School Integration in Gentrifying Neighborhoods:
Evidence from New York City

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March 2019

The Civil Rights Project
Proyecto Derechos Civiles

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FOREWORD

New York and other leading cities are confronting an important choice about their future, as a number of communities are in the midst of stark racial and economic changes. For generations after World War II, central cities were continuously losing middle-class and professional residents to the suburbs. This was accompanied by a dramatic decline in the white population, followed by the loss of many middle-class families of color. Although some neighborhoods remained elite, much of the central cities became places of almost completely non-white and poor residents. Children of color usually attended schools that were doubly segregated by race and poverty. Now, as gentrification[1] spreads into many city neighborhoods in response to the cost of suburban housing and an increasing attraction of city life, the city confronts some very different possibilities and questions about what it should do. This report by two young Civil Rights Project researchers, Kfir Modechay and Jennifer Ayscue, documents the trends, reports how much diversity is occurring, and considers the ways in which these changes could lead to integration in an extremely segregated city.

Five years ago, the Civil Rights Project published a study of school segregation in New York state, including a detailed look at New York City. The Project has been closely monitoring school segregation and desegregation across the United States since it was founded 23 years ago and the 2014 report, *New York State's Extreme School Segregation: Inequality, Inaction and a Damaged Future*, was part of a series on East Coast racial patterns. The same year, we also published a national study of segregation on the 60th anniversary of *Brown v. Board of Education,* and found that New York State had the highest level of segregation for black students in the country and the second highest level of segregation for Latino students. New York City was the epicenter of the state's school segregation, and its recently created charter schools were even more segregated than the public schools. The report summarized a half-century of research showing that the double segregation (by race and poverty) of students of color was related to many kinds of inequality. Research shows that integrated education offers significant benefits for students, not only in educational achievement but also in terms of graduation, success in college, and later success in working and living in integrated communities.

New York City is very unusual among the nation's large cities in never having any sustained desegregation order or plan for school desegregation. Since I began to study these issues four decades ago, New York has been a center of extreme segregation, usually together with Illinois and Michigan for black students, and California and Texas for Latinos. New York state has been substantially more segregated than any of the Southern states, which all experienced desegregation in the civil rights era that still makes a difference, even after desegregation plans were terminated. Since the New York City Department of Education is

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[1] I really do not like the term "gentrification," since it is a British term and we don't have groups that are called gentry, and it implies a kind of elitism though it is often is created by young middle-class people trying to find or create a place they can live, often with a lot of "sweat equity," housing improvements that they do themselves. Sometimes they are people who love the city. We need a better word, especially for the first phase.

by far the largest school district in the country, this segregation has affected millions of New Yorkers over the decades.

The 2014 report received a great deal of attention, with scores of articles published across the state. More importantly, it triggered serious discussion and some action by student and community groups, civil rights advocates, the school district, city council, and the mayor. There has been significant student organizing for desegregation as more students are recognizing that their lives and their communities are at stake. This February, the city's high-powered School Diversity Advisory Council filed an impressive report, *Making the Grade: The Path to Real Integration and Equity for NYC Public School Students,* in which it made serious proposals for progress. For the first time since the civil rights era, this issue is on the city's agenda. I am very encouraged by these developments and convinced that though the scope of the problems is huge, there are many ways in which real progress could be made.

Since New York has never experienced a citywide court order for desegregation or even a trial on the city's historic violations, the focus on desegregation has raised many new issues for various communities. In cities without a history of desegregation, where rights to superior schools are often seen as part of what you buy when you purchase a home, the idea of racial change in the schools often triggers fear and resistance. In spite of a half century of research that shows all children benefit academically and socially from school integration, people who have not experienced integration tend to see schools as a zero-sum game where their children lose when others gain. In fact, in terms of test scores, school integration is a positive sum game. Children of color gain, and middle class white and Asian students stay constant, while all children benefit in terms of preparation for living and working in a diverse society. The mechanism for this net gain comes from the fact that the achievement of middle-class students is much more closely linked to family background and preparation with a smaller school effect, while for children of color from less favorable circumstances the school has a much larger impact on their life outcomes. Nonetheless, without leadership, people often act on fears.

All of our great cities are shaped by streams of people moving in and moving out of various neighborhoods. The average American moves eleven times in his or her lifetime, and younger people in the family-formation stage move more frequently--so neighborhoods and schools are constantly changing and must regularly replace those who are leaving. People with resources have, of course, many more choices than people without, particularly in a country with a much smaller sector of subsidized housing than most comparable nations. White people find it easier both to move wherever they want and to obtain mortgage financing, while families of color often face discrimination and have fewer contacts and less equity in existing housing. Gentrification is, however, changing some of these realities. In high-cost areas today, even people with very good jobs often cannot find the kind of housing they want at a price they can afford. This situation stimulates waves of gentrification, where people who cannot secure housing in regular middle-class suburban communities decide to purchase and rehab old housing in lower income city neighborhoods.

Gentrification is, of course, a mixed force—creating housing upgrades at no cost to the city as newcomers update old housing stock, raising tax revenue as values rise. On the other hand, this process cuts the supply of lower cost housing at a time of extreme economic inequality, creating a housing crisis, forcing many families to be displaced and some families into homelessness. From the perspective of civil rights and urban planning, of course, the goal is to harness the potential benefits of these changing flows and to do everything feasible to limit the damage. If long-term residents of gentrifying neighborhoods are to be able to remain in their community, there will have to be a strong and early targeting of housing assistance in these communities, rather than only in the concentrated poverty neighborhoods where most housing assistance flows in spite of their weak attachments to job markets and lack of good schools. In most gentrifying communities there is neither a housing plan to allow older residents to participate in the big gains, or a school plan to attract the newcomers and their resources into local public schools.

The creation of more integrated schools that attract substantial middle-class enrollment is one of the real possibilities of gentrification--but it is seldom realized. Generally, in gentrifying communities, schools with fewer resources, bad reputations and low-test scores are long occupied by poor children of color, so that middle-class newcomers do not consider them viable schooling options for their children. Instead, they search for schools of choice or private options, or they move to another area when their children reach school age. Many newcomers in NYC neighborhoods are young professionals hoping to prepare their children to compete for admissions to selective private colleges, so they seek schools with a record of doing that, typically middle-class, largely white and Asian schools with children from similar families. It is the classic collective action problem. Everyone pursuing individually what they think is their short-term interest makes impossible the creation of institutions that would greatly strengthen the long-term interest of the community, including lowering the costs and increasing the convenience of strong local schooling. If low-income enrollment drops sharply because long-time residents can no longer afford to live there, and newcomers do not enroll, the local school will be threatened by low enrollments. And school staff, in addition to the community, also would gain from fostering a different outcome.

Most urban districts have no significant policies to attract middle-class professionals (white and people of color) to their neighborhood schools, or to deal with race relations in the schools. Most urban schools take a passive attitude, serving whoever shows up. Few pay serious attention to the changing demographics of neighborhoods that are becoming whiter and more affluent, and much more demanding about school quality. All these things, however, can become major assets for the school and the district.

I have been involved in the development of desegregation plans in various cities, and have raised children in public schools in three gentrifying or gentrified neighborhoods in Washington, D.C., Chicago, and Cambridge, MA. The D.C. school, whose integration I helped organize more than four decades ago, is now an excellent and diverse school (and attended by some of my grandchildren). There are a number of similarly successful schools in parts of Washington and other cities. Some cities are now pursuing conscious plans to address how to attract new families to the public schools while also serving existing students.

Dallas and San Antonio, for example, are successfully experimenting with the innovation of existing schools and creation of new schools in gentrifying communities, where almost all the students in the local school are students of color transported from other areas because the residents had previously abandoned the school district. These examples show that when lasting diversity is accomplished, it can be a very positive experience for the schools and bring neighborhoods together.

My experience is relevant to this issue in another way. I have taught in six great universities, including Harvard, Princeton and the University of California, and worked closely with students from many backgrounds. The truth is that parents who try to protect their children in largely white schools with very little social and economic diversity are actually hurting them. The great universities are intentionally diverse, and students with diverse backgrounds are better prepared for those campuses and add to them. I have found such students to be invaluable in conducting research because they have a much more sophisticated comprehension of our society and the ability to understand and relate to the perspectives of others. The students who have been most "protected" are often the most clueless.

Young professionals moving into city neighborhoods may have considerable resources and expertise, and want a particular kind of schooling opportunity for their children. They often like diverse communities but have very negative views of the public-school systems, and will not send their child to a school where almost everyone is nonwhite and poor. They would, however, love excellent and diverse public schools in their communities, which are also far more convenient and free. It is the classic problem of the commons. Almost everyone would like lasting diversity, with excellent integrated public schools and strong community support--but almost everyone is operating in a way that will produce far less favorable outcomes. We need to provide the vision and leadership to create a better outcome.

To change the outcomes a few things are needed: 1) the desire to create integrated schools that serve both newcomer and existing students; 2) neighborhood organizing to gain resident support; 3) school staff working with parents and local organizations to publicize the positive features of the school and welcome all parents; 4) community events to recruit enough newcomer parents to begin to change the image of the school; 5) addressing local needs, such as coordinating with after-school day care; and 6) tapping local talent and businesses to increase the school's resources. Once significant integration begins, at least in the early grades, the process will develop a momentum of its own. Outside the schools, there will be the need for a strategic focus on housing subsidies to support long-term residents of the area. In transitions of this sort, many race and class issues arise. Therefore, support from the school district, colleges or community organizations to facilitate communication and help train the school staff and interested parents in intergroup skills could be invaluable. Changes of this sort are demanding but promising, and tend to create friendships and warm bonds across previous lines of separation.

This report is not about the overall integration issues, only about the ways in which the city could use the opportunities and solve some of the problems created by very substantial gentrification. This report shows that gentrification is spreading across many New York

City neighborhoods, especially in Brooklyn and Queens, and that the number and percent of whites are rising substantially in these locations. From a school perspective, this raises both challenges and opportunities for the public schools and charters, both of which are, on average, showing a small increase in their share of white students, but lagging far behind the population changes.

Gentrification is forcing out many nonwhite families as the costs rise more rapidly than they can afford. Either the schools figure out how to attract the newcomers or they lose enrollment--and communities may lose their schools. For the first time in generations, a number of neighborhoods where whites left long ago now have the possibility of integrated schools, if they can attract the newcomers and hold families of color, a challenge for housing policy as well as school initiatives. With the right policies, New York could see a considerable expansion of integrated neighborhoods with integrated schools. The city could also attract some of the many middle class and professional families of color who now live in suburbia. Otherwise, the city could see ships passing in the night as one group moves in and the others face pressure over time to move away. This report suggests a better way forward. In presenting an illuminating case study of New York City, it provides compelling findings regarding the city's shifting demographics, residential, and school enrollment patterns. It also offers constructive ideas for using the opportunities introduced by gentrification to create stable and diverse neighborhoods, with shared opportunities for good housing and excellent desegregated schools.

Gary Orfield

School Integration in Gentrifying Neighborhoods:
Evidence from New York City

Executive Summary

In gentrifying areas of New York City, this research finds that a small but growing segment of middle-class, mostly White families is choosing to enroll their children in their neighborhood public elementary schools, thus increasing the diversity in those schools. Because residential and school segregation across the nation have traditionally had a symbiotic relationship where an increase in one leads to an increase in the other, the demographic phenomenon associated with gentrification where neighborhoods become more diverse has the potential to alleviate persistent school segregation, a major cause of educational inequity.

Our analysis of neighborhoods and school enrollment patterns in New York City finds that in the most rapidly gentrifying areas, racial segregation in elementary schools has declined modestly, more so in traditional public schools (TPS) than in charters. The findings from this study are promising since diverse schools have significant advantages, not only for learning but also for preparing all groups to live and work successfully in an increasingly diverse society. However, in spite of these changes, a high level of racial segregation remains in New York City schools and much more progress is still needed.

Several major findings emerge:

- In the city's most rapidly gentrifying census areas, the White population has increased almost threefold, from 11% in 2000 to over 30% in 2016. Among the school-aged population (5-17 years old), the White share increased from 10% to 29% during the same time period while the share of Black and Latino school-aged children declined from 87% to 64%.

- In these same rapidly gentrifying areas, the share of White and Asian elementary school enrollment also increased between 2001 and 2015, rising from 5.7% to 10.4%.

- While close to four-fifths of all the elementary schools in gentrifying neighborhoods had less than 5% White enrollment in 2015, nearly one out of 10 schools had more than 25% White enrollment.

- Between 2000 and 2015, the shares of intensely segregated (90-100% non-White) and hypersegregated (99-100% non-White) elementary schools *declined* in

gentrifying areas of New York City, while the shares of intensely segregated and hypersegregated elementary schools *increased* in non-gentrifying areas.

- The share of White students increased in both elementary charter schools and elementary TPS between 2000 and 2015 in gentrifying areas; however, a larger share of White students attended TPS than charter schools in 2015 (8.1% and 2.0%, respectively).

- Both elementary charter schools and elementary TPS in gentrifying areas experienced a decrease in the share of intensely segregated and hypersegregated schools between 2000 and 2015. However, the overwhelming majority of charter schools remained intensely segregated or hypersegregated in 2015.

- In 2015, nine out of 10 elementary charter schools in gentrifying areas were intensely segregated, and at the most extreme level of segregation— hypersegregation—three out of four charters remained hypersegregated, enrolling 99-100% non-White students. In 2015, 79.5% of elementary TPS were intensely segregated, but at the most extreme level of segregation, a substantially smaller share of TPS (28.2%) was hypersegregated.

Neighborhoods undergoing massive urban-core redevelopment and metropolitan growth have a particularly ripe opportunity to harness the upsides of community change and alleviate the stark racial and economic isolation that is so pervasive in urban centers across the United States. However, housing market pressures associated with gentrification also have the potential to force longtime, low-income residents and residents of color to move out of gentrifying neighborhoods, thus leading to the resegregation of communities and schools. In order to create stable and diverse neighborhoods and schools, policy responses that link housing and schools are essential (see Mordechay & Ayscue, 2018, for detailed discussion). Although greater housing production and preservation is necessary in communities struggling to offset market pressures, in order for the outcome of gentrification to be a shared opportunity to facilitate greater desegregation, efforts at meaningful and sustainable school integration must occur alongside neighborhood changes. Left to its own devices, gentrification is unlikely to deliver on that promise.

Introduction

Gentrification in our nation's urban centers has surged over the past couple of decades, and as a result, renewed interest in city living has mounted, particularly among millennials and highly educated workers. One analysis of the country's 50 largest cities found that nearly one in five neighborhoods with lower incomes and home values have experienced gentrification since 2000. In several cities, including Portland, Seattle, and Washington, DC, over half of the neighborhoods have gentrified (Maciag, 2015). Historically, many of today's gentrifying neighborhoods had previously been segregated by both race and class, weakening key institutions, especially the local public schools. These schools have traditionally served primarily lower income Black and Latino[2] communities, and they have often had to operate on inferior resources, including fewer instructional materials, less technology, lower quality facilities, less qualified teachers, and less advanced curricula (Darling-Hammond, 2007; Hanushek & Rivkin, 2010; Lewis & Manno, 2011; Mickelson, 2003). In cities across the country, efforts to revitalize neighborhoods are often hampered by perceptions of underperforming schools. According to this narrative, a vicious cycle occurs in which cities are unable to sustain their housing stock and related tax bases, a situation that subsequently undermines schools, which depend on municipal resources (Patterson & Silverman, 2013). Today, gentrification creates a unique opportunity to revitalize urban neighborhoods and diminish segregation of races and classes, rebalancing the inequitable division of resources that is ubiquitous to public schools across the United States.

This brief is an extension of our recent study of Washington, DC's most rapidly gentrifying neighborhoods and their schools (Mordechay & Ayscue, 2017), where we found that while racial school segregation stubbornly persists in the nation's capital, it has declined modestly. The current study is an examination of the most rapidly gentrifying neighborhoods of New York City (NYC) and the impact of gentrification on racial diversity in the city's public schools.

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2 Consistent with the last U.S. Census this report uses the ethnic category Hispanic or Latino as interchangeable terms.

Case Study: New York City

In many respects, NYC is similar to other large American cities in that it has experienced broad changes in its demographic structure in recent decades. As in cities such as Los Angeles, Chicago, and Houston, the role of immigration in shaping the population has been a central reality. Furthermore, policy efforts to revitalize NYC, as well as other major American cities, have been underway since the 1980s (Barton, 2016). One important difference is, however, the size of the population of NYC. Current demographic estimates put the population of NYC at slightly more than eight million residents (8,239,803), which is well above that of Los Angeles and Chicago combined, the second and third largest cities. The stature of the greater metropolitan area of New York as one of the world's most populous urbanized areas goes back to at least the 1920s. The city consists of five boroughs, each of which is a separate county in the State of New York. It is, by all estimations, a global mega-city.

As the largest city in America, NYC operates the largest public-school district in the country. It is also one of the most segregated school systems in the nation (Kucsera & Orfield, 2014). The Supreme Court's unanimous decision in the landmark *Brown v. Board of Education* case was intended to eliminate de jure school segregation. School systems undertook desegregation efforts that peaked in the 1980s, and since then, schools across the nation have been de facto resegregating. NYC is no exception. Efforts over many years to reduce school segregation have had little lasting effect (Fessenden, 2012). In response to the persistence of segregation in its schools, in 2017 the NYC DOE released a plan to promote school diversity. The plan, *Equity and Excellence for All,* was a first step, laying out an approach to address racial and socioeconomic segregation in the city's schools.

Concurrently, metropolitan New York, with its starkly segregated neighborhoods, is experiencing a massive demographic transformation. The metro area is being rapidly reshaped as Blacks, Latinos, Asians, and immigrants are leaving the city and surging into the suburbs (Frey, 2018). NYC's Black population decline is notable, as the city has seen a loss of over 100,000 Black residents between 2000 and 2010 (Frey, 2011). Only Detroit and Chicago have experienced larger declines. The city's suburban rings are experiencing some of the largest absolute gains in Latino residents. Only the Riverside-San Bernardino metro area in Southern California has seen a greater Latino suburbanization (Frey, 2011; Mordechay, 2014). While NYC's White population has declined from 43% of the total in 1990 to approximately 33% in 2010, the White population has increased since 2010 but has declined in the New York suburbs. Meanwhile, since 1990, the city's demographic structure has become younger, more educated, and more likely to be made up of non-family households (Been et al., 2017). This transformation has been particularly acute in the city's gentrifying neighborhoods. In fact, across New York City, a quarter of

neighborhoods underwent gentrification[3] between 1990 and 2014 (Been et al., 2015). The share of New Yorkers identifying as Asian grew by 4.3 percentage points between 2000 and 2016, from 9.7% to 14.0%, as did the city's Latino population, increasing by over 2 percentage points, from 27.0% to 29.2%. Meanwhile, the city's Black and White shares both declined between 2000 and 2016, by 2.5 percentage points and 3.2 percentage points, respectively. These demographic changes, however, are not representative of the dramatic racial shifts found across many of the city's gentrifying neighborhoods. In Forte Green and Brooklyn Heights, the Asian population doubled between 2000 and 2016, while the White share increased from 31% to 45%. In nearby Bedford-Stuyvesant, during the same time period, the White population grew by a factor of 10, while the Black share declined from three-fourths of the total, to just over half (Been et al., 2017).

In 2017-18, the NYC DOE enrolled 1,135,334 students, including 113,528 students in charter schools. The city's enrollment was 16.1% Asian, 26.0% Black, 40.5% Hispanic, and 15% White; 13.5% of students were English language learners, and 74% were low income (New York City Department of Education, 2018).

This demographic transformation, which has been particularly drastic in the city's gentrifying communities, raises questions about the possibility of some of the city's long-segregated schools becoming more diverse as some of the city's long-segregated neighborhoods are becoming more diverse. Therefore, this study focuses on the following questions: 1. To what extent are elementary schools in NYC's gentrifying areas becoming more racially diverse, and how does the racial diversity of elementary schools in NYC's gentrifying areas compare to that of elementary schools in the city's non-gentrifying areas? 2. How do the student bodies in elementary charter schools compare to those of elementary traditional public schools in gentrifying and non-gentrifying areas of NYC?

Gentrification and Schools

In gentrifying areas of NYC and a growing number of other cities across the United States, there is evidence to suggest that a small but growing share of middle-class and White families is choosing to enroll their children in their neighborhood public schools (Mordechay & Ayscue, forthcoming; Freidus, 2016; Posey-Maddox, 2013; Stillman, 2012). Because residential and school segregation across the nation have traditionally had a reciprocal relationship where an increase in one leads to an increase in the other, the demographic phenomenon associated with gentrification where neighborhoods become more diverse has the potential to alleviate persistent school segregation, a major cause of educational inequity in the United States.

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[3] Defined as rapid rent growth in low-income neighborhoods.

Over the past several decades, there has been substantial gentrification of low-income neighborhoods in many of our nation's urban areas. These neighborhoods typically experience large increases in household income, in housing prices, and often in White residents. Some academics laud the revitalization of previously decayed neighborhoods, pointing out increases in neighborhood amenities and capital. Opponents of gentrification have been critical of the displacement of low-income, often minority households. Historically, gentrification has been tied to patterns of residential segregation, namely the "flight" of White and middle-class families (Logan, Oakley, & Stowell, 2008), most often resulting in eroding tax bases of cities and inner-ring suburbs, leaving them with fewer resources and greater challenges. The out-migration has been associated with the movement of middle-class families out of city schools, which is frequently cited as a contributing force behind the social and economic isolation of low-income urban neighborhoods (Kahlenberg, 2001; Wilson, 1987). For the decades that preceded the post-war suburban expansion, the abandonment of inner-city schools was a reflexive response of parents with the financial capital to move, so much so that it was assumed that upon having children, families with financial means would move to the suburbs, or if possible, send their children to private schools.

In the context of gentrification, where there is an increase in White and affluent residents in the inner city as opposed to a decrease as in the past, there are good reasons to examine the demographic patterns of change in the schools within these gentrifying neighborhoods. Since gentrifying neighborhoods have the residential diversity necessary for school diversity, we explore whether or not the potential educational and social benefits that could come from greater race and class diversity in schools are being realized in some of the nation's fastest gentrifying areas (Mordechay & Ayscue, 2017). Historically, gentrifiers have often been childless young professionals, artists, and gay and lesbian couples, and those who do have children have tended to pay for private school or exercise school choice when available in urban districts (Pearman & Swain, 2017). Studies have observed that gentrifiers have tended to put their children into select charter or public schools with other gentrifying families, resulting in little change to other schools in the area (Frankenberg, Taylor, & Mann, 2018; Kimelberg & Billingham, 2012). However, if gentrifiers enroll their children in public schools, it is possible that historically segregated schools could become more desegregated and begin to accrue the benefits associated with desegregation.

Housing and Schools

The relationship between schools and housing, often referred to as "the school-housing nexus," is complex and likely bidirectional. For example, it is widely believed that local public schools are a key determinant of housing prices (Kane, Staiger, & Riegg, 2006).

There is also increasing evidence that housing prices rise and fall with test scores (Black & Machin, 2011). School choice policies complicate this relationship, and although the relationship between school choice and gentrification remains little understood, one recent study found gentrification to be associated with greater school choice (Pearman & Swain, 2017). Therefore, investigating school segregation and enrollment patterns within gentrifying neighborhoods offers an opportunity not only to understand school enrollment trends, but also to consider how school enrollments in turn could shape residential patterns in the future. While demographic trends illustrated throughout this paper depict changes in neighborhood residential patterns, school enrollment patterns can provide key insights into whether or not incoming gentrifiers will remain in these spaces upon the arrival of children and invest in key institutions, or if they will do what gentrifiers of the past have done—move.

Defining Gentrification

Technical definitions of gentrification vary widely. Ruth Glass, a sociologist, is often credited with coining the term in 1964 to describe changes she encountered in formerly working-class neighborhoods in London. Since entering the mainstream lexicon, the word "gentrification" has been applied broadly and interchangeably to describe a range of neighborhood changes, including rising incomes and educational levels, shifting racial demographics, increases in commercial activity, and displacement of long-term residents. Generally speaking, one widely used definition is offered by *The Encyclopedia of Housing*, defining the phenomenon as "the process by which central urban neighborhoods that have undergone disinvestments and economic decline experience a reversal, reinvestment, and the in-migration of a relatively well-off, middle- and upper middle-class population" (Smith, 1998, p. 198).

For many other scholars, however, gentrification refers to more than just economic and demographic change. Some have suggested that conceptualizing gentrification must include the direct and indirect displacement of lower income households with higher income households (Kennedy & Leonard, 2001; Wyly & Hammel, 2005). While residential turnover in gentrifying neighborhoods is fiercely debated (Zuk et al., 2018; Freeman, 2005; McKinnish, Walsh, & White, 2010), for our purposes, we conceptualize gentrification as a process that involves the in-migration of higher-SES White residents, most often resulting in increases over time in median household income, higher educational attainment of residents, and the reduction of poverty. Given the overrepresentation of minorities among the urban poor and the overrepresentation of Whites among gentrifiers, it is reasonable to presume that gentrification entails the movement of predominantly White gentrifiers into predominantly Black and Latino inner-city communities. Indeed, more recent studies have suggested that gentrification is associated with the disproportionate influx of White college

graduates into a neighborhood (McKinnish et al., 2010; Ellen & O'Regan, 2011), spurring racial transition in the process. While the definitions of gentrification have been debated for at least 50 years (Zuk et al., 2018), in this study the in-migration of higher-SES White residents is used as a proxy for determining which neighborhoods in the city are most rapidly gentrifying (see Smith, 1998).

Data and Methods

Data Sources

This report draws primarily on data from two sources: the U.S. Census Bureau/American Community Survey (ACS) and the National Center for Education Statistics (NCES). Demographic data for the year 2000 was obtained from the 2000 decennial census. Demographic data for the year 2016 was obtained from the 2016 (5-year file) ACS. While the decennial census provides a "snapshot" of the U.S. population once every 10 years (e.g., 1990, 2000, 2010), the ACS is designed to provide communities with reliable and timely demographic, social, economic, and housing data each year. However, because the annual sample size of the ACS is much smaller than the sample size of the decennial census long form, the data from five years of the ACS must be combined to provide reliable estimates. Therefore, for convenience, the remainder of this report refers to the 2012–2016 ACS statistics as 2016 estimates.

Student demographic data was obtained from NCES. In addition, we utilized data from NCES (2014-2015) and used Geographic Information Systems (GIS) to show different patterns of spatial variation of schools.

Data Analysis

To determine which individual census tracts experienced the most dramatic increase in White residents between 2000 and 2016, we calculated the percentage point change in White residents from 2000 to 2016. The maps in Figure 1 descriptively illustrate the growth of the White population during this time period.

Figure 1. Distribution of White Residents, New York City, 2000 and 2016
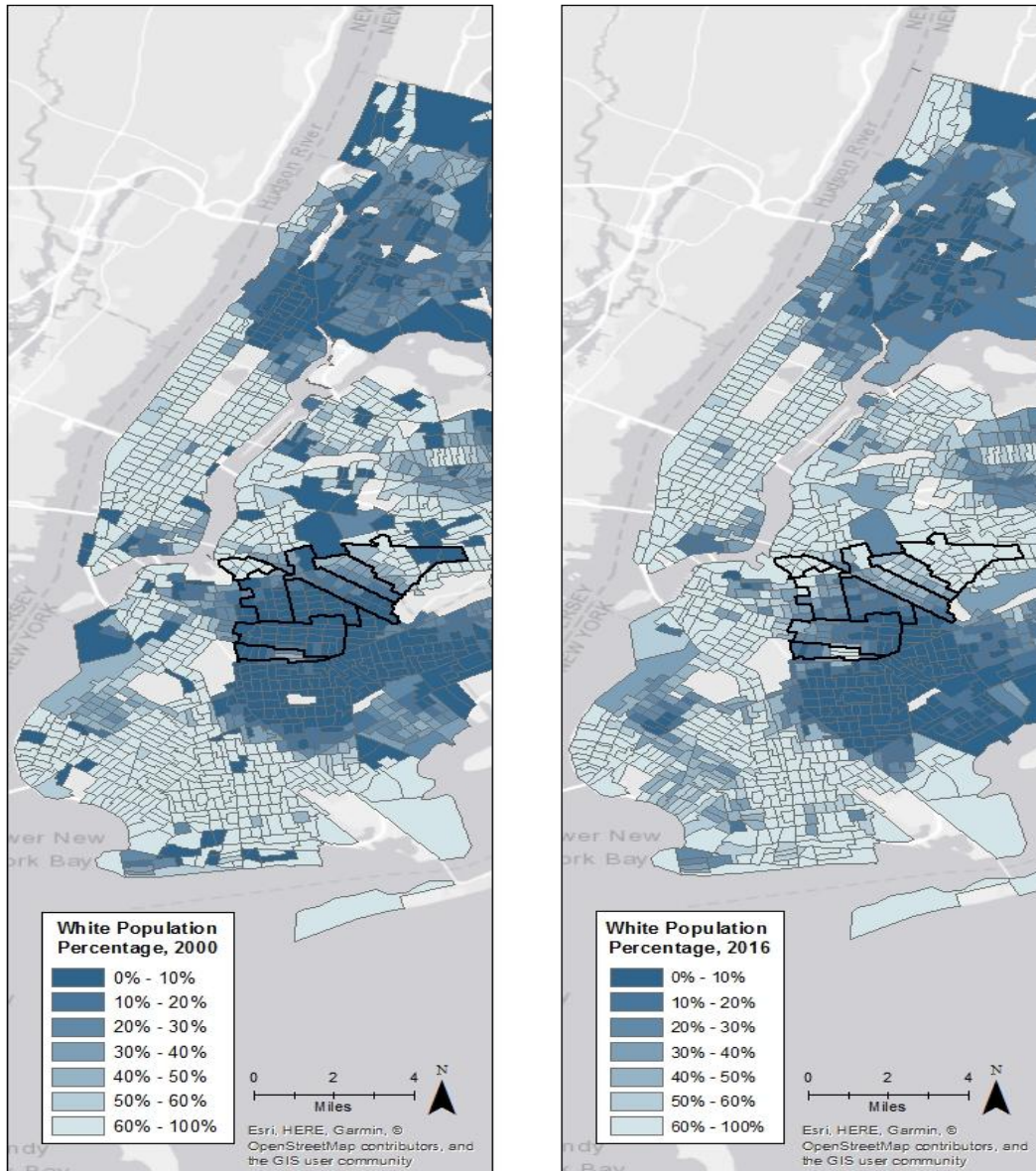
To identify the fastest gentrifying neighborhoods, we used census tracts as a statistical proxy to define neighborhoods. A typical census tract has about 4,000 residents, and as a general rule, conforms to what people typically think of as a neighborhood (Fry & Taylor, 2012). In NYC, there were 2,219 census tracts in 2000 and 2,169 in 2016, with populations generally ranging from 3,000-4,000. Although the Census Bureau updates these geographic units periodically, it attempts to keep changes to a minimum. Of those units with a minimum of 2,000 residents in 2016, we selected the top 25 census tracts with the largest percentage point increase in White residents between 2000 and 2016. Although racial change as a prerequisite for gentrification is widely debated in the gentrification literature

(see Freeman, 2005), race is in the forefront of our study because of our interest in understanding patterns of racial segregation and racial change in gentrifying urban neighborhoods and schools. For convenience, we will be referring to these 25 census tracts as the "fastest" or "most rapidly" gentrifying census tracts (Figure 2).

Figure 2. Fastest Gentrifying Census Tracts, New York City, 2016
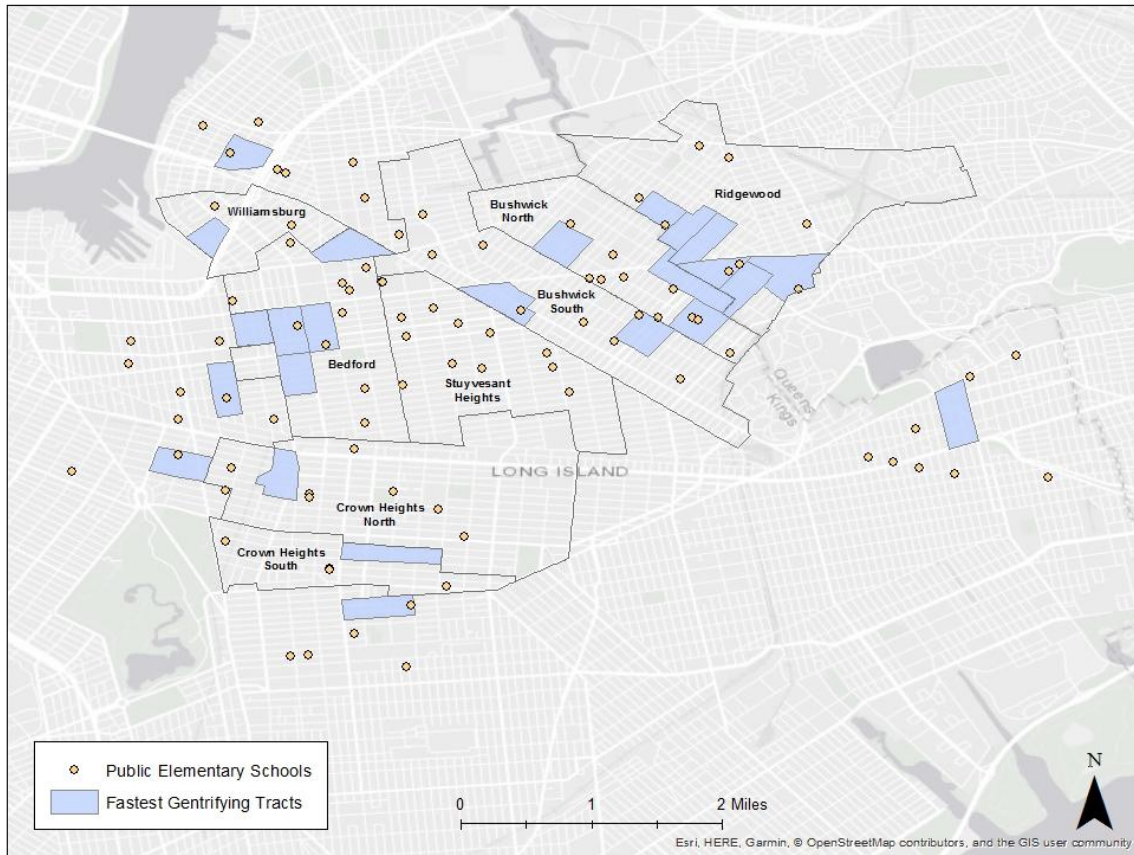
Next, we mapped the district's 2015–2016 school addresses (i.e., latitude and longitude), overlaid them with census tracts, and identified 109 *elementary* schools that fall within a half-mile radius from the center of each of the 25 most gentrifying census tracts. We defined elementary schools as those that have grade one enrollment. Because census tracts and school zone boundaries are not equivalent, we included schools that fall within a 0.5 mile of the gentrifying census tract. While the average NYC elementary-aged child has 13.9 schools within a one-mile radius of where they live (Blagg et al., 2018), we used a 0.5-mile buffer because elementary schools tend to draw from the immediate surrounding areas (Bayer, Ferreira, & McMillan, 2007). It should be noted though that students may be assigned to schools outside of 0.5 mile of the tract.

To analyze school segregation trends, we used two measures of segregation: concentration and exposure/isolation. To measure concentration, we calculated the percent of schools that are majority minority (enrolling 50-100% non-White students), intensely segregated (enrolling 90- 100% non-White students), and hypersegregated (enrolling 99-100% non-White students).

Exposure and isolation are measures of the potential contact between groups of students. Exposure refers to the degree of potential contact between students of one racial group and another racial group; isolation refers to the degree of potential contact between students of one group and other members of the same group (Massey & Denton, 1988). To measure exposure and isolation rates, we explored the percentage of a certain group of students (e.g., Black students) in school with a particular student (e.g., White student) in a larger geographical area, and computed the average of all these results. The basic model can be expressed as follows:

$$P^* = \sum_{i=1}^{n} \left(\frac{x_i}{X} * \frac{y_i}{t_i} \right)$$

- where n is the number of schools or smaller area units,
- x is the number of the first racial/socioeconomic/linguistic group of students in the school or smaller area i,
- X is the total number of the first racial/socioeconomic/linguistic group of students in the larger geographical area,
- y_i is the number of the second racial/socioeconomic/linguistic group of students in the school or smaller area i,
- t_i is the total number of students in the school or smaller area i.

We descriptively analyzed concentration and exposure/isolation at three time points: in 2001 (pre-gentrification), 2007 (mid-point), and 2015 (most recent year of data available).

It should be noted that this brief does not report data on students' eligibility for free and reduced lunch (FRL) after 2010. The use of FRL for research purposes is becoming increasingly challenging, due in large part to policy changes enacted by Congress in 2010 that expanded "community eligibility," which allows schools with at least 40% of students identified as eligible for FRL to provide free lunches to all of their students (Chingos, 2016). As a result, many schools that meet the 40% threshold will show 100% of students receiving FRL.

Findings

New York City's Shifting Residential and Demographic Patterns

As noted above, this study focuses on selected elementary schools in the 25 fastest gentrifying census tracts in NYC. These 25 tracts are all located in Queens and Kings (Brooklyn) counties, which are the two largest of the five boroughs of NYC (Figure 2). Since 2000, both Queens and Kings counties have seen growth in their populations (Table A-1). The 25 tracts have also experienced population increase of approximately 16% since 2000. During this same time period, the combined two counties and the entire city grew by 4.7% and 6.6%, respectively. In terms of household size, the gentrifying tracts have seen a much steeper increase in one- and two-person households, and conversely, a steep decline (10.6%) in four-person households (Figure A-1). This trend is not surprising since household size decreases are a common feature of gentrification: the share of low-income families typically declines, while the share of single young people and couples increases.

The racial changes in the city's most rapidly gentrifying tracts are also noteworthy. In the combined neighborhoods, the share of the White population has increased almost threefold, from 11% in 2000 to over 30% in 2016 (Figure 3). Within the same neighborhoods, the Black share declined substantially, from 28.7% of the total in 2000 to 17.4% in 2016. The number of Black residents in the 25 tracts also declined during this period, from approximately 24,000 to less than 17,000. In the same neighborhoods, while the Hispanic share declined from over 50% to 44%, the actual number of Hispanics increased slightly. Despite the substantial increase in White residents across the most rapidly gentrifying areas, city-wide and in the two counties, both the share of Whites and the total number of Whites declined between 2000 and 2016.

Figure 3. Racial Change, 2000 to 2016
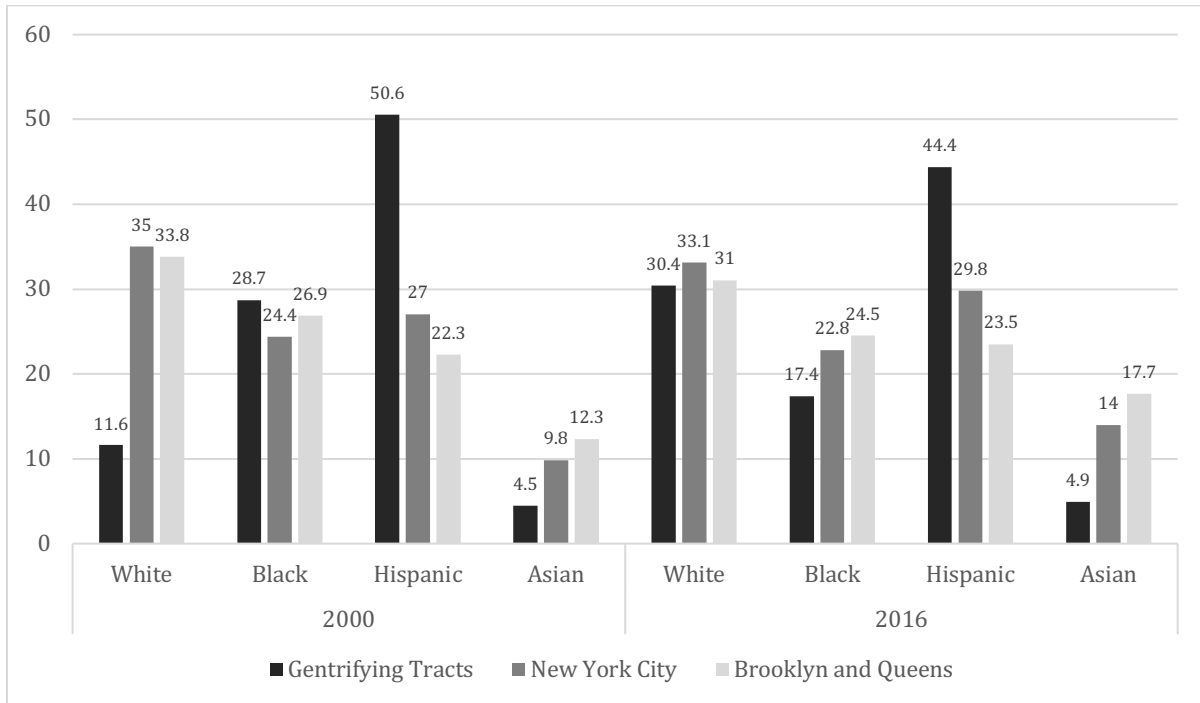
Source: Author's calculations using 2000 decennial census (U.S. Census Bureau, 2000) and 2016 (5-year average) American Community Survey microdata.
Note: White category are respondents that are White alone, not Hispanic or Latino.

As mentioned above, demographic analyses of cities with extensive gentrification have found that in-migrants to gentrifying areas are more likely to be young, White, college-educated, and without children (Sturtevant, 2014). However, our descriptive analysis of the toddler population (aged 0-5) and the school-aged population (aged 5-17) across NYC's most rapidly gentrifying areas reveals that in these age groups, the share of White children has grown substantially since 2000. The share of White toddlers has increased from 7% to 36% between 2000 and 2016 (Figure A-2). Conversely, both the share of and total number of Black, Latino, and Asian toddlers and school-aged children declined in the same neighborhoods. The combined share of Black and Latino toddlers has declined from 86% of the total in 2000 to 62% in 2016.

Turning to income, it is noteworthy that while inflation-adjusted incomes have increased slightly (3%) across NYC between 2000 and 2016, the growth has been much more substantial in the gentrifying tracts (Figure A-3). During the same time period, median household income in the 25 tracts grew from $37,516 in 2000 to $52,830 in 2016, an increase of almost 41%. The stark increase in median household income is likely explained by the gentrifying neighborhoods' influx of college-educated residents. As can be seen in Figure 4, on the aggregate, levels of educational attainment across NYC have increased, but the increases in the combined most rapidly gentrifying tracts has been much more

substantial. Since 2000, in the most rapidly gentrifying tracts, the share of residents with bachelors' degrees and higher level degrees has tripled, from 11% to 33%. During the same time period, the share of New Yorkers with bachelors' degrees and higher increased from 28% to 36%. Conversely, in the city's most rapidly gentrifying areas, the share of those without a high school diploma dropped from 45% to 25% from 2000 to 2016. In NYC, the rate declined from 27% in 2000 to 20% in 2016.

Figure 4. Changes in Educational Attainment, 2000 to 2016

Source: Author's calculations using 2000 decennial census (U.S. Census Bureau, 2000) and 2016 (5-year average) American Community Survey microdata.
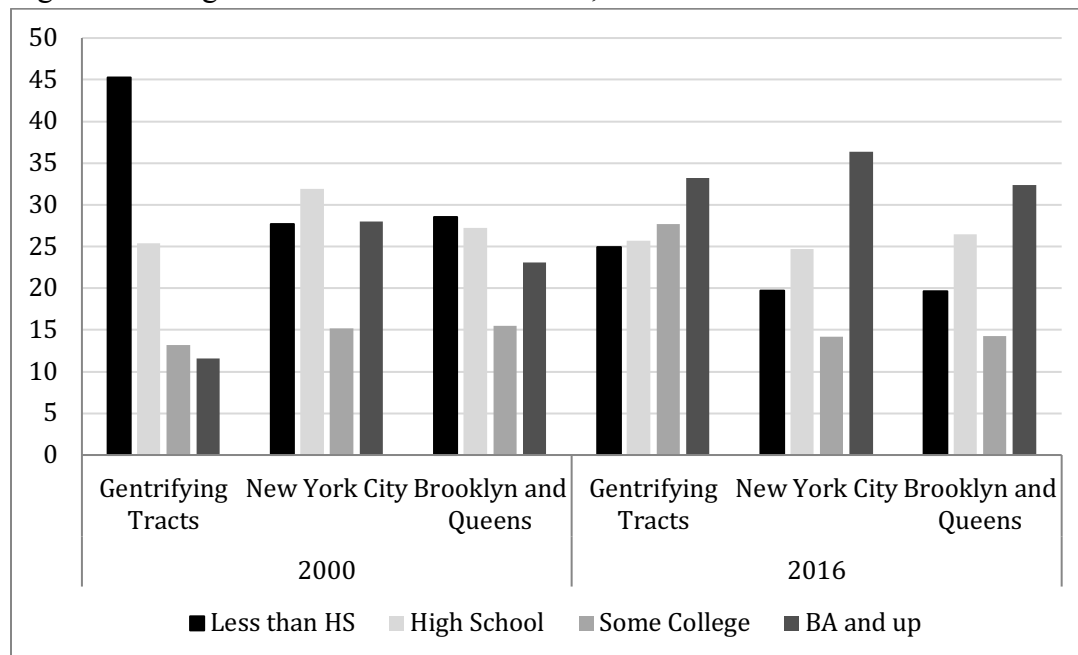
Another indicator of economic changes can be seen in shifting poverty rates. Gentrifiers often find themselves moving into communities with high concentrations of poverty (Goetz, 2011). Not surprisingly, in NYC's most rapidly gentrifying neighborhoods, the poverty rate has declined by 22% over the last decade and a half, decreasing from 27.3% to 21.3% (Figure A-4). In NYC, the poverty rate has declined as well, albeit much less dramatically, down from 18.4% of all residents in 2000 to 17.9% in 2016.

Enrollment and Segregation in New York City Elementary Schools (TPS and Charters Combined)

Enrollment in elementary schools across NYC has been increasing over the last 15 years. Overall, both the number of elementary schools and the number of elementary school students has increased. In gentrifying areas, the number of elementary public *schools* (TPS

and charters combined) increased from 71 in 2001 to 105 in 2015, but the number of *students* enrolled in elementary public schools followed a different trend, with a declining enrollment from 52,382 in 2001 to 51,608 in 2015 (Table 1). In non-gentrifying areas across the city, both the number of elementary schools and students increased (Table 2).

Alongside these changes, the racial composition of elementary student enrollment in gentrifying areas also has shifted. The Black share of enrollment decreased from 50.3% in 2001 to 42.6% in 2015 but the share of White, Hispanic, and Asian enrollment increased. While the share of White and Asian students increased, they both remained relatively small in 2015 (6.5% and 3.9%, respectively). Black students comprised the largest segment of enrollment in 2001, but in 2015, Hispanic students accounted for a slightly larger share of enrollment than Black students. The share of low-income students declined from 89.6% in 2001 to 81.8% in 2007.

Table 1. Elementary School Enrollment in Gentrifying Areas

	Number of Elementary Schools	Enrollment	White	Black	Hispanic	Asian	FRL
2001	71	54,382	2,104 (3.9%)	27,374 (50.3%)	23,082 (42.4%)	1,503 (2.8%)	48,732 (89.6%)
2007	80	44,607	2,022 (4.5%)	21,295 (47.7%)	19,577 (43.9%)	1,504 (3.4%)	36,480 (81.8%)
2015	105	51,608	3,366 (6.5%)	22,005 (42.6%)	23,307 (45.2%)	1,999 (3.9%)	n/a

Source: National Center for Education Statistics Common Core of Data
Note: Enrollment by race may not add up to total enrollment number because enrollment of other racial groups (American Indian/Alaska Native, Native Hawaiian/Pacific Islander, two or more races) are not included in this table. Percentages may not add up to 100% because shares of other racial groups (American Indian/Alaska Native, Native Hawaiian/Pacific Islander, two or more races) are not included in this table.

Table 2. Elementary School Enrollment in Non-Gentrifying Areas

	Number of Elementary Schools	Enrollment	White	Black	Hispanic	Asian	FRL
2007	681	437,555	72,354 (16.5%)	125,846 (28.8%)	171,950 (39.3%)	65,467 (15.0%)	330,421 (75.5%)
2015	828	518,290	85,021 (16.4%)	129,222 (24.9%)	209,948 (40.5%)	82,983 (16.0%)	n/a

Source: National Center for Education Statistics Common Core of Data
Note: Enrollment by race may not add up to total enrollment number because enrollment of other racial groups (American Indian/Alaska Native, Native Hawaiian/Pacific Islander, two or more races) are not included in this table. Percentages may not add up to 100% because shares of other racial groups (American Indian/Alaska Native, Native Hawaiian/Pacific Islander, two or more races) are not included in this table.

The increase in elementary enrollment of White students in gentrifying areas is in line with the findings from other studies that have found middle-class and White families increasingly choosing neighborhood public schools (Mordechay & Ayscue, 2017; Friedus, 2016; Stillman, 2012). Numerous studies have also suggested that gentrifying families tend to cluster their children into a few "vetted" schools, indicating they are not comfortable sending their children to a neighborhood public schools unless other gentrifier families are also attending (Jordan & Gallagher, 2015; Kimelberg & Billingham, 2012; Hulchanski, 2010). This trend, in effect, does very little to alleviate school segregation in gentrifying neighborhoods as gentrifier families cluster their children in enclaves, resulting in little benefit from their influxes. To test for a "clustering effect," we examined the distribution of White enrollment across all the elementary schools in the most rapidly gentrifying neighborhoods. While close to four-fifths of all the elementary schools in these neighborhoods had less than 5% White enrollment in 2015, nine total schools had more than 25% White enrollment. In addition, six schools had over 30% Whites and no school had over 50% White enrollment (Figures A-5 and A-6).

In non-gentrifying areas, a somewhat similar pattern emerged. The share of Black elementary school students declined from 28.8% in 2007 to 24.9% in 2015 while the share of Hispanic and Asian students increased (Table 2). Unlike gentrifying areas, in non-gentrifying areas, the White share of elementary enrollment remained steady at 16.4-16.5%.

Despite the shifts in racial enrollment, White elementary school students accounted for a substantially larger share of student enrollment in non-gentrifying areas than in gentrifying areas in 2015 (16.4% vs. 6.5%, respectively). Similarly, Asian elementary

students comprised a larger share of enrollment in non-gentrifying areas than in gentrifying areas in 2015 (16.0% vs. 3.9%, respectively). Black elementary students comprised a much larger share of enrollment in gentrifying areas than in non-gentrifying areas in 2015 (42.6% vs. 24.9%, respectively). Hispanic elementary students accounted for a large share of enrollment in both areas—45.2% in gentrifying areas and 40.5% in non-gentrifying areas.

Across the city, the elementary public school enrollment is majority students of color, with Hispanic students accounting for a large share of enrollment in both gentrifying and non-gentrifying areas. While the racial composition of elementary schools in gentrifying areas has changed somewhat, the schools' enrollments remain predominantly students of color.

An examination of intensely segregated and hypersegregated elementary schools in gentrifying and non-gentrifying areas reveals interesting patterns. All the elementary schools in gentrifying areas are majority minority (Table 3). Within this context, in gentrifying areas, the *number* of intensely segregated and hypersegregated elementary schools has *increased*; however, the *share* of such schools has *decreased*. For intensely segregated schools, the share declined from 91.5% in 2001 to 82.9% in 2015. At the most extreme level of segregation, hypersegregated schools that enroll 99-100% non-White students, in gentrifying areas, the share decreased overall from 46.5% in 2001 to 41.0% in 2015. Since 2007, the decline of hypersegregated schools in gentrifying areas was even more dramatic, dropping from 53.8% to 41% in 2015.

Table 3. Segregation Concentration in Gentrifying Areas

	Majority Minority (50-100% non-White)	Intensely Segregated (90-100% non-White)	Hypersegregated (99-100% non-White)
2001	71 (100%)	65 (91.5%)	33 (46.5%)
2007	80 (100%)	74 (92.5%)	43 (53.8%)
2015	105 (100%)	87 (82.9%)	43 (41.0%)

Source: National Center for Education Statistics Common Core of Data

In non-gentrifying areas, both the *number* and *share* of intensely segregated and hypersegregated elementary schools increased (Table 4). In 2007, just over half of the

elementary schools in non-gentrifying areas were intensely segregated but by 2015, almost two-thirds of the elementary schools in non-gentrifying areas were intensely segregated (50.5% and 65.3%, respectively). The share of hypersegregated elementary schools increased slightly, from 27.2% in 2007 to 29.5% in 2015.

Table 4. Segregation Concentration in Non-Gentrifying Areas

	Majority Minority (50-100% non-White)	Intensely Segregated (90-100% non-White)	Hypersegregated (99-100% non-White)
2007	600 (69.5%)	436 (50.5%)	235 (27.2%)
2015	740 (89.4%)	541 (65.3%)	244 (29.5%)

Source: National Center for Education Statistics Common Core of Data

There are much larger shares of intensely segregated and hypersegregated elementary schools in gentrifying areas in comparison to non-gentrifying areas. In 2015, 82.9% of elementary schools in gentrifying areas were intensely segregated compared to 65.3% in non-gentrifying areas. At the most extreme level of segregation, in 2015, 41.0% of elementary schools in gentrifying areas remained hypersegregated compared to 29.5% in non-gentrifying areas. While the levels of segregation in non-gentrifying areas might appear favorable when compared to gentrifying areas, it is important to remember that these levels of segregation are still very high. It should also be noted that while there is a larger share of intensely segregated and hypersegregated elementary schools in gentrifying areas in comparison to non-gentrifying areas, the shares of intensely segregated and hypersegregated schools have *declined* in gentrifying areas. This trend is the reverse of that found in non-gentrifying areas, where the shares of intensely segregated and hypersegregated elementary schools have *increased.*

When examining the exposure of students of each racial group to White students, we found that in both gentrifying and non-gentrifying areas, the typical Black elementary school student was exposed to the smallest share of White students (Tables A-2 and A-3). In 2015, in gentrifying areas, the typical Black elementary school student attended a school in which 3.5% of schoolmates were White students, which is an increase from the 1.3% of White students with whom the typical Black student attended school in 2001; however, it is still a very small share of White students to whom the typical Black student was exposed in 2015 in gentrifying areas. In 2015, in non-gentrifying areas, the typical Black elementary school student attended a school with 5.5% White students, which was similar to the 5.6% of

White students in 2007. In both areas, the typical Asian elementary school student attended a school with the largest share of White students. Despite the increase in exposure to White students in gentrifying areas, the typical Black, Hispanic, and Asian elementary school students attended a school with a larger share of White students in non-gentrifying areas than in gentrifying areas in 2015.

Analyzing at the level of isolation of various racial groups, we found that in both gentrifying and non-gentrifying areas, the typical Black and Hispanic elementary school students were isolated with a majority of same-race peers (Tables A-4 and A-5). The isolation of Black students with same-race peers decreased, more so in gentrifying areas than in non-gentrifying areas. In gentrifying areas, the typical Black elementary school student attended a school with 75.9% Black schoolmates in 2001 and 67.4% Black schoolmates in 2015. The isolation of Hispanic students remained fairly steady in both gentrifying and non-gentrifying areas. For both the typical Black student and the typical Hispanic student, isolation with same-race schoolmates was greater in gentrifying areas than in non-gentrifying areas (about 66% in gentrifying areas and 56% in non-gentrifying areas). In 2015, the typical Black student in a gentrifying area attended a school with 67.4% Black schoolmates while the typical Black student in a non-gentrifying area attended a school with 55.2% Black schoolmates. In 2015, the typical Hispanic elementary school student in a gentrifying area attended a school with 65.5% Hispanic schoolmates and the typical Hispanic student in a non-gentrifying area attended a school with 57.1% Hispanic schoolmates. The isolation of Asian students with same-race peers increased slightly in both gentrifying and non-gentrifying schools (to 11.1% and 43.2% in 2015, respectively). The isolation of White students remained steady in both gentrifying and non-gentrifying areas, but the typical White student was isolated with more same-race schoolmates in non-gentrifying areas than in gentrifying areas in 2015 (46.2% vs. 23.3%, respectively).

In summary, regarding Research Question 1, we found that elementary schools in NYC's gentrifying areas are becoming more racially diverse as the share of white student enrollment increases. However, the schools are not keeping pace with the more rapidly increasing overall or school-aged change in the white population. The shares of intensely segregated (90-100% non-White) and hypersegregated (99-100% non-White) elementary schools *declined* in gentrifying areas of NYC, while the shares of intensely segregated and hypersegregated elementary schools *increased* in non-gentrifying areas.

Enrollment and Segregation Patterns by School Type

Different patterns emerged when we analyzed the data by school type. In gentrifying areas, elementary TPS continued to enroll a larger number of students than elementary charter schools in 2015 (38,129 and 13,479, respectively); however, overall student enrollment in

charter schools increased by 356% while enrollment in TPS decreased by 8% (Table 5). The share of White students increased in both types of schools, and a larger share of White students attended TPS than charter schools in 2015 (8.1% and 2.0%, respectively). Similarly, the share of Hispanic students increased in both types of schools and a larger share of Hispanic students also attended TPS than charter schools in 2015 (51.5% and 27.3%, respectively). Conversely, the share of Black students declined in both types of schools and a larger share of Black students attended charters than TPS in 2015 (67.3% and 33.9%, respectively).

Table 5. Elementary School Enrollment by School Type in Gentrifying Areas

	Number of Elementary Schools	Enrollment	White	Black	Hispanic	Asian	FRL
2007							
Charter	9	2,953	22 (0.7%)	2,460 (83.3%)	445 (15.1%)	13 (0.4%)	2,244 (76.0%)
TPS	71	41,654	2,000 (4.8%)	18,835 (45.2%)	19,132 (45.9%)	1,491 (3.6%)	34,236 (82.2%)
2015							
Charter	27	13,479	263 (2.0%)	9,066 (67.3%)	3,676 (27.3%)	236 (1.8%)	n/a
TPS	78	38,129	3,103 (8.1%)	12,939 (33.9%)	19,631 (51.5%)	1,763 (4.6%)	n/a

Source: National Center for Education Statistics Common Core of Data
Note: Enrollment by race may not add up to total enrollment number because enrollment of other racial groups (American Indian/Alaska Native, Native Hawaiian/Pacific Islander, two or more races) are not included in this table. Percentages may not add up to 100% because shares of other racial groups (American Indian/Alaska Native, Native Hawaiian/Pacific Islander, two or more races) are not included in this table.

Patterns by school type are similar in non-gentrifying areas (Table A-6). As is the case in gentrifying areas, the share of White and Hispanic elementary school students increased while the share of Black elementary school students decreased in both charters and TPS in non-gentrifying areas. In 2015, larger shares of White and Hispanic elementary school students were enrolled in TPS (17.8% and 41.2%, respectively) than in charters (5.1% and 35.0%, respectively). Conversely, in 2015, a larger share of Black elementary school

students was enrolled in charters than in TPS in non-gentrifying areas (55.2% and 21.1%, respectively), as well as in gentrifying areas.

Exploring the extent of segregation in elementary schools in gentrifying areas, we found that the shares of intensely segregated and hypersegregated schools decreased in both the charter and TPS sectors (Table 6). However, the overwhelming majority of charter schools remained intensely segregated or hypersegregated in 2015. In 2015, nine out of 10 elementary charter schools were intensely segregated, and at the most extreme level of segregation—hypersegregation—three out of four charters remained hypersegregated, enrolling 99-100% non-White students. For elementary TPS, in 2015, 79.5% of elementary TPS were intensely segregated, but at the most extreme level of segregation, a substantially smaller share of schools (28.2%) was hypersegregated.

Table 6. Segregation Concentration by School Type in Gentrifying Areas

	Majority Minority (50-100% non-White)	Intensely Segregated (90-100% non-White)	Hypersegregated (99-100% non-White)
2007			
Charter	9 (100%)	9 (100%)	8 (88.9%)
TPS	71 (100%)	65 (91.5%)	35 (49.3%)
2015			
Charter	27 (100%)	25 (92.6%)	21 (77.8%)
TPS	78 (100%)	62 (79.5%)	22 (28.2%)

Source: National Center for Education Statistics Common Core of Data

Likewise, in non-gentrifying areas, the shares of intensely segregated elementary schools decreased in both the charter and TPS sectors (Table 7). A larger share of elementary charters than elementary TPS in non-gentrifying areas remained intensely segregated in 2015 (86.7% and 61.7%, respectively). The share of elementary hypersegregated schools also declined in both types of schools in non-gentrifying areas. Again, a substantially larger share of elementary charters than TPS was hypersegregated in non-gentrifying areas in

2015 (62.5% and 23.9%, respectively). Overall, larger shares of both charters and TPS were intensely segregated and hypersegregated in gentrifying areas than in non-gentrifying areas in 2015.

Table 7. Segregation Concentration by School Type in Non-Gentrifying Areas

	Majority Minority (50-100% non-White)	Intensely Segregated (90-100% non-White)	Hypersegregated (99-100% non-White)
2007			
Charter	38 (100%)	34 (89.5%)	30 (78.9%)
TPS	562 (87.4%)	402 (62.5%)	205 (31.9%)
2015			
Charter	118 (98.3%)	104 (86.7%)	75 (62.5%)
TPS	622 (87.9%)	437 (61.7%)	169 (23.9%)

Source: National Center for Education Statistics Common Core of Data

In both charters and TPS in gentrifying areas, the typical Black elementary school student was exposed to the smallest share of White schoolmates while the typical Asian elementary school student was exposed to the largest share of White schoolmates (Table A-7). The typical Black, Hispanic, and Asian elementary school students were exposed to a larger share—often double or triple—of White students in TPS than in charters. In 2015, the typical Black student in a TPS attended a school with 5.1% White schoolmates and the typical Black charter school student attended a school with 1.2% White students. In 2015, the typical Hispanic student in a TPS attended a school with 7.3% White students while the typical Hispanic charter school student had 2.4% White schoolmates. Exposure to White students remained small in both types of schools in gentrifying areas.

Similarly, in non-gentrifying areas, in both charters and TPS, the typical Black elementary school student was exposed to the smallest share of White schoolmates while the typical Asian elementary school student was exposed to the largest share of White schoolmates (Table A-8). The typical Black, Hispanic, and Asian elementary school students in a TPS

were exposed to a larger share of White students than the typical Black, Hispanic, and Asian elementary school students in a charter school. In 2015, the typical Black elementary school student in a non-gentrifying area who attended a charter school had 2.7% White schoolmates, and the typical Black student in a TPS attended a school with 6.4% White students. In 2015, the typical Hispanic charter school student in a non-gentrifying area attended a charter elementary school with 4.6% White students while the typical Hispanic TPS student attended an elementary school with 10.9% White students. The typical Asian student in a non-gentrifying charter attended a school with 13.8% White students and the typical Asian student in a non-gentrifying TPS attended a school with 17.7% White students. Exposure to White students was greater in both types of schools in non-gentrifying areas than in gentrifying areas; however, there are low levels of exposure to White students in all areas and types of schools.

In both charters and TPS in gentrifying areas, the typical Black and Hispanic elementary school students were isolated with high levels of same-race peers (Table A-9). The typical Black elementary school student was isolated with more same-race peers in charter schools than in TPS while the typical Hispanic elementary school student was isolated with more same-race peers in TPS than in charters. In 2015, in gentrifying areas, the typical Black charter school student had 75.4% Black schoolmates while the typical Black TPS student had 61.8% Black schoolmates. Conversely, the typical Hispanic charter student attended a school with 44.8% Hispanic schoolmates while the typical Hispanic TPS student's school had 69.3% Hispanic students. The typical White and Asian elementary school students also attended schools with more same-race peers in TPS than in charters, which is likely related to the larger share of White and Asian students who attended TPS than charters. The typical White TPS student attended a school that was 24.0% White while the typical White charter student attended a charter that was 14.8% White in gentrifying areas in 2015.

Mirroring the patterns in gentrifying areas, in both charters and TPS in non-gentrifying areas, the typical Black elementary school student was isolated with more same-race peers in charter schools than in TPS while the typical Hispanic elementary school student was isolated with more same-race peers in TPS than in charters (Table A-10). In 2015, the typical Black charter school student in a non-gentrifying area had 67.9% Black schoolmates while the typical Black TPS student in a non-gentrifying area had 51.0% Black schoolmates. In 2015, in non-gentrifying areas, the typical Hispanic charter student attended a school with 49.9% Hispanic schoolmates while the typical Hispanic TPS student's school had 57.9% Hispanic students. The typical White and Asian elementary school students also attended schools with more same-race peers in TPS than in charters. In non-gentrifying areas in 2015, the typical White TPS student attended a school that was 46.8% White while the typical White charter student attended a charter that was 28.4% White.

In summary, in addressing Research Question 2, we found that while the share of White students increased in both elementary charter schools and elementary TPS in gentrifying areas, a larger share of White students attended TPS than charter schools in 2015. Both elementary charter schools and elementary TPS in gentrifying areas experienced a decrease in the share of intensely segregated and hypersegregated schools between 2000 and 2015; however, the overwhelming majority of charter schools remained intensely segregated or hypersegregated in 2015. In gentrifying areas in 2015, at the most extreme level of segregation—hypersegregation—77.8% of charters were hypersegregated, enrolling 99-100% non-White students, while a substantially smaller share of TPS (28.2%) was hypersegregated.

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Housing and Education Policy Responses to Gentrification

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Over the past two decades, gentrification has become a central reality in many urban neighborhoods across the nation (U.S. Department of Housing and Urban Development, 2016; Maciag, 2015). Managing this urban transformation such that it supports school integration will require thoughtful, coordinated, and targeted policies that underscore the deep and fundamental relationships among housing markets, communities, and schools. In fact, under the Obama Administration, the Departments of Housing and Urban Development, Education, and Transportation issued a joint letter in 2016 encouraging local education, transportation, and housing and community development agencies to work together to create socioeconomic and racial diversity in schools and communities (U.S. Department of Housing and Urban Development, 2016). In the context of gentrification, policy responses should be constructed with the goal of racial and economic integration.

Housing

Housing costs have skyrocketed across many of the nation's metro areas, with gentrifying neighborhoods, in particular, putting enormous supply pressure on highly desirable housing markets. In NYC, between 2011 and 2017, the city lost nearly 183,000 affordable units of housing renting for less than $1,000 per month—larger than the entire public housing stock. In addition, between 2009 and 2017, rents across the city rose by 25%, with the most rapid increase in Brooklyn (35%) (Stringer, 2018). Therefore, at the core of managing gentrification is the preservation and production of affordable housing. While hundreds of thousands of affordable housing units are lost from disrepair each year (Schwartz et al., 2016), the federal government should prioritize the preservation and production of affordable properties that are in "opportunity-rich neighborhoods." Affordable housing units in gentrifying neighborhoods offer the possibility of better access to job opportunities, social networks, and possibly schools. One recent study of New York

Housing Authority (NYHA) compared housing developments located in gentrified or rapidly changing neighborhoods with those in low-income and racially segregated neighborhoods. The researchers found that those in gentrifying neighborhoods, on average, enjoyed higher incomes, lower crime rates, and higher test scores in local schools (Dastrup et al., 2015). While the extent of "social mixing" among different racial and social class groups has been debated (Lees, 2008; Davidson, 2010), one possibility is to replace existing high-density housing "projects" with new lower density mixed-income communities. There is evidence that residents across the income spectrum in well-designed mixed-income developments report satisfaction with housing and neighborhood (Levy, McDade, & Dumlao, 2010). In fact, the Federal Department of Housing and Urban Development's (HUD) Housing Opportunities for People Everywhere (HOPE VI) Program has been used to encourage social interaction across race and income lines, albeit the evidence of interaction across income or racial groups in these developments has been mixed (Silver, 2013).

In addition, there is increasing evidence that Airbnb and other home-sharing platforms are growing in influence, causing rents to increase significantly in highly desirable and gentrifying neighborhoods, particularly in Manhattan and Brooklyn, where the majority of the company's rentals are concentrated (Wachsmuth & Weisler, 2018). Airbnb has more than 50,000 apartment listings in NYC, making it the company's largest market in the United States (Stringer, 2018). The city should consider adopting regulations from other cities (such as Amsterdam, San Francisco, and Santa Monica) that have recently passed legislation regulating online vacation rental services, such as Airbnb and Homeaway. The number of Airbnb listings in San Francisco, for example, plunged by half after the city tightened its regulation in an effort to increase the supply of affordable housing in one of the nation's least affordable markets (Said, 2018).

HUD recently released a report (2016) laying out a broad-based approach to housing affordability in gentrifying areas. These recommendations include preserving existing affordable housing through rental assistance demonstrations, housing choice vouchers, and preservation-friendly incentives. In addition to preserving existing affordable units, greater development of rental units at all levels can reduce pressure on the rental market, lowering housing costs and expanding housing choice for residents, particularly in gentrifying areas with significant rent growth. For example, The Philadelphia Association of Community Development Corporations (PACDC) has been attempting to address housing affordability in gentrifying areas of Philadelphia with an equitable development policy platform. PACDC published a report (Philadelphia, 2018) titled, *Beyond Gentrification, Toward Equitable Neighborhoods*, which outlines five strategic recommendations: strengthen community organizations, build and preserve affordable housing, develop neighborhood commercial corridors as job centers for local residents, collect and analyze data to achieve a bettering understanding of the issues related to displacement, and improve assistance programs.

In San Francisco, where there is extensive gentrification, displacement, and a full-blown housing shortage, the city's planning office and mayor's office are currently working to draft a "Community Stabilization Strategy." This inter-agency effort seeks to provide city agencies, decision-makers, and the public with a comprehensive analysis and the tools needed to make strategic decisions to stabilize vulnerable populations as the city changes. The aim of this effort is to mitigate the impacts of ongoing displacement, help prevent future displacement due to economic and population growth, and better manage economic growth in order to offer benefits to existing communities with a focus on vulnerable populations.

Up the coast from San Francisco, Seattle is attempting to deal with extensive gentrification and a housing crunch, as big technology companies, such as Amazon, continue to transform the city's housing market. Policies include creating more affordable housing that is rent-restricted for low-income people, and the drafting of "The Equitable Development Initiative" with the purpose of mitigating displacement and increasing access to opportunity for Seattle's marginalized communities who are at risk of displacement (Seattle, 2018). In addition, the Rainy City's Mandatory Housing Affordability (MHA) program is requiring that developers contribute to affordable housing whenever they build within commercial areas of the city. The program, currently in place in several neighborhoods, has sensitively approached areas that are at risk of high levels of displacement. While balancing the need to make the program attractive for developers with the desire to maximize affordability, Seattle is carefully rezoning areas with the goal of minimizing displacement.

NYC and other cities could potentially benefit from strategies and recommendations similar to those just described, which aim to ensure that those who are most disadvantaged in today's social and economic systems are given opportunities to benefit from improving neighborhoods in cities. With such strategies in place, gentrification can provide a path to economic opportunity for more inner-city residents and residents of color. But absent policy intervention, such outcomes are unlikely to occur.

Schools

Policies that actively promote racial and socioeconomic diversity in schools should also be encouraged. Local TPS can serve as attractive schooling options for diverse groups of families and students. In order to attract a diverse group of gentrifier families and previous residents, TPS could assess the needs of both groups of families by discussing their needs and desires with them and building programming to address their preferences. Through marketing efforts in print, radio, and social media, TPS can ensure that residents are aware

of the school and its offerings. Making realtors aware of the local TPS and enlisting their assistance in sharing information about the school could also be effective (Mordechay & Ayscue, 2018).

Magnet schools can be used to attract both gentrifier families and previous residents. Magnets provide unique curricular and pedagogical offerings that are often of interest to diverse groups of students. Historically, magnets have included civil rights goals, and in addition to improved academic outcomes, they often foster integration (Siegel-Hawley & Frankenberg, 2012). In particular, gentrifying areas with high numbers of English language learners could develop two-way immersion magnet programs that enroll half native Spanish speakers and half native English speakers. In addition to developing opportunities for bilingualism, biliteracy, and biculturalism, these programs create opportunities for integrated learning environments. Moreover, dual language programs have exceptional academic outcomes for all students (Gándara & Mordechay, 2017; Umansky & Reardon, 2014). Dual language programs are very popular and can be found in metropolitan areas across the country (Gándara & Hopkins, 2010). Other magnet themes, such as experiential learning, STEAM (science, technology, engineering, arts, and mathematics), or leadership, also offer the potential for attracting diverse groups of students in gentrifying areas.

The federal Magnet Schools Assistance Program administers competitive grants for school districts seeking to create racially desegregated magnets in previously segregated schools. A recent study of 24 school districts receiving such grants across the nation identified numerous strategies that are important for enrolling a racially diverse student body (Ayscue, Levy, Siegel-Hawley, & Woodward, 2017). These mechanisms include selecting an attractive and relevant theme such as those suggested above, conducting outreach, providing free and accessible transportation, encouraging inter-district choice, intentionally selecting a diverse site, and employing lottery-based admissions.

Placing similar requirements for racial and economic diversity on charter schools in gentrifying areas also presents an opportunity for desegregation and educational equity. Given the expansion of charter schools in NYC and nationwide, it is essential that charters facilitate desegregation rather than contribute to resegregation. As this report shows, charter schools in both gentrifying and non-gentrifying areas of NYC tend to be more segregated than TPS. Thus, it is critical for these highly segregated charters to take steps to alleviate segregation. Charters could facilitate greater desegregation by selecting a diverse neighborhood in which to locate, creating diversity goals, providing information to diverse groups of families, using weighted lotteries for admission, and providing free and accessible transportation (Ayscue & Frankenberg, 2018). Regional charter schools with appropriate civil rights protections could also play a role in fostering integration.

While gentrifying districts may develop new programs to attract gentrifier families, implementing equitable diversity policies can help ensure that schools across the district are diverse (Diem, Holme, Edwards, Haynes, & Epstein, 2018). Without such policies, it is likely that programming intended to attract gentrifier families could negatively impact diversity and diminish the distribution of opportunity among schools within a school district. This caution applies widely to urban areas across the country, including NYC, that are experiencing gentrification at a substantial rate and therefore hold the potential to make their schools more equitable and diverse.

Conclusion

The possibilities for creating diverse learning environments as gentrification unfolds are occurring on a small, localized scale in NYC's gentrifying areas. However, much more progress is still needed. In the city's most rapidly gentrifying census tracts, where the White population has increased from approximately 11% to over 30% between 2000 and 2016, local school enrollment patterns have experienced an increase in White students from 3.9% to 6.5%. Although public schools located in gentrifying areas of NYC remain predominantly non-White and highly segregated, they have become more diverse and less segregated since 2001, more so in TPS than in charters.

The racial segregation of neighborhoods is strongly related to the racial segregation of schools within them (Clotfelter, 2004). Gentrification is a growing phenomenon that has considerable potential to influence neighborhoods as well as the local schools within them. This reinvestment of capital in under-resourced urban communities has the effect of putting the affluent and the poor, and different racial and ethnic groups, in the same neighborhoods, with the potential to do the same in schools. Since over half a century of research has consistently shown that racial segregation and concentrated poverty rarely breed optimal environments for learning, the desegregation of schools should be a desirable policy goal.

Neighborhoods undergoing massive urban-core redevelopment and metropolitan growth have a particularly ripe opportunity to harness the upsides of community change and alleviate the stark racial and economic isolation that is so pervasive in U.S. urban centers (Mordechay & Orfield, 2017). However, housing market pressures associated with gentrification also have the potential to force longtime, low-income residents and residents of color to move out, thus leading to the resegregation of communities and schools. In order to create stable and diverse neighborhoods and communities, policy responses that link housing and schools are necessary (see Mordechay & Ayscue, 2018 for detailed discussion). Although greater housing production and preservation is necessary in communities struggling to offset market pressures, in order for the outcome of gentrification to be a

shared opportunity, efforts at meaningful and sustainable school integration are also critical.

Middle-class commitment to urban schools provides a unique opportunity to improve public education. If the goal is to create stable and diverse neighborhoods and communities, it is crucial to encourage middle-class families to invest in urban neighborhoods and the local public schools within them. An essential part of this effort is that schools must be viewed as neighborhood anchors that can serve as vehicles for ultimately integrating the community.

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Appendix

Table A-1. Population Growth in Gentrifying Tracts, NYC, and Brooklyn and Queens.

	2000	**2016**	**Percentage Change**
Gentrifying Tracts	83,651	96,959	15.9%
New York City	8,008,278	8,539,803	6.6%
Brooklyn and Queens	4,694,705	4,916,863	4.7%

Source: Author's calculations using 2000 decennial census (U.S. Census Bureau, 2000) and 2016 (5-year average) American Community Survey microdata.

Table A-2. Exposure to White Elementary Students in Gentrifying Areas

	Typical Black Elementary Student Exposure to White Students	Typical Hispanic Elementary Student Exposure to White Students	Typical Asian Elementary Student Exposure to White Students
2001	1.3%	5.0%	7.8%
2007	1.8%	5.3%	7.3%
2015	3.5%	6.5%	9.7%

Source: National Center for Education Statistics Common Core of Data

Table A-3. Exposure to White Elementary Students in Non-Gentrifying Areas

	Typical Black Elementary Student Exposure to White Students	Typical Hispanic Elementary Student Exposure to White Students	Typical Asian Elementary Student Exposure to White Students
2007	5.6%	10.1%	19.8%
2015	5.5%	10.3%	17.6%

Source: National Center for Education Statistics Common Core of Data

Table A-4. Isolation with Same-Race Elementary Peers in Gentrifying Areas

	Typical Black Elementary Student Isolation with Black Students	Typical Hispanic Elementary Student Isolation with Hispanic Students	Typical Asian Elementary Student Isolation with Asian Students	Typical White Elementary Student Isolation with White Students
2001	75.9%	66.7%	6.5%	23.3%
2007	74.1%	67.2%	8.2%	23.7%
2015	67.4%	65.5%	11.1%	23.3%

Source: National Center for Education Statistics Common Core of Data

Table A-5. Isolation with Same-Race Elementary Peers in Non-Gentrifying Areas

	Typical Black Elementary Student Isolation with Black Students	Typical Hispanic Elementary Student Isolation with Hispanic Students	Typical Asian Elementary Student Isolation with Asian Students	Typical White Elementary Student Isolation with White Students
2007	58.4%	56.6%	40.3%	47.8%
2015	55.2%	57.1%	43.2%	46.2%

Source: National Center for Education Statistics Common Core of Data

Table A-6. Elementary Enrollment by School Type in Non-Gentrifying Areas

	Number of Elementary Schools	Enrollment	White	Black	Hispanic	Asian	FRL
2007							
Charter	38	11,403	450 (3.9%)	7,285 (63.9%)	3,395 (29.8%)	248 (2.2%)	8,030 (70.4%)
TPS	643	426,152	71,904 (16.9%)	118,561 (27.8%)	168,555 (39.6%)	65,219 (15.3%)	322,391 (75.7%)
2015							
Charter	120	58,915	3,034 (5.1%)	32,503 (55.2%)	20,643 (35.0%)	1,665 (2.8%)	n/a
TPS	708	459,375	81,987 (17.8%)	96,719 (21.1%)	189,305 (41.2%)	81,318 (17.7%)	n/a

Source: National Center for Education Statistics Common Core of Data
Note: Enrollment by race may not add up to total enrollment number because enrollment of other racial groups (American Indian/Alaska Native, Native Hawaiian/Pacific Islander, two or more races) are not included in this table. Percentages may not add up to 100% because shares of other racial groups (American Indian/Alaska Native, Native Hawaiian/Pacific Islander, two or more races) are not included in this table.

Table A-7. Exposure to White Elementary Students by School Type in Gentrifying Areas

	Typical Black Elementary Student Exposure to White Students	Typical Hispanic Elementary Student Exposure to White Students	Typical Asian Elementary Student Exposure to White Students
2007			
Charter	0.3%	2.8%	1.8%
TPS	2.0%	5.3%	7.3%
2015			
Charter	1.2%	2.4%	5.8%
TPS	5.1%	7.3%	10.3%

Source: National Center for Education Statistics Common Core of Data

Table A-8. Exposure to White Elementary Students by School Type in Non-Gentrifying Areas

|	Typical Black Elementary Student Exposure to White Students	Typical Hispanic Elementary Student Exposure to White Students	Typical Asian Elementary Student Exposure to White Students
2007			
Charter	1.8%	4.4%	20.5%
TPS	5.9%	10.2%	19.8%
2015			
Charter	2.7%	4.6%	13.8%
TPS	6.4%	10.9%	17.7%

Source: National Center for Education Statistics Common Core of Data

Table A-9. Isolation with Same-Race Peers by Elementary School Type in Gentrifying Areas

	Typical Black Elementary Student Isolation with Black Students	Typical Hispanic Elementary Student Isolation with Hispanic Students	Typical Asian Elementary Student Isolation with Asian Students	Typical White Elementary Student Isolation with White Students
2007				
Charter	89.3%	43.0%	0.9%	4.2%
TPS	72.1%	67.7%	8.2%	23.9%
2015				
Charter	75.4%	44.8%	4.5%	14.8%
TPS	61.8%	69.3%	12.0%	24.0%

Source: National Center for Education Statistics Common Core of Data

Table A-10. Isolation with Same-Race Peers by Elementary School Type in Non-Gentrifying Areas

	Typical Black Elementary Student Isolation with Black Students	Typical Hispanic Elementary Student Isolation with Hispanic Students	Typical Asian Elementary Student Isolation with Asian Students	Typical White Elementary Student Isolation with White Students
2007				
Charter	75.4%	46.1%	13.4%	26.0%
TPS	57.4%	56.9%	40.4%	48.0%
2015				
Charter	67.9%	49.9%	11.9%	28.4%
TPS	51.0%	57.9%	43.9%	46.8%

Source: National Center for Education Statistics Common Core of Data

Figure A-1. Changes in Household Size, 2000 to 2016
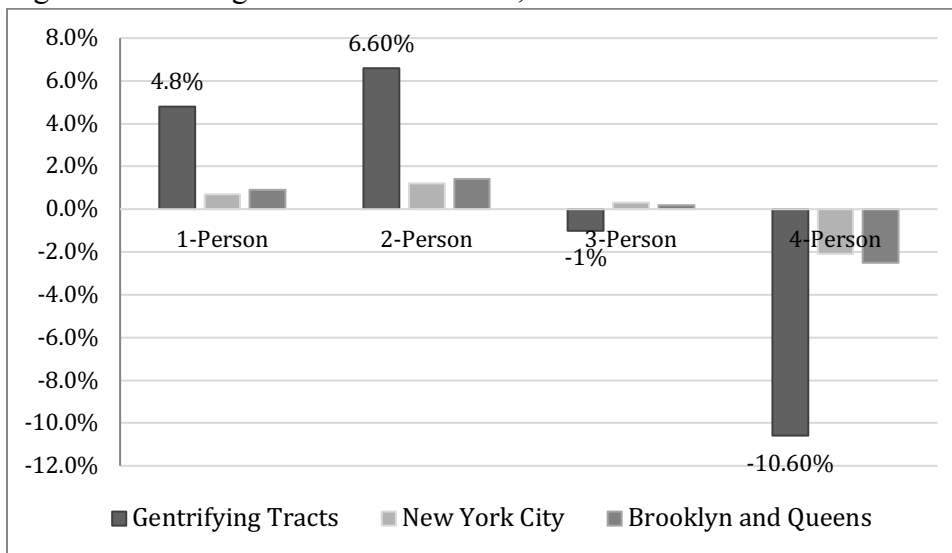
Source: Author's calculations using 2000 decennial census (U.S. Census Bureau, 2000) and 2016 (5-year average) American Community Survey microdata.
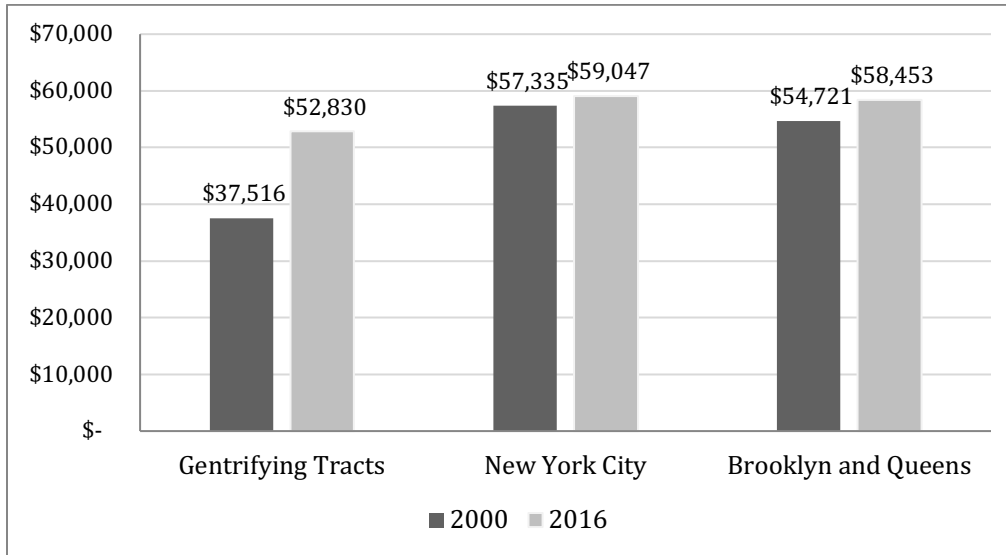
Figure A-2. Age Distribution of Children by Race in Gentrifying Neighborhoods, 2000, 2009, 2015
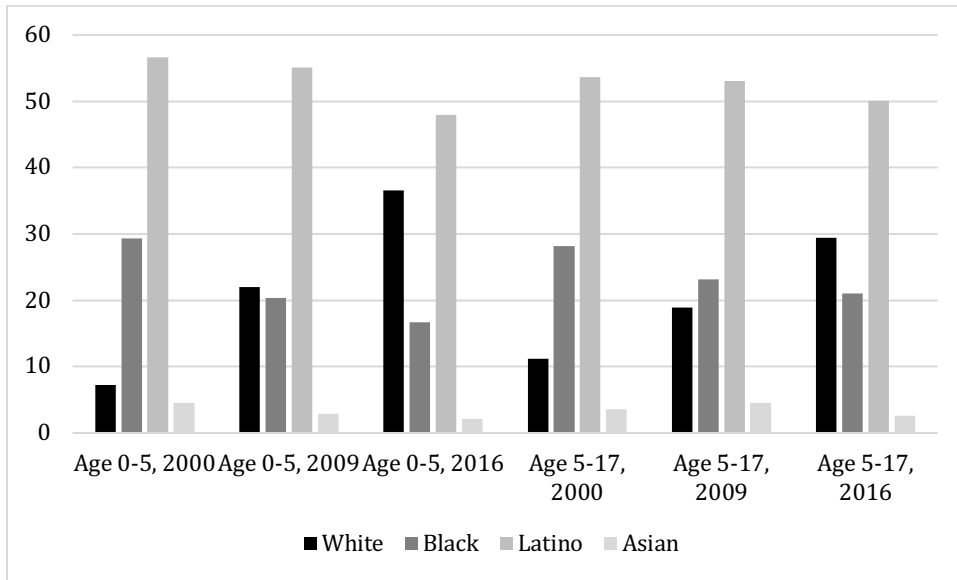
Source: Author's calculations using 2000 decennial census (U.S. Census Bureau, 2000) and 2016 (5-year average) American Community Survey microdata.
Note: White category are respondents that are White alone, not Hispanic or Latino.
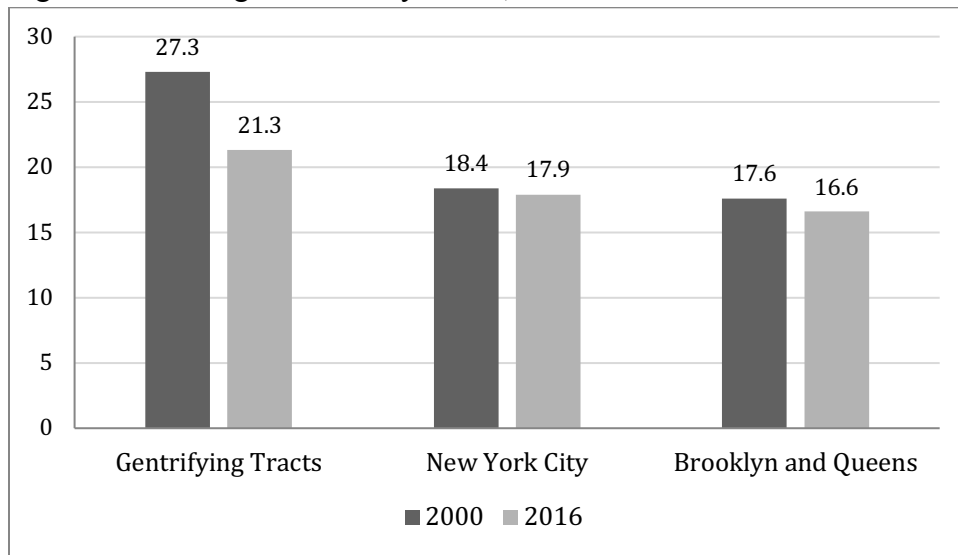
Figure A-3. Change in Median Household Income, 2000 to 2016

Source: Author's calculations using 2000 decennial census (U.S. Census Bureau, 2000) and 2016 (5-year average) American Community Survey microdata.
Note: Median income is adjusted to 2016 dollars.

Figure A-4. Changes in Poverty Status, 2000 to 2016

Source: Author's calculations using 2000 decennial census (U.S. Census Bureau, 2000) and 2016 (5-year average) American Community Survey microdata.

Figure A-5. Distribution of White Elementary School Student Enrollment in Gentrifying Neighborhoods, 2016
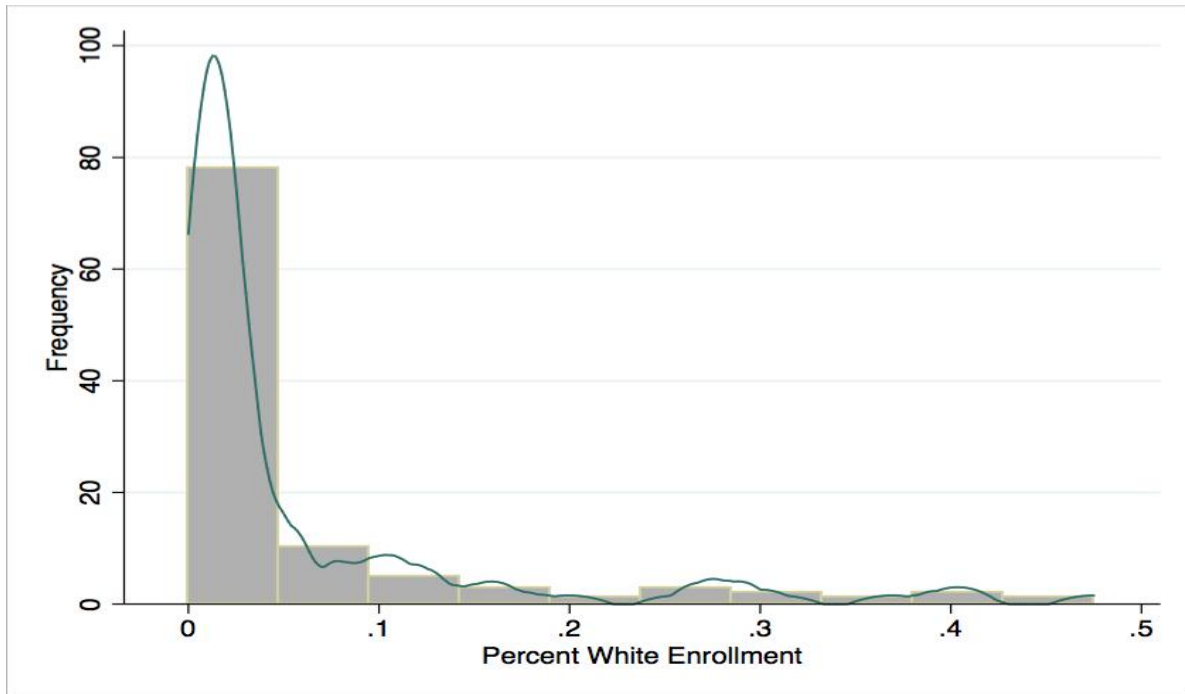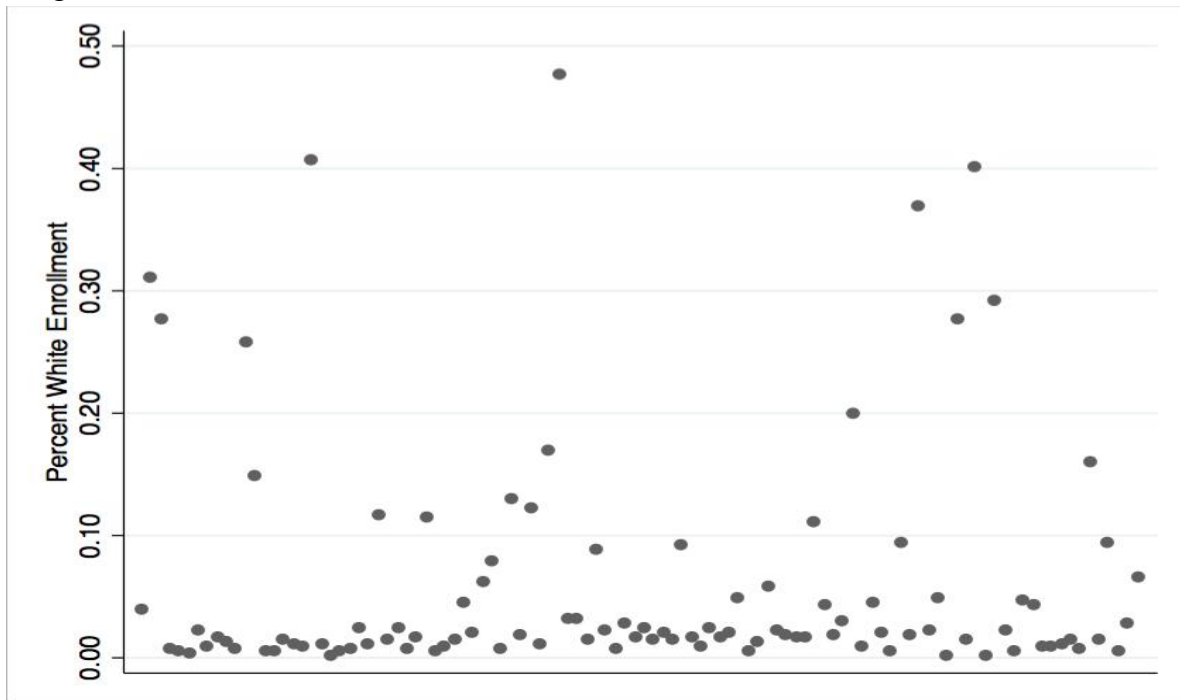

Figure A-6. Elementary Schools by Distribution of White Student Enrollment in Gentrifying Neighborhoods, 2016

Note: Dots represent individual elementary schools.