plan, school assignment zones were typically drawn to capture non-contiguous areas with vastly different racial compositions to achieve racial balance in schools. A district-wide public school choice plan was approved for the 2002-2003 school year, with school assignment zones dramatically redrawn to give each student a guaranteed seat at a school close to her residence, typically the closest (students could gain admission to other schools in the district through a lottery process). Approximately half of families were reassigned to different schools…" (p. 2).

Kahlenberg, R. D. (2007). *Rescuing Brown v. Board of Education: Profiles of twelve school districts pursuing socioeconomic school integration*. NY: Century Foundation.

"In 2001… the Charlotte Board of Education voted to drop its longstanding racial desegregation plan and implement a public school choice plan. The choice plan allowed parents to rank preferences among schools, and gave special consideration to students who are eligible for free and reduced price lunch and currently attend schools whose free and reduced lunch numbers are thirty percentage points above the district average. Priority was also given to low-income students whose choice to transfer 'would enhance

the free and reduced lunch status but not create a concentration of free-reduced lunch status above 50 percent in the receiving school.' Beginning in 2004–05, a priority was also given where the student reads below grade level and the home school performs ten percentage points below the district average for reading… The plan was deeply flawed, however. It provided a guarantee of admissions to a neighborhood school, and low-income students were provided choice to higher performing schools only if seats were available" (p. 35).

NC, New Hanover County: Neighborhood in 2007

McGrath, G. (2008, Sep. 23). Crowd at meeting favors neighborhood schools. *StarNews.* Retrieved from http://www.starnewsonline.com/article/20080923/ARTICLES/809230147/-1/SPORTS08?template=printpicart

> "Option 4, as it is dubbed, also would continue the policy of neighborhood schools… Two years ago during a much larger elementary school redistricting, the school board largely avoided the political and social minefield by adopting the principle of neighborhood schools."

New Hanover County Schools. (2006, July 11). Regular Meeting Minutes. Retrieved from http://www.nhcs.k12.nc.us/board/2006/min071106.pdf

> "Mr. Cox moved approval of the minutes of the Public Forum on Redistricting, May 30, 2006… Ms. DeShield seconded the motion, which carried unanimously… Dr. Morris gave a report on redistricting for clarification. He pointed out that redistricting is not for this upcoming year, but will be effective for the 2007-2008 school year… Dr. Morris also stated that the Redistricting Committee has made some minor adjustments to the map regarding Murrayville, Alderman, Blair and Forest Hills. Adjustments made included changing students who were within walking distance of a school and students living in cul-de-sacs who were split between two different schools."

OH, Cleveland Municipal: Neighborhood in 1993

Reed v. Cleveland, 179 F.3d 453 (1999)

> "'Vision 21' plan developed by the parties in 1993, a plan based on parental choice favored overwhelmingly by the populace of Cleveland, including the African American community… Racial balance in Cleveland is difficult to achieve because the city is to a great extent divided racially along a North-South axis... In order to comply with the plus/minus 15% test, the school system was first divided into 190 residential zones. Students were then assigned and bussed to schools across town to achieve the requisite racial balance in each individual school. When imbalances resurfaced, they were corrected by administrative orders and students were reassigned as needed. Annually, as many as 4,000 students were reassigned and bussed to satisfy the court order… Vision 21's parental choice program was designed to be phased in over four years. Dr. Foster and Dr. Darden noted that particular attention had to be paid to the three corners of the triangular school district, where schools persistently fell outside the 15% limits due to

changing demographics and the long distance students were forced to travel. The school district thus proposed that the three corners no longer be paired with any other region but instead remain as autonomous regions not subject to the school district's 15% limitation. The district court approved Vision 21 on July 21, 1993... During the 1993-94 school year, the first year of Vision 21's implementation, 41 schools fell outside the 15% limitation. This was the result of treating the three corner regions as autonomous areas, altering the grade structure of schools in those corners (changing to K-5, 6-8, and 9-12), providing new choice options to community elementary schools in those regions, and suspending the annual assignment adjustments."

OH, Columbus City. Neighborhood in 1996

Bush, B. (2009, Nov. 8). Columbus school lines to be redrawn, Changes in building assignment will affect thousands. *The Columbus Dispatch.* Retrieved from http://www.dispatch.com/content/stories/local/2009/11/08/reassign.ART_ART_11-08-09_B1_3NFJU56.html

> "The roots of Columbus' current school-assignment plan go back to the 1970s and court-ordered busing, said Steve Tankovich, the district official in charge of designing a new assignment plan. There are more than 450 'elementary attendance zones,' or EAZs, that form the basic building blocks of school assignments. During desegregation, the zones allowed officials to assign neighborhoods of black and white students to schools to achieve racial balance. After busing for racial balance ended in 1996, EAZs were reassigned as many schools closed and many students left for charter schools, making some assignments less geographically logical today than they were years ago…"

Tebben, G. (2012, Sep. 6). Columbus Milepost| Sept. 6, 1979: First day of school busing accomplished quietly. *The Columbus Dispatch.* Retrieved from http://www.dispatch.com/content/stories/local/2012/09/06/first-day-of-school-busing-accomplished-quietly.html

> "The busing of students to achieve racial balance in Columbus schools continued until 1996… In 1985, when the school district was released from federal court control, enrollment stood at 67,000. The school board continued busing on its own for 10 more years before returning to neighborhood schools in 1996, which brought resegregation."

OH, Dayton City: Neighborhood in 2002

Hannah, J. (2002, April 16). Judge ends racial busing in Dayton. *Cincinnati.com.* Retrieved from http://www.enquirer.com/editions/2002/04/16/loc_judge_ends_racial.html

> "A federal judge on Monday lifted a desegregation order, a move that will end more than 25 years of cross-town busing designed to achieve racial balance in the city's public schools… 'We're pleased that we've reached a settlement agreement,' said Steve Puckett, assistant superintendent of the Ohio Department of Education. 'It's time to move on from the remedies of the past — such as busing — and focus on improving academic achievement of all students in all schools.' Because Judge Rice has ordered busing to end, the district will receive $32.3 million that the state promised to pay in settlement."

OK, Oklahoma City: Neighborhood in 1985

Dowell v. Oklahoma, 606 F. Supp. 1548 (1985)

> "Thereafter, on December 17, 1984, the Oklahoma City Board of Education unanimously adopted the Student Reassignment Plan which is to go into effect at the commencement of the 1985-86 school year. The fundamental elements of the plan, admitted into evidence as plaintiffs' Exhibit #1 and incorporated by reference in these findings of fact, are as follows:
>
> (a) The Plan calls for K-4 neighborhood schools throughout the district. This eliminates compulsory busing of young black children, grades 1-4, to elementary schools outside their immediate neighborhood;
>
> (b) An equity officer is to monitor all schools to insure the equality of facilities, equipment, supplies, books and instructors in all schools. An equity committee is to assist the equity officer and recommend ways to integrate students at any racially identifiable elementary schools several times each year;
>
> (c) A 'majority to minority' transfer policy will allow elementary students assigned to a school where their race is in the majority to obtain a transfer to a school in which their race will be in the minority. The transfer option is encouraged through district-provided transportation;
>
> (d) All faculties and staff will remain integrated at all schools in the district; and
>
> (e) Fifth year centers will be located in all sections of the school district. All fifth year centers, middle schools, and high schools in the school district will continue to be racially balanced with the aid of busing."

PA, Pittsburgh: Neighborhood in 1996; SES-Voluntary in 2010

Chandler, L. (1997). *Forced busing: A staff report of the Allegheny Institute for Public Policy.* PA: Allegheny Institute for Public Policy.

> "In Pittsburgh, the financially-strapped Board of Education recently backtracked from a proposal to reduce busing and save almost 10 million dollars in transportation costs, and instead adopted a plan that would keep busing essentially intact while costing the district an additional 10 million dollars… (T)he board, in Spring 1995, began a study to see what would take to make the schools more attractive, an a new organization plan, called The Redistricting Plan… This system-wide plan would re-establish neighborhood schools by keeping students as close to their homes as possible while maintaining a substantial number of students in racially balanced schools by expanding the use of magnet schools and open enrollments… The plans… managed to re-ignite many of the passions on both sides of the busing issue, and a result it was met with predictable opposition with some arguing that it would lead to resegregation… The board… bowed to public pressure, and came up with a revised plan with a slowed implementation schedule. The revised plan… 'strikes a balance between the twin goals of creating more neighborhood schools and maintaining diversity.'"

Craig, R. (1996, May 15). News roundup: Update. *Education Week*.

> "The Pittsburgh school district has adopted a revised redistricting plan that scales back an earlier proposal to eliminate most busing but will still allow more children to attend school closer to home. The two-year plan, which presents a compromise between advocates of neighborhood schools and supporters of busing to promote racial balance, calls for opening six new schools, redraw boundaries, and changes the number of grades served at several schools. The changes are to be phased in over two years, starting this fall."

Chute, E. (2007, June 28). Schools' racial balancing rejected. *Pittsburgh Post-Gazette.* Retrieved from http://www.post-gazette.com/news/nation/2007/06/28/Schools-racial-balancing-rejected/stories/200706280277

> "Pittsburgh has dismantled some elements of its desegregation plan, including forced busing across the rivers, and the district is no longer required by the consent decree to do the remainder."

Chute, E. (2013, June 9). Magnet schools in Pittsburgh lose their racial balance. *Pittsburgh Post-Gazette.* Retrieved from http://www.post-gazette.com/news/education/2013/06/09/Magnet-schools-in-Pittsburgh-lose-their-racial-balance/stories/201306090213

> "Beginning in 2010-11, the district discontinued considering race in magnet admission as a result of a U.S. Supreme Court ruling on race-based admissions in Seattle and Jefferson, KY, in 2007. In addition, population has dropped, and school closing--many in 2006 and later--have led to reassignments, including assigning students in feeder patterns based on street address to schools that had admitted students only through the magnet process… Until 2010-2011, admission to most magnet schools was by race -- divided into black and other. In the early years, parents waited in line at their school of choice, but in more recent years, for schools where there are too many applicants, a lottery has been done by computer. The current lottery does not consider race but gives extra weight for various factors, such as eligibility for free or reduced-price lunch and living within the geographic region where the school is located... However, the neighborhood preference, driven at least in part by busing costs, weights the lotteries toward who live nearby. .. For many years, magnet schools had a goal of 50 percent black 50 percent other… Some schools are called magnet schools but also serve as assigned feeder schools for at least some of their students… Students take the same program whether they entered via the magnet lottery or were assigned because of where they live."

SC, Greenville County: SES-Voluntary in 2002

Kahlenberg, R. D. (2002). *Economic school integration: An update* [Issue Brief]. NY: Century Foundation.

> "In late 2001, the Greenville school board voted to adopt a new student assignment scheme which eliminated the use of race but sought to reduce the 'concentration of low income students' and the 'concentration of low-achieving students.' The board rejected, however, a more aggressive plan to ensure that no school has more than 50% of its students eligible for free or reduced price lunch" (p. 3).

TN, Metropolitan Nashville: Neighborhood in 1998; Neighborhood in 2008

Smrekar, C. & Goldring, E. (2013, Oct. 15). *Rethinking magnet school policies and practices.* Retrieved from https://lcrm.lib.unc.edu/voice/works/w/rethinking-magnet-school-policies-and-practices/s/1

> "On September 28, 1998 the Metropolitan Nashville Public Schools (MNPS) district was declared unitary. The new plan reorganized student assignment into eleven cluster feeder patterns designed to reduce the distance between home and school, and to limit the number of schools a student attends during their entire time in the school district (to three). The plan also provided increased choice options, including magnet schools. In this particular district, a new student assignment plan was immediately implemented that included neighborhood schools—schools that were closer to home and thus a shorter bus ride away than during the court order… The plan does not include any 'specific ratios' for schools, although redrawn attendance zones reflect 'a consideration given to demographic diversity.'"

Maxwell, L. A. (2013, Oct. 15). Nashville student assignment case turned down by Supreme Court [School Law Blog]. *Education Week.* Retrieved from http://blogs.edweek.org/edweek/District_Dossier/2013/10/nashville_student_assignment_c.html?qs=Nashville+Student+Assignment+Case+Turned+Down+by+Supreme+Court

> "The 1998 plan was largely based on where students lived, with clusters of high schools and feeder middle and elementary schools. The plan included a number of so-called noncontiguous attendance zones that generally involved busing black students from poor neighborhoods to racially diverse schools in higher-income neighborhoods. But that plan led to an underuse of some schools and overcrowding at others.
> The 2008 plan changed the noncontiguous zones to 'choice zones.' Under the plan, students from the noncontiguous zones could either begin attending their neighborhood school or continue to be bused to a school in the same cluster where they had been bused before, but not necessarily to the same racially diverse schools they had attended under the 1998 plan."

Spurlock v. Fox, No. 12-5978 (2013)

> "In July 2008, the Metropolitan Nashville Board of Public Education (the Board) adopted a new student-assignment plan generally referred to as the Rezoning Plan. The Rezoning Plan modified the student-assignment plan that had been in place since the Metropolitan Nashville Public Schools District (the District) achieved unitary status (i.e., became desegregated) in 1998. One of the modifications effected by the Rezoning Plan was to eliminate the so-called mandatory noncontiguous transfer zones, meaning that the existing system whereby students in racially isolated geographical zones were bused to racially diverse schools in noncontiguous zones was replaced by a system in which the same students were given a choice of either attending the schools in their own neighborhood or being bused to schools in the same noncontiguous zone as before, but not necessarily to the same school previously attended."

TX, Austin Independent: Neighborhood in 1987; Neighborhood in 2000

Price v. Austin, 945 F.2d 1307 (1991)

"In April 1987, the Board adopted a revised student assignment plan, to become effective in the 1987-88 school year. The new plan primarily affected elementary schools, and eliminated crosstown busing (which had been a part of the 1980 consent decree, and was designed to further desegregation) of most students in pre-kindergarten through fifth grade. The plan would result in sixteen elementary schools which would have predominantly minority student populations (90% or more, according to the district court's opinion)… The 1987 plan also included other elements. It retained the district's policy of majority-minority transfer…"

Soria, H. M. (2006). *From desegregation to resegregation: A case study of African American parent understanding* [Dissertation]. TX: The University of Texas at Austin.

For the 1987-1988 school year, the pairing of elementary schools was eliminated and replaced by a neighborhood school policy. There was no longer to be extensive busing at the elementary level. Only 1,300 out of 78,000 students were bused for integration purposes. "At best, busing had been seen as a symbolic gesture of desegregation reform" (p. 122). In Dec. 1998, the AISD decided to stop 27 years of forced busing as a means to integrate schools. The decision to end busing came at the same time the school board had to make important boundary decisions to open nine new schools. After completely removing the previous busing plan, the district offered 'diversity choice' which was an option to continuously attend the same school despite any boundary change.

Ward, J. (2006, Feb 23). Re-segregation and reform [in Austin, Texas]. *Daily Texan.* Retrieved from http://texasedequity.blogspot.com/2006/02/re-segregation-and-reform-in-austin.html

"The Austin Independent School District Board of Trustees abandoned forced busing - a way of integrating schools by busing students from predominantly white schools to predominantly black and Hispanic ones - in 2000. It was replaced by neighborhood school assignment with an optional school transfer system."

TX, Dallas Independent: Neighborhood in 1984; Neighborhood in 1994

Tasby v. Dallas, 265 F. Supp. 2d 755 (2003)

"After an extensive hearing in spring 1981, the Court filed an Opinion rejecting crosstown busing, keeping in place previous desegregation remedies for grades 4-8, changing attendance zones for certain schools, and instituting programmatic remedies designed to close achievement gap between minority students and their Anglo counter parts. In 1984 the Court directed to open three Learning Centers in Sough Dallas for grades 4-6. These Centers enabled previously bused minority students to return to their neighborhood schools and instituted creative education remedies…"

Zeeble, B. (2001, Sep. 4). Dallas' history of school desegregation. *KERA News.* Retrieved from http://keranews.org/post/dallas-history-school-desegregation

"The original bus order lasted four years, then the Judge added elementary students to it. But by 1982, a few years later, busing largely went away... And in 1994, Judge Barefoot

Sanders declared the district 'unitary,' meaning it was no longer considered legally segregated. But he still maintained some oversight, pending the elimination of some problems. For example, the court ordered Townview Magnet School needs better technology. Facilities for talented and gifted students need upgrading."

Tasby v. Dallas, 869 F. Supp. 454 (1994)

"In December 1992, voters passed the most ambitious bond issue in the history of the DISD... The centerpiece of the 1992 bond program is the construction of Townview, a centrally located 'supermagnet' that will house six of the District's existing magnet programs in a state-of-the-art facility… Also included in the bond program is relief of overcrowding at the Fannin, Bonham, and Ray elementary schools. These schools are located in neighborhoods heavily populated with minority students, many of whom are now being bused to other schools in the District. The District plans to build two new schools, and to build an addition to the existing Ray facility, to relieve overcrowding. (Dave Patton). This construction will allow students to return to their neighborhood schools. The District will establish Learning Centers for returning students in grades 4-6 at these schools. (Chad Woolery; Dave Patton)... In December 1993, the District provided the Court and the parties with a Bond Project Priority List that contains a schedule for the various new buildings, additions, and renovations included in the bond program… (T)he District was on schedule with the projects, and did not anticipate any delays. At the request of the Plaintiffs, the District submitted a motion following the unitary status hearing that sought Court approval of the Bond Project Priority List; the Court approved the schedule. Order dated May 18, 1994."

TX, Houston Independent: SES in 1998

Hendrie, C. (1998, June 10). Houston reaches for diversity without quotas. *Education Week.*

"(T)he district's quota system.. aimed to achieve a ratio in every program of 65 percent blacks and Hispanics to 35 percent students of other groups. The quotas had originally been set as part of a desegregation case that ended in 1989… The suit prompted schools leaders to appoint a task force to review admission procedures not just for the Vanguard programs but also for all magnet schools in the 212,000-student district… Just days before the case was slated for trial in federal court last fall, the school board decided to drop the quotas… Under the new system, such children get three extra points out of a possible 108 in a rating system that considers grades, test scores, interviews, and parent and student questionnaires, as well as such obstacles to success as poverty, lack of fluently in English, and disabilities."

Zuniga, J. A. (2001, July 18). Study: Resegregation on rise, even in HISD. *Houston Chronicle*. Retrieved from http://www.chron.com/news/article/Study-Resegregation-on-rise-even-in-HISD-2036767.php

"School board members ended the race-based guidelines in October 1997, four days before a federal judge was scheduled to hear a reverse discrimination case they feared they would lose."

VA, Arlington: SES-Voluntary (Minor) in 1998

Tuttle v. Arlington, Civil Action No. 98-418-A (1998)

> Two students whose admission to the Arlington Traditional School were denied sued the district. The school chose students by lottery but, if white students were selected, it skipped the selection and moved to the next lottery. In response to the lawsuit, the school developed a weighted lottery system considering student race and family background (family income, immigration status) and implemented the system since 1998-98 school year. In 1998, the court ruled the weighted lottery favoring black students is unconstitutional and ordered the use of random lottery. Later, the court ruled that, in the previous court decision, the court abused its discretion when ordering specific admission policy, but affirmed the unconstitutionality of weighted lottery. The district responded to these orders by increasing choice schools' capacity and admitting more students.

Arlington Public Schools. (n.d.). Administrative Services. *Random double-blind lottery.*

> "The process for the random, double-blind lottery includes pulling each application and matching it to a randomly-drawn number. This process is used to determine the order of admittance for all applications."

VA, Norfolk City: Neighborhood in 1986, Neighborhood in 2001

Doyle, M. C. (2005). From desegregation to resegregation: Public schools in Norfolk, Virginia 1954-2002. *The Journal of African American History*, 64-83.

> "Norfolk would return to segregation, or experience resegregation, after the ending of the busing policy at the elementary school level in 1986 and at the middle school level in 2001" (p. 64). "In September 2001, busing in Norfolk ended at the middle school level (grades six to eight). At that time, similar concerns resurfaced, and whereas African Americans were widely opposed to the end of busing, whites were generally in favor. In a repeat of the situation in 1986, the school board voted to a plan by a 5-2 vote" (p. 78).

Watson, D. M. (2008, Oct. 3). The Norfolk 17 face a hostile reception as schools reopen. *The Virginian-Pilot*. Retrieved from http://hamptonroads.com/2008/09/norfolk-17-face-hostile-reception-schools-reopen

> "Norfolk discontinued cross town busing in its middle schools in 2001 in hopes of stemming the drain, and the School Board will now look at redrawing attendance zones on the high school level."

Eaton, S. E., & Meldrum, C. (1996). Broken Promises: Resegregation in Norfolk, Virginia. In G. Orfield & E. Eaton (Eds.), *Dismantling Desegregation: The Quiet Reversal of Brown v. Board of Education*, 115-141. NY: The New Press.

WA, Seattle: Choice in 1997

Hendrie, C. (1996, Dec. 4). Seattle to shelve race-based busing in shift toward neighborhood schools. *Education Week*.

"(T)he Seattle school district has decided to phase out race-based busing to allow more students to attend neighborhood schools. Under its existing voluntary desegregation plan, the district buses some elementary students across town in an effort to keep schools within racial-balance guidelines. The policy will end next fall, and elementary students will be able to choose from among any school in the 47,000-student district, as middle and high school students are not allowed to do. Unlike many other urban school systems, Seattle has never been under court order to desegregation. But it voluntarily started mandatory, race-based student assignments in 1973."

Ware, L., & Robinson, C. (2009). Charters, Choice, and Resegregation. *Delaware Law Review*, *11*(1), 1-21.

"In 1998, Seattle adopted an assignment plan which allowed incoming ninth graders to choose from among any of the district's high schools by indicating their assignment preferences in rank order. If too many students identified the same school as their first choice, the district used 'tiebreakers' to determine which students would be assigned. First preference was given to students who had a sibling enrolled in the school. The second tiebreaker considered the student's race" (p. 18).

WI, Milwaukee: Magnets/Transfers/Rezoning in 1976; Choice in 1998

Russ Kava. (January, 2011). School integration (Chapter 220) aid (Informational Paper 27). *Wisconsin Legislative Fiscal Bureau.* Retrieved from http://legis.wisconsin.gov/lfb/publications/Informational-Papers/Documents/2011/27_school%20integration%20(Chapter%20220)%20aid.pdf

"The integration aid program was enacted by Chapter 220, Laws of 1975, and first went into effect in the 1976-77 school year. The stated purpose of Chapter 220 is "to facilitate the transfer of students between schools and school districts to promote cultural and racial integration in education where students and their parents desire such transfer and where schools and school districts determine such transfers serve educational interests." One of the major goals of Chapter 220 was to achieve racial balance on a voluntary basis and at no cost to local taxpayers. The program provides state funds, in the form of unrestricted aids, as an incentive to school districts to desegregate their schools... In 1979, a settlement agreement was reached which required the Milwaukee Public Schools (MPS) to ensure that at least 75% of all students within the district would be enrolled in racially balanced schools. This was defined by the Court as having between 20 and 60 percent black enrollment at the high school level and between 25 and 60 percent black enrollment at the middle and elementary school level; only 9% of MPS schools met this standard in 1976. The settlement agreement remained in effect for five years, until July 1, 1984… In 1984, the issue of school integration in Milwaukee was again before the federal courts. The MPS School Board filed a lawsuit against 24 suburban school districts and the state charging that the public schools within the metropolitan Milwaukee area were segregated. The parties… eventually reached a settlement agreement that was approved by the federal District Court in October, 1987. This agreement was primarily dependent on the Chapter 220 program to facilitate and finance increases in the number of voluntary pupil transfers between MPS and suburban Milwaukee school districts. Although the original agreement expired on June 30, 1993, MPS and the suburban districts extended the agreement to June 30, 1995. Since the expiration of the agreement,

MPS has negotiated individual transfer agreements with the participating suburban school districts" (p. 1).

"In order to qualify for integration aid, a district must transfer pupils between school attendance areas with certain concentrations of minority or nonminority pupil populations. The statutes define "attendance area" as the geographical area within a school district established by the school board for the purpose of designating the elementary, middle, high, or other school which pupils residing in the area would normally attend" (p. 2).

"Under 1999 Act 9, portions of the intradistrict transfer program were re-structured for MPS only. Act 9 contained provisions, commonly referred to as the neighborhood schools initiative, designed to assist MPS in the renovation and construction of school facilities and in the delivery of educational services for children in that district. The neighborhood schools initiative was intended to reduce the number of pupils who are transported outside of their neighborhood under the intradistrict transfer program" (p. 3)… "A total of $98.5 million in bonds have been issued related to the neighborhood schools initiative, excluding bonds for capitalized interest, issuance and other allowable costs. This funding was budgeted for approximately 40 projects, including construction of new schools, additions to schools, renovations to facilities, and leases for schools" (p. 4).

Wisconsin Legislative Reference Bureau. (December, 2011). Milwaukee neighborhood school initiative [Budget Brief 99-18]. Retrieved from http://legis.wisconsin.gov/lrb/pubs/budbriefs/99bb18.pdf

"Act 9 requires MPS to develop a Neighborhood Schools Plan, hold local hearing on the plan, and submit it to the Joint Committee on Finance and the Senate and Assembly Committees on Education by May 2000. The plan must include the following information… specific plans for establishing neighborhood schools and replicating or relocating specialty schools in order to increase the number of pupils attending neighborhood schools"

Bonds, M., Sandy, M. G., & Farmer-Hilton, R. L. (*forthcoming*). The rise and fall of a voluntary public school integration transportation program: A case study of Milwaukee's 220 program. *Education and Urban Society*, XX(X), 1-23.

"On September 15, 1987, a federal decree settlement of the lawsuit was reached. The suburban districts agreed to increase the number of voluntary student transfers accepted into the 220 Program, and increase the number of participating school districts from 12 to 23. Eighteen of the 24 suburban school districts agreed to make good faith efforts to increase the number of seats in their schools for MPS minority students, and 10 suburban districts set new goals for minority students in their schools ranging from 20% to 23%, agreeing to reserve a specific number of seats earmarked for minority MPS students (Wisconsin Department of Public Instruction, 2007; Wisconsin Legislative Fiscal Bureau, 1997, 2005; Wisconsin Legislative Reference Bureau, 2011). In return, MPS reserved 10% of the seats in its specialty and magnet schools for suburban students enrolling in those schools" (p. 11).

"Brown Deer, Glendale/River Hill, and Maple Dale-Indian Hill School Districts met the 30% racial balance as indicated in the revised 220 program objectives in 2007-2008; thus, they no longer had to participate. Glendale River Hills graduated the last four Milwaukee Public School resident students participating in the Chapter 220 Program in 2009-2010 (E. McDowell, personal communication, June 5, 2011; Milwaukee Public Schools Division of Student Services, 2010)" (p. 12).

"In the 1998-99 school year, the Open Enrollment program, which was passed by Wisconsin Legislature in 1998, was introduced in Milwaukee to further the goals of "free choice" (Public Policy Forum, 2003b). Under this state-wide program, parents are given an option to enroll their children in any public school district in Wisconsin outside the student's resident school district. This allows students and parents the freedom to seek appropriate public schooling for their children. As noted in Table 4, the number of students participating in the Open Enrollment Program is more than twice the number of those in the Chapter 220 Program and had only 2,025 students participating in 2011 compared with 5,991 for Open Enrollment (Milwaukee Public Schools Division of Student Services, 2010)... Program has no integration goals, and, in most cases, transportation must be provided by the parents rather than the school districts" (pp. 15-16).

<div align="center">**VITA**</div>

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