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School Closures and the Gentrification of the Black Metropolis

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ABSTRACT

Largely overlooked in the empirical literature on gentrification is the potential impact that school closures play in the process. This study begins to fill this gap by integrating longitudinal data on all metropolitan neighborhoods in the United States from the Neighborhood Change Database with data on the universe of school closures from the National Center for Educational Statistics. This study found that the effects of school closures on patterns of gentrification were concentrated amongst Black neighborhoods. School closures increased the probability that the most segregated Black neighborhoods experienced gentrification by 8 percentage points and increased the extent to which these neighborhoods experienced gentrification by 0.21 standard deviations. No evidence was found that school closures increased the likelihood or extent that White or Latinx neighborhoods experienced gentrification. Substantive conclusions were consistent across multiple measures of gentrification, alternative model specifications, a variety of sample restrictions, and were robust to a series of falsification tests. Results suggest that school closures do not simply alter the educational landscape. School closures are also emblematic of a larger spatial and racial reimagining of U.S. cities that dispossesses and displaces Black neighborhoods.

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School Closures and the Gentrification of the Black Metropolis

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Abstract: Largely overlooked in the empirical literature on gentrification are the potential effects school closures have in the process. This study begins to fill this gap by integrating longitudinal data on all U.S. metropolitan neighborhoods from the Neighborhood Change Database with data on the universe of school closures from the National Center for Educational Statistics. We found that the effects of school closures on patterns of gentrification were concentrated among Black neighborhoods. School closures increased the probability that the most segregated Black neighborhoods experienced gentrification by 8 percentage points and increased the extent to which these neighborhoods experienced gentrification by 0.21 standard deviations. We found no evidence that school closures increased the likelihood or extent that White or Latinx neighborhoods experienced gentrification. Substantive conclusions were consistent across multiple measures of gentrification, alternative model specifications, and a variety of sample restrictions, and were robust to a series of falsification tests. Results suggest school closures do not simply alter the educational landscape. School closures are also emblematic of a larger spatial and racial reimagining of U.S. cities that dispossesses and displaces Black neighborhoods.

School Closures and the Gentrification of the Black Metropolis

An underappreciated aspect of the recent back-to-the-city movement is that it is situated within a broader pattern of racialized sorting that has long guided the U.S. housing market (see Krysan et al. 2009; Lewis, Emerson, and Klineberg 2011). In particular, patterns of gentrification, that is, influxes of relatively affluent residents and subsequent rises in property values in previously disinvested urban neighborhoods, are governed by a racial logic that underpins a complex system of reinvestment tilted away from communities of color (Hwang and Sampson 2014). As higher-socioeconomic status (SES) households moved back to the city, taking up residence in and transforming parts of the urban core, lower-income neighborhoods of color—in particular, Black and Latinx neighborhoods—have mostly remained structurally disinvested, racially isolated, and untouched by broader patterns of urban redevelopment (Pais, South, and Crowder 2012; Sharkey 2013). Notwithstanding noteworthy instances of gentrification in historically Black and Latinx neighborhoods (see McElroy and Werth 2019; Prince 2016; Summers 2021), the predominant pattern of gentrification is one where gentrifiers move into urban neighborhoods with fewer residents of color (Sutton 2020; Timberlake and Johns-Wolfe 2017).

Scholars have advanced several theories for why higher-SES households are less likely to move into inner-city neighborhoods of color as opposed to racially mixed or predominantly White urban neighborhoods, including racialized perceptions of crime and disorder, racial discrimination, employment opportunities, social networks, and residential amenities (Couture and Handbury 2016; Ellen, Mertens Horn, and Reed 2017; Sampson 2012). Emerging evidence also shows that schools may play a key part in the gentrification process (Pearman and Swain 2017). Because children typically attend schools near their homes, schools may play a role in the

residential decision-making processes of higher-SES households looking to relocate to the urban core. For instance, in 2018, upward of three-quarters of public-school children nationwide attended their assigned neighborhood school (Wang, Rathbun, and Musu 2019). The prevalence of neighborhood schooling, that is, school assignment policies that prioritize proximity, matters for residential sorting patterns because living in a lower-income neighborhood of color has historically meant sending a child to a racially segregated, under-resourced school (Orfield 2013). In other words, neighborhoods of color may be least likely to experience gentrification, in part, due to an unwillingness of affluent households to send their children to economically disadvantaged schools that predominately serve students of color.

Yet, disadvantaged and under-resourced schools do not always stay open (Tieken and Auldridge-Reveles 2019). In fact, school closures have steadily increased in urban areas. Across roughly the first decade of the twenty-first century, when No Child Left Behind legislation incentivized school improvements (e.g., through the threat of school closure), the number of school closures in the 100 largest metropolitan areas increased by nearly 50 percent, from 5.5 to 10.6 closures per 1,000 schools (McFarland et al. 2017). A growing number of cities have issued mass school closures—often shuttering dozens of schools at once (Caven 2019; Han et al. 2017; Nerenberg 2020). In 2013 alone, Chicago shuttered 47 elementary schools, and other cities, like Detroit and Philadelphia, followed suit, closing over 50 schools in the following years (Brazil 2020).

Notably, these school closures have not only disproportionately affected students of color, they have also been more likely to occur in disinvested neighborhoods, the very neighborhoods most vulnerable to gentrification (Burdick-Will, Keels, and Schuble 2013; Tieken and Auldridge-Reveles 2019). Although school closures are often rationalized on the grounds of

improved efficiency, expanded educational opportunities, and fiscal responsibility, such closures typically face ardent resistance from families, students, educators, and community residents. This resistance is often motivated from the concern that closing schools can diminish neighborhood cohesion and negatively affect the economic health and well-being of local communities (Alexander and Massaro 2020; Bierbaum 2018; Ewing 2018; Smith and Stovall 2008).

Despite concerns about potential adverse effects on communities, there is limited quantitative evidence about the effects of school closures on neighborhood conditions, and virtually no evidence on whether school closures affect patterns of gentrification, a notable oversight given that gentrification, just like school closures, is often met by fierce protest from community groups who view it as a threat to neighborhood cohesion (Addie and Fraser 2019; Ewing 2018; Newman and Wyly 2006). The current study begins to fill this gap by drawing national data from the U.S. Census, American Community Survey, and National Center for Educational Statistics to examine whether the shuttering of neighborhood schools affects patterns of gentrification in U.S. cities. In particular, we are interested in whether patterns of gentrification change after the closure of a local school.

Background

In its most general sense, gentrification refers to a type of physical, economic, cultural, and demographic transition in urban areas, in which previously disinvested neighborhoods experience an influx of higher-SES households and an increase in property values (Smith 1996). There are two general sets of explanations for why gentrification occurs: (1) production-side reasons related to the economic opportunities available in disinvested urban neighborhoods, and (2) consumption-side reasons having to do with an emerging alignment between the preferences of gentrifiers and the social and cultural opportunities available in urban neighborhoods (Ley

1996; Smith 1982). Research indicates that school closures may contribute to both (Pearman 2021).

Production-side theories view gentrification in economic terms and conceive of the inflow of capital into lower-income neighborhoods and the revitalization of urban infrastructure as a strategic investment response to sustained disinvestment and under-valuation of certain neighborhoods. That is, gentrification is viewed as a structural product of the housing and land markets. This perspective is codified most formally in Neil Smith's (1982) "rent gap theory," which argues that the gap between actual and potential land-use values in any given locale drives investment opportunities for homebuyers, developers, and investors and structures the flow of capital into and out of disinvested urban neighborhoods. As the rent gap grows, speculative investment becomes more promising, thereby increasing the likelihood of gentrification.

Most research into production-side explanations for gentrification documents associations between gentrification and the age and quality of the housing stock, but local school closures may also contribute to the rent-gap in a given neighborhood. For instance, prior research shows that perceptions of school quality are capitalized into housing prices (Black 1999; Clapp, Nanda, and Ross 2008; Clotfelter, Ladd, and Vigdor 2005, 2006; Dhar and Ross 2012; Stullich 2011). To the extent that gentrifiers perceive neighborhoods of color as tied to schools they believe to be of lower quality, the shuttering of these presumed lower-quality schools could raise the "ceiling" of the rent-gap in these neighborhoods, thereby increasing the likelihood that a given neighborhood experiences gentrification (Brunner, Cho, and Reback 2012). On the other hand, if a school closure results in a building that is abandoned as opposed to repurposed, such a closure could plausibly lower the ceiling of the rent gap and decrease the likelihood of gentrification by

depressing property values and contributing to visual cues of assumed disorder and neighborhood blight.

Consumption-side theories frame gentrification as the result of consumer demand. Scholarship in this vein views gentrification as an expression of advanced capitalism and a response to the shifting consumption choices of certain parts of the middle and upper class (Bader 2011; Lloyd 2010). According to this perspective, gentrification occurs because higher-SES households are inclined toward the types of lifestyles made possible by proximity to urban amenities, including cultural institutions, cafés, and diverse residential environments. In other words, gentrification arises because of an emerging alignment between the cultural proclivities of the gentry and the structural features of urban neighborhoods.

School closures may serve as a consumption-side determinant of gentrification by changing the consumable amenities associated with urban neighborhoods. In particular, higher-SES households looking to relocate to urban areas are especially sensitive to perceptions of "fit" at local schools, that is, perceptions of whether the demographic composition, facilities, governance, curriculum, and enrichment opportunities at local schools align with their own social and educational priorities (Cucchiara 2013; Cucchiara and Horvat 2009; Holme 2002; Posey-Maddox 2014; Stillman 2012). Local schools that do not meet gentrifiers' standards for quality, leadership, racial composition, or school climate could serve as a deterrent to higher-SES parents looking to relocate to central city areas. By extension, the shuttering of a neighborhood school that gentrifiers would have perceived to be less than desirable could make the neighborhood itself more appealing. That is, in addition to school closures potentially influencing patterns of gentrification because closures may contribute to the economic viability

of urban neighborhoods, school closures may influence patterns of gentrification by providing gentrifiers alternative and preferable publicly funded schooling options to consume.

Theoretical Framework

Two competing theories about residential segregation provide alternative hypotheses for the role school closures may play as a moderator of the relation between neighborhood racial composition and patterns of gentrification. Both are grouped under place stratification theory. Place stratification theory maintains the primacy of race as a stratifying device in residential sorting patterns, wherein socially advantaged groups maintain physical distance from socially disadvantaged groups (Alba and Logan 1993; Pais et al. 2012). This hierarchy of place is reinforced and institutionalized through public policy (e.g., exclusionary zoning and urban renewal plans) and prevailing practices in the housing and lending markets (e.g., predatory lending practices, and prejudiced and discriminatory decisions made by landlords, property developers, real estate agents, and banks) (Rugh, Albright, and Massey 2015; Rugh and Massey 2010; Shertzer, Twinam, and Walsh 2016; Wilson 2012).

Place stratification theory is traditionally used to describe racialized barriers to *upward* spatial mobility (i.e., moving from a less to a more socioeconomically advantaged neighborhood), but at its core, place stratification theory simply assumes that spatial mobility (either upward mobility to a more affluent neighborhood or "downward," strategic mobility to a gentrifying neighborhood) is governed by an enduring racial hierarchy where proximity to Whiteness yields material benefits in terms of quality of life and long-term economic prospects. Therefore, according to place stratification theory, disinvested neighborhoods with more White residents will be more likely to gentrify than disinvested neighborhoods with few White

residents. In other words, due to affluent households' racialized reticence, low-income communities of color will be the least likely to gentrify.

Following Pais and colleagues (2012), we draw on two variants of place stratification theory—a strong and a weak version—to explain how school closures may relate to the persistence of racial stratification in urban neighborhoods. The strong version of place stratification theory holds that the primacy of neighborhood racial composition will nullify any perceived improvements in school quality in neighborhoods of color associated with a local school closure. In this view, the effect of neighborhood racial composition on patterns of gentrification will either be invariant to whether a local school closes, net other factors, or be amplified if school closures, for instance, are more likely to depress property values in minoritized neighborhoods than in otherwise similar neighborhoods with higher shares of White residents. In either case, the strong version of place stratification theory would predict that closing a local school would not encourage affluent residents to move into a disinvested neighborhood of color due to prevailing patterns of racial animus.

In contrast, the weak version of place stratification theory, which maintains the primacy of race as a stratifying device in locational attainment but allows for improvements at the margins, would posit that school closures, as an educational reform strategy that alters the local educational landscape, would depress but not entirely account for the role of racial stratification in determining gentrification patterns. In particular, the weak version would posit that school closures would lessen affluent households' aversion to moving into neighborhoods of color due to fundamental changes to the local educational landscape that appeal to affluent households.

Empirically, this study adjudicates between these two theoretical models by specifying an interaction between school closure and the share of neighborhood residents who are Black or

Latinx, respectively, two racial groups especially likely to experience residential segregation in the United States (Iceland and Hernandez 2017). Assuming significant main effects for neighborhood racial composition where neighborhoods with more Black or Latinx residents are less likely to experience gentrification, a positive interaction in which the effect of neighborhood racial composition becomes less negative when a local school closes would provide evidence in favor of a weak version of place stratification theory—that is, affluent households become less deterred from moving into neighborhoods of color when a local school is shuttered. A lack of moderation between school closures and racial composition suggests we cannot rule out the possibility that the effects of racial composition on gentrification are invariant to whether local schools are closed, as would be anticipated under a strong version of place stratification theory.

Method

Examining the effect of school closures on patterns of gentrification requires the integration of several national datasets. We collected data on school closures from the National Center for Educational Statistics' Common Core of Data. We gathered baseline and pre-baseline characteristics of individual neighborhoods from the 1990 and 2000 Neighborhood Change Database (NCDB). NCDB's proprietary software provides normalized census tract information across years that accounts for any boundary changes. We also used census tract data from the 2010–14 American Community Survey to determine which neighborhoods underwent, during the observation period, patterns of gentrification.

Primary Outcomes of Interest

Our primary outcomes of interest are whether and the extent to which an urban neighborhood experienced gentrification during the observation period. First, we defined a neighborhood as gentrifiable, that is, eligible for gentrification, if it had (a) a median income

below the 50th percentile of its respective city, and (b) a share of recently constructed housing, defined as the percent of housing built in the 20 years preceding baseline, that was also below the 50th percentile of its respective city. Roughly 30 percent of all urban U.S. neighborhoods were classified as gentrifiable in the year 2000 (see Table 1). We also report results based on a more stringent threshold of gentrifiable: a neighborhood falling below the 40th, as opposed to the 50th, percentile of its city in terms of median income and share of recently constructed housing.

We categorized a neighborhood as gentrifying if it met criteria (a) and (b) at baseline, but between 2000 and 2012, it underwent (c) an increase in inflation-adjusted housing prices, and saw (d) a percentage increase in college-educated households that exceeded the increase in college-educated households in its respective city during this period. Neighborhoods that met the first set of criteria but failed to meet the latter (22 percent of all urban neighborhoods), were considered persistently disinvested neighborhoods (i.e., neighborhoods eligible for gentrification that did not experience gentrification). Neighborhoods that met all four criteria, roughly 9 percent of all urban neighborhoods, were considered gentrifying neighborhoods. These rates of gentrification are generally higher than what was observed before the turn of the twenty-first century, meaning gentrification has intensified and now affects a broader cross-section of urban neighborhoods (Hwang and Lin 2016) (see Appendix Figure D.1 for a map of overall rates of gentrification across U.S. Metropolitan Statistical Areas). We restricted the analytic sample to neighborhoods eligible for gentrification at baseline; higher-SES neighborhoods that were, by definition, ineligible for gentrification were excluded from the sample.

To capture the extent to which a neighborhood experienced gentrification, we followed Pearman and Swain (2017) and transformed into a standardized composite the same components used to create the categorical measure. To create a single continuous metric of the amount of

gentrification that occurred during the observation period, we first transformed each component (the change in college-educated residents and the change in real housing prices) to have a standard deviation of one. We then combined and standardized the two components by dividing the combined score by the resultant standard deviation. The combined score was not mean-centered, which preserved the relative meaning of positive versus negative gentrification. Consequently, neighborhoods that had a positive score are understood as experiencing "positive" gentrification (i.e., socioeconomic ascent), and neighborhoods with negative scores are understood as experiencing "negative" gentrification (i.e., socioeconomic decline). A one-unit change in the composite score is therefore interpreted as a standard deviation change in the amount of gentrification that occurred during the observation period.

Independent Variable

The primary independent variable of interest in this study is whether a neighborhood experienced a school closure nearby. As noted previously, data on school closures come from the National Center for Educational Statistics' Common Core of Data, which provides annual information on school characteristics, including codes for operational status that specify whether a school was permanently closed. This dataset provides addresses for every school, including those that were closed. These addresses were geocoded to corresponding longitude-latitude coordinates (geocoding successfully located longitude-latitude coordinates for 99 percent of schools). For the primary analysis, we focus on school closures that occurred in the first quarter of the observation period (2000 to 2003) within one mile of neighborhood boundaries. This time frame maximizes the number of observed closures while retaining a window that occurred toward the beginning of the observation period. As robustness checks, subsequent analyses varied this observation period and proximity distance (see Tables 4 and 5 and Appendix Table

D.1). We also narrowed the study to focus on traditional neighborhood schools that closed; we excluded vocational, alternative, special education, charters, magnet schools, and schools classified as "other" from the indicator of school closures. Table 3 relaxes this restriction and reports results based on the inclusion of charter and magnet schools.

Control Variables

To account for other factors that might influence patterns of school closures as well as gentrification, we controlled for a host of confounding factors at the neighborhood and district levels. Baseline neighborhood controls were measured in the year 2000 and included the total number of residents; the percent of owner-occupied housing; the share of residents who were under age 18; the share of households led by a single mother; the share of adult residents with a bachelor's degree, who were unemployed, who lived at or below the federal poverty line, who received government-based financial assistance, and who did not have a high school degree; median household income; median rent; median housing price; and the share of residents who were Black or Latinx.

To capture trends in gentrification prior to baseline, we included pre-2000 neighborhood controls that measured the observed difference in each neighborhood characteristic between the 1990 and 2000 U.S. Census. We also included pre-baseline controls for whether, between 1990 and 1999, a neighborhood experienced a school closure within one mile, along with an interaction between this indicator and the share of residents who were Black or Latinx, respectively. Analogous controls and interaction terms were included for whether a neighborhood experienced a school opening within one mile during the pre-baseline period. We also included neighborhood controls for the number of schools at baseline located within one mile of the neighborhood, and a control for whether a neighborhood was located in the principal

city of a metropolitan statistical area. Baseline district controls were measured in the year 2000 and include total district enrollment, per-pupil expenditures, between-school segregation, the share of students in the district who were Black or Latinx, respectively, and the percent of district schools that were charter or magnet schools.

To account for the fact that a relation between school closures and patterns of gentrification might occur because the expansion of school choice may contribute to each (see Pearman and Swain 2017), we controlled for whether, during the observation period (2000-12), a district experienced growth in the share of charter or magnet schools or a school opening within one mile. As described in the analytic strategy section, the relation between each measure of school choice (charter growth, district magnet, local school opening) and patterns of gentrification is allowed to vary based on the share of Black and Latinx neighborhood residents at baseline.

Overall, rates of missing data for control variables were relatively small and only affected school district variables (see Appendix Table C.1). Nevertheless, the primary analysis imputes missing values; estimates are based on 25 multiply imputed datasets combined based on Rubin's Rules (1987) for multiple imputation inference. Table 3 shows results are similar when using unimputed data.

Descriptive Statistics for Analytic Sample

Table 1 presents baseline descriptive statistics for all neighborhoods located in metropolitan statistical areas. As shown in the bottom row, of the 66,624 neighborhoods located in U.S. metropolitan statistical areas, 20,392 were located in gentrifiable neighborhoods at baseline—that is, neighborhoods with median incomes and shares of recently constructed housing below the 50th percentile of their respective cities. Of these gentrifiable neighborhoods,

5,901 experienced an increase in real housing prices and an influx of college-educated residents during the observation period that exceeded the growth of college-educated residents in the city overall, corresponding to a rate of gentrification of 29 percent across the analytic sample.

Overall, disinvested neighborhoods at baseline were more socioeconomically disadvantaged than metro neighborhoods in general, as would be expected. For example, poverty rates in disinvested neighborhoods were 8 percentage points higher, shares of adults who did not complete high school were 9 percentage points higher, and unemployment rates were 3 percentage points higher. Gentrifiable neighborhoods also had substantially more Black and Latinx residents than did the average metropolitan neighborhood nationwide. When comparing gentrifiable neighborhoods to neighborhoods that subsequently underwent gentrification, several differences are apparent. First, neighborhoods that gentrified were generally more socioeconomically advantaged than disinvested neighborhoods overall. For instance, relative to gentrifiable neighborhoods, at baseline, neighborhoods that gentrified had higher housing prices, higher median incomes, fewer shares of single-parent households, more college-educated residents, and fewer Black and Latinx residents. With respect to the key independent variable of interest, 9 percent of metro neighborhoods during the observation period experienced a school closure nearby, compared to 13 percent of gentrifiable neighborhoods; this figure was similar for the subset of these neighborhoods that went on to experience gentrification.

Analytic Strategy

To assess whether school closures moderate the relation between neighborhood racial composition and the likelihood and extent of gentrification, we estimate a general linear model that takes the following form:

$$g[E(Y_n)] = \beta_0 + \beta_1 SchoolClosure_n + \beta_2 PercentBlack_n + \beta_3(SchoolClosure_n \times PercentBlack_n) + \beta_4 PercentLatinx_n + \beta_5(SchoolClosure_n \times PercentLatinx_n) + \eta Z + \theta Z_{t-1} + \lambda + \varepsilon \quad (1)$$

where Y_n represents either a binary or continuous measure of gentrification for neighborhood n and where g[.] is a link function. For the binary indicator of gentrification, this link is a logit function (fit using logit regression); for the continuous measure of gentrification, this link is an identity link function (fit using OLS regression). $SchoolClosure_n$ takes the value of 1 if neighborhood n experienced a school closure within one mile and is 0 otherwise. $PercentBlack_n$ and $PercentLatinx_n$ are measures of the share of neighborhood residents who are Black and Latinx, respectively. Z is a vector of neighborhood and district characteristics measured at baseline. As noted in the previous section, to ensure the moderating role of school closure is not confounded by growth in school choice options more generally, Z also includes interactions between neighborhood racial composition (percent Black or Latinx) and local school openings, charter school growth, and magnet school growth. Z_{t-1} is a vector of neighborhood characteristics that capture pre-baseline trends in neighborhood conditions between 1990 and 2000 for each baseline neighborhood characteristic. λ is a vector of city fixed effects to account for any unobserved city-level variation in housing or urban redevelopment policies. Finally, ε is a heteroskedastic robust error term clustered at the city level.

To test whether the weak or strong version of place stratification theory best explains the relation between gentrification, school closures, and neighborhood racial composition, we allow the relation between school closures and gentrification to vary by the share of neighborhood residents who are Black or Latinx. We do so by estimating a two-way interaction between school closure and the share of neighborhood residents who are Black or Latinx, respectively. A positive interaction term would provide evidence in favor of the weak version of place stratification theory, in that the adverse effect of neighborhood racial composition on the likelihood or extent that neighborhoods experience gentrification becomes less negative when a

neighborhood experiences a school closure. A substantively small or insignificant interaction term would provide evidence in favor of strong place stratification theory, in that the adverse effect of neighborhood racial composition on the likelihood or extent that a neighborhood experiences gentrification is invariant to whether the neighborhood experiences a school closure in the intervening years.

Results

Table 2 presents results from Equation 1 for the coefficients of interest (Appendix Table A.1 provides complete results for all included covariates). Columns 1 and 2 present estimates from logit regressions pertaining to the binary indicator of gentrification, reported as odds ratios. Columns 3 and 4 present estimates from OLS regressions pertaining to the continuous measure of gentrification. Columns 1 and 3 report a main effects-only model. Columns 2 and 4 include the interaction terms of interest between neighborhood racial composition and school closures.

Columns 1 and 3 indicate that Black and Latinx neighborhoods were far less likely than White neighborhoods to experience gentrification. Column 1 shows that the odds of gentrification in disinvested neighborhoods were [100*(1 – 0.46)=] 54 percent lower for Black compared to White neighborhoods and [100*(1 – 0.17)=] 83 percent lower for Latinx compared to White neighborhoods. Similarly, as indicated by Column 3, disinvested Black and Latinx neighborhoods experienced 0.40 and 0.76 SDs less gentrification, respectively, than disinvested White neighborhoods. These patterns align with prior literature pertaining to racial stratification in the gentrification process: neighborhoods of color are less likely than neighborhoods with few non-White residents to experience gentrification. Of prime interest in this study, however, is whether this pattern changed when a local school closed.

Overall, we find that the moderating role school closures play with regard to the effects of neighborhood racial composition on patterns of gentrification is unique to Black neighborhoods. The significant, positive coefficient for the interaction term between shares of Black residents and local school closures in Columns 2 and 4 indicates that racial stratification in the gentrification process becomes less salient for Black neighborhoods when a local school closes. That is, the negative relation between shares of Black residents and the likelihood and extent of gentrification becomes *less negative* after a local school closes. When a local school closes, Black neighborhoods become more likely to gentrify. The magnitude of the coefficients for the interaction term when interacting school closures with shares of Latinx residents are similar to those for Black residents but are measured less precisely and fail to reach conventional significance thresholds. Consequently, we cannot rule out the hypothesis that the relation between shares of Latinx residents and patterns of gentrification is invariant to whether a local school closes.

To illustrate the significant interaction between local school closures and shares of Black residents and to provide some intuition for what these interaction terms mean in practice, Figures 1 and 2 plot the adjusted, predicted probability and extent of gentrification, respectively, across shares of Black residents for neighborhoods that did and did not experience a school closure during the observation period (Appendix Figures A.1 and A.2 display analogous results for Latinx neighborhoods, which are not discussed because the interactions were non-significant). The solid lines correspond to the probability (or extent) of gentrification for neighborhoods that did not experience a school closure nearby. The dotted lines correspond to the probability (or extent) of gentrification for neighborhoods that did experience a school closure nearby. A flat

horizontal line would indicate no relation between neighborhood racial composition and gentrification.

As illustrated in Figures 1 and 2, the slopes of the dotted lines, relative to the solid lines, attenuate toward zero, which indicates a shift in the gentrification process in which gentrifiers' aversion to Black neighborhoods becomes less pronounced when a local school closes. When local schools remained open, the probability of gentrification in the most racially segregated Black neighborhoods—those in which all residents were Black—was 19 percent. In contrast, when a local school closed, these same neighborhoods experienced gentrification 27 percent of the time, or a 42 percent increase over baseline rates (p = .004). Similarly, the closure of a local school increased *the amount* of gentrification experienced in the most racially segregated Black neighborhoods by 0.21 SD (p = .013). In contrast, as suggested by the closely overlapping lines on the left side of each panel, there is no evidence that school closures affected the likelihood or extent of gentrification in neighborhoods containing few Black residents. Indeed, Figures 3 and 4, which plot the marginal effect and corresponding confidence intervals for the effect of school closures on the probability and extent of gentrification, respectively, show that the effect of school closures is concentrated among neighborhoods with majority Black populations. As indicated by Figures 3 and 4, the confidence intervals exclude zero only in neighborhoods in which at least 50 to 60 percent of residents are Black, with the magnitude of the effects increasing with the share of Black residents. In other words, school closures promoted gentrification, but only in Black neighborhoods.

Sensitivity Checks

Table 3 reports results from a series of robustness checks. Column 1 shows results from the primary analysis. Columns 2 and 3 show that substantive conclusions about the moderating

effects of school closures on neighborhood racial composition remain the same if the definition of school closures is expanded beyond traditional neighborhood schools to include charter and magnet schools. Column 4 shows that the estimated effect of school closures on the likelihood that Black neighborhoods experience gentrification is consistent if gentrification is measured in racial rather than SES terms. That is, in addition to disinvested neighborhoods experiencing increases in housing prices, this alternative specification requires an increase in White college-educated households, rather than college-educated households of any color, that exceeds the city average. Column 5 shows that substantive conclusions are similar if the analysis is restricted to neighborhoods in the 100 largest U.S. metro areas, indicating that effect estimates are not driven by those observed in minor cities or small MSAs. Column 6 shows that substantive conclusions are consistent if standard errors are clustered at the school district rather than city level. Column 7 shows that substantive conclusions are similar when using a more stringent threshold of baseline neighborhood disinvestment based on falling below the 40th, as opposed to the 50th, percentile of their respective city in terms of median incomes and shares of recently constructed housing at baseline. Column 8 shows that substantive conclusions remain the same when using unimputed data. Finally, Column 9 shows that results are similar if the city fixed effect is replaced with a school-district fixed effect.

Table 4 varies the buffer zone used to determine whether a school closure was "nearby" a disinvested neighborhood (the primary analysis used a one-mile buffer). This table shows that school closures moderated the relation between gentrification and racial stratification in Black neighborhoods if the buffer around neighborhood boundaries used to determine proximity to school closures was reduced to 0.5 miles or broadened to 1.5 miles. Figure 5 plots the marginal effects of school closures on a variety of sociodemographic proxies for gentrification across

shares of Black residents at baseline (Appendix Table B.1 provides coefficient estimates from these models in tabular form, and Figure B.1 plots analogous estimates for Latinx residents). Like the patterns observed for gentrification, the relation between neighborhood racial composition and changes to a neighborhood's socioeconomic profile are dependent on whether a neighborhood experiences a school closure nearby. Black neighborhoods that experienced a local school closure saw median incomes and housing prices increase. The other sociodemographic outcomes trend in the expected directions but fail to reach conventional significance thresholds, a pattern due, in part, to variation in the number of neighborhoods with different shares of Black residents.

Tables 5 and 6 provide results from a series of falsification tests that assess the likelihood of reverse causality (i.e., that gentrification caused school closures, rather than school closures causing gentrification). Table 5 reports results from a series of models that vary the period in which school closures were observed. In the primary analysis, we observed gentrification between 2000 and 2012. Column 1 repeats results from the primary analysis in which school closures were observed at the beginning of the observation period (2000 to 2003), Column 2 shows the middle of the observation period (2004 to 2008), Column 3 shows the end of the observation period (2009 to 2012), and Column 4 reports results in which school closures were observed immediately following the observation period (2013 to 2016). Reverse causality would be observed if school closures that occurred toward the end or even after the observation period predicted gentrification that occurred during the observation period. However, Table 5 provides no evidence that school closures that occurred near Black neighborhoods toward the end or after the observation period predicted gentrification that happened during the observation period.

Indeed, only school closures that occurred at the beginning of the observation period predicted patterns of gentrification with regard to Black neighborhoods.

Table 6 provides results from a falsification test that regresses school closures on baseline shares of Black or Latinx residents, pre-baseline trends in neighborhood socioeconomic characteristics, and interactions between them. A significant, positive interaction between shares of Black neighborhood residents at baseline and pre-baseline trends in neighborhood socioeconomic status would indicate that school closures near neighborhoods with more Black residents were more likely to occur if these neighborhoods had already experienced initial waves of gentrification prior to baseline. As Table 6 shows, however, there is no evidence that pre-baseline trends in proxies for gentrification were related to the likelihood that neighborhoods with more Black residents experienced a school closure during the observation period, further minimizing concerns about the causal directionality assumed in this study.

Discussion

School closures remain one of the most controversial and politically fraught issues in urban school reform today. Part of the reason for this controversy stems from the reality that little is actually known about the effects of school closure. To date, the few quantitative studies that have examined school closures focused on student-level effects and arrived at mixed conclusions (Brummet 2014; Carlson and Lavertu 2016; Kirshner, Gaertner, and Pozzoboni 2010; Steinberg and MacDonald 2019). However, there is far less quantitative evidence on the effects of school closures on nearby communities, even though qualitative scholars and popular media outlets alike have long raised concerns about the potential destabilizing effects of school closures on nearby neighborhoods (Deeds and Pattillo 2015; Ewing 2018).

The current study sheds light on the effects of school closures on communities by examining whether prevailing patterns of residential stratification in U.S. cities depend on whether local schools close. In particular, we set out to examine whether school closures increase the likelihood and extent of gentrification in disinvested neighborhoods of color. Overall, we found evidence that school closures do indeed affect residential stratification, but only in Black neighborhoods. School closures increased both the likelihood and extent that Black neighborhoods experienced gentrification. This finding, which is consistent with earlier research on residential effects of school choice policies more generally (e.g., Pearman and Swain 2017), provides support for a weak version of place stratification theory as it relates to disinvested Black neighborhoods. This theory holds that patterns of gentrification, as they relate to Black neighborhoods, are governed by a racial hierarchy that attenuates somewhat after a local school closes.

In contrast, we found that school closures did not moderate the relation between shares of Latinx residents and the likelihood or extent that Latinx neighborhoods experienced gentrification. However, we do not view these non-significant interaction terms as providing compelling evidence in favor of a strong version of place stratification theory as it relates to Latinx neighborhoods. Although the point estimates for the interaction terms between school closures and shares of Latinx neighborhoods failed to reach conventional significance thresholds, they were markedly similar in magnitude to those observed for Black neighborhoods. This imprecision might be due to the amount of ethno-racial heterogeneity in Latinx neighborhoods. Latinx neighborhoods may comprise, for instance, any configuration of Mexican, Puerto Rican, Dominican, Cuban, South American, or Central American residents, among others, and the relation between school closures and gentrification might differ for each of these subgroups,

which would contribute to an imprecisely estimated interaction term. Future research is needed to further unpack the school closure process as it relates to gentrification in Latinx neighborhoods.

However, this study did provide compelling evidence that school closures increased patterns of gentrification in Black neighborhoods. Although there is a lack of agreement about the full range of benefits and challenges associated with school closures, scholars do appear to agree that low-income and Black students are the most likely to have their schools closed (Billger 2010; Brummet 2014; Ewing 2018; Lipman and Haines 2007; Sunderman, Coghlan, and Mintrop 2017; Tieken and Auldridge-Reveles 2019). In an age where school districts are writing statements and promising policy in "defense of Black lives," stakeholders must consider how educational policies are contributing to the further perpetuation of the disintegration of Black communities (Shange 2019). This study suggests that closing schools equates to a greater risk of gentrification in Black neighborhoods and potential threats associated with the dispersal of friends and families, as well as the fragmentation of important interdependent social groups (Gibbons, Barton, and Reling 2020). If it takes a village to raise a child, educational policymakers, stakeholders, and officials should question what responsibility they bear if the decisions they make render that village no more.

As calls for accountability in the face of "failing" schools continue, districts would do well to consider from where those appeals emerge and whether those appeals are top-down, not just administratively, but with respect to existing power structures (e.g., racial, political, social, economic). Importantly, Deeds and Pattillo (2015:497) note that failure is "an interpretative process" that may not be identically framed or understood by all involved parties; a school closure may make a neighborhood more appealing to affluent households by improving

perceptions of school quality, but be received by community members of color as "punishment, erased local histories, and disrupt[ion of] their valued connection to the school." Indeed, a number of qualitative researchers have raised concerns about the effects of school closure on students' well-being and, notably, the vitality of urban communities (see Briscoe and Khalifa 2015; Deeds and Pattillo 2015; Green 2017). Stakeholders who attempt to dismantle structural barriers to educational opportunities in urban areas through the apparatus of school closure, by supplanting the desires of those indigenous to the local community, may risk doing more harm than good, specifically to urban Black neighborhoods, their expressed needs for the preservation of their communities, and especially their children (see McKittrick 2014).

Limitations

Despite providing the first quantitative evidence of the impact of school closures on patterns of gentrification, this study is not without limitations. First, we focused on population-average effects. Therefore, it remains possible that the observed effects of school closures on patterns of gentrification were more pronounced in some cities and less pronounced in others. Second, we were unable to distinguish between types of school closures. Therefore, it is possible that effects of school closure on gentrification may differ depending on whether the closure occurred for performance reasons, fiscal considerations, competitive pressures, policy changes (e.g., related to No Child Left Behind legislation), or because a school was closed and replaced by a new school under a different name in a different part of town. Future research with more refined data about the source of school closures, as well as the differing responses of high-SES households to various neighborhood ethno-racial make-ups, is needed to parse out this issue. Third, these results are temporally bound. The temporal scale of this study pertained to roughly the first decade of the twenty-first century. Although this time frame aligns with much empirical

research on gentrification and urban schooling, future research should examine whether the observed effects noted here pertain to earlier or more recent periods.

Conclusion

Despite these limitations, this study advances research on urban inequality by providing estimates of the effects of school closures on patterns of gentrification. Based on national data, we found that school closures cause nearby Black neighborhoods to gentrify. Ultimately, these findings indicate that school closures do not simply change the educational landscape. School closures also have consequences for the future of urban Black neighborhoods, raising questions of how, within the context of the United States, school closures further reify the continued and ever-evolving subjection of Black folks in a "systemically anti-Black world" (Sharpe 2016; Thomas and Wynter 2006). Researchers should continue to explore and theorize how educational policies—particularly school dissolution—embolden community change that is predicated on the further dispossession of Black communities (see Dumas 2016). Indeed, these findings suggest that school closures, as an educational reform strategy, are emblematic of a larger spatial and racial reimagining of U.S. cities (see Addie and Fraser 2019), fueled through gentrification and related shifts in local governance, that dispossesses and displaces Black neighborhoods.

Notes

[1] We acknowledge that Black and Latinx communities are not mutually exclusive or oppositional. For the purposes of this study, we focus on these two groups because each has experienced high levels of residential segregation in U.S. cities, but we delineate between them because experiences of residential discrimination are especially acute for Black households (see Massey and Denton 1993; Pais et al. 2012; South, Crowder, and Pais 2008).

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Research Ethics

The research presented in this paper was exempt from institutional review board review according to section 45 CFR 46.101(b) of the Department of Health and Human Services regulations.

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TABLE 1. MEANS AND STANDARD DEVIATIONS OF KEY VARIABLES

	All Metro Neighborhoods	Disinvested Neighborhoods	Gentrifying Neighborhoods
<u>Baseline Neighborhood Characteristics</u>			
Total Residents	3,893.73	3,756.19	3,597.42
	(1,934.87)	(1,527.28)	(1,518.77)
Median Income	70,932.50	49,444.16	51,374.84
	(31,172.14)	(14,145.18)	(14,919.17)
Poverty Rate	0.12	0.20	0.19
	(0.11)	(0.12)	(0.11)
Proportion of Children <18	0.25	0.26	0.24
	(0.07)	(0.07)	(0.07)
% Residents w/Government Aid	0.08	0.13	0.12
	(0.07)	(0.08)	(0.08)
% Adult Residents w/College Deg.	0.25	0.15	0.18
	(0.17)	(0.11)	(0.12)
% Adult Residents w/o H.S. Deg.	0.20	0.29	0.27
	(0.14)	(0.14)	(0.13)
Unemployment Rate	0.06	0.09	0.08
	(0.05)	(0.06)	(0.06)
% Female-Headed HH	0.24	0.35	0.34
	(0.15)	(0.16)	(0.16)
% Black Residents	0.14	0.25	0.22
	(0.23)	(0.31)	(0.29)
% Latinx Residents	0.12	0.18	0.17
	(0.19)	(0.24)	(0.22)
Housing Price (in dollars)	191,035.66	135,030.25	154,412.03
	(145,603.01)	(89,665.29)	(96,823.81)
Median Rent (in dollars)	877.58	731.25	754.43
	(357.69)	(201.66)	(216.74)
% Owner-Occupied Housing	0.61	0.49	0.47
	(0.22)	(0.20)	(0.20)
Central City Location	0.43	0.61	0.65
	(0.50)	(0.49)	(0.48)
<u>Baseline District Characteristics</u>			
Total Enrollment	87,435.66	115,928.28	138,022.32
	(212,206.96)	(239,575.20)	(276,503.82)
% Poverty	0.39	0.49	0.48
	(0.22)	(0.20)	(0.20)
% Black Students	0.19	0.28	0.27
	(0.22)	(0.26)	(0.26)
% Latinx Students	0.16	0.19	0.19
	(0.20)	(0.22)	(0.21)

(Continued)

TABLE 1. CONTINUED

	All Metro Neighborhoods	Disinvested Neighborhoods	Gentrifying Neighborhoods
Baseline District Characteristics			
Per-Pupil Expenditures	10,863.09	10,945.28	11,216.81
	(2,826.01)	(2,562.46)	(2,767.76)
Between-School Segregation	0.12	0.16	0.16
	(0.17)	(0.18)	(0.19)
% Charters	0.01	0.01	0.01
	(0.03)	(0.03)	(0.02)
% Magnets	0.03	0.04	0.04
	(0.09)	(0.12)	(0.12)
Charter Expansion, 2000–12	0.27	0.33	0.34
	(0.44)	(0.47)	(0.47)
Magnet Expansion, 2000–12	0.25	0.31	0.30
	(0.43)	(0.46)	(0.46)
Nearby Schools			
Number of Local Schools, 2000	5.76	7.49	7.75
	(4.98)	(5.24)	(5.74)
Local School Openings, 2000–12	0.35	0.43	0.44
	(0.48)	(0.50)	(0.50)
Local School Closures, 2000–04	0.09	0.13	0.14
	(0.28)	(0.34)	(0.35)
Local School Openings, 1990–99	0.32	0.42	0.45
	(0.47)	(0.49)	(0.50)
Local School Closures, 1990–99	0.44	0.48	0.47
	(0.50)	(0.50)	(0.50)
n	66,624	20,392	5,901

Note: The first column refers to neighborhoods located in metropolitan statistical areas. The second column refers to disinvested urban neighborhoods, defined as neighborhoods that had, in the year 2000, a household median income and a share of recently constructed housing that was below the 50th percentile of their respective city. The third column refers to neighborhoods that met criteria for disinvestment at baseline, but between 2000 and 2012, underwent an increase in real property values, and an increase in the share of college-educated households that exceeded the growth in college-educated households in the city overall. Estimates based on first imputed dataset. Standard deviations are in parentheses.

TABLE 2. ESTIMATED EFFECTS OF SCHOOL CLOSURE ON THE LIKELIHOOD AND EXTENT OF GENTRIFICATION

	Likelihood of Gentrification		Extent of Gentrification	
	(1)	(2)	(3)	(4)
School Closures	1.05	0.77*	0.01	-0.13**
	(0.08)	(0.09)	(0.04)	(0.05)
% Black Residents	0.43***	0.41***	-0.49***	-0.51***
	(0.09)	(0.09)	(0.10)	(0.10)
Closure x %Black		1.86**		0.28*
		(0.44)		(0.11)
% Hispanic Residents	0.19***	0.18***	-0.74***	-0.76***
	(0.09)	(0.09)	(0.22)	(0.22)
Closure x %Hispanic		1.99		0.32
		(0.78)		(0.22)
Neighborhood Characteristics	X	X	X	X
District Characteristics	X	X	X	X
Pre-baseline Nhood Trends	X	X	X	X
City FEs	X	X	X	X
Observations	20,392	20,392	20,392	20,392

Note: All models are fully adjusted. Columns (1) and (2) report odds ratios from logit regressions in which gentrification is measured dichotomously. Columns (3) and (4) report coefficient estimates from OLS regressions in which gentrification is measured linearly. Sample is restricted to neighborhoods classified as disinvested at baseline. Neighborhood controls come from the 2000 U.S. Census and include proportion of owner-occupied housing, the share of residents who are under age 18, unemployment rates, poverty rates, percent of residents receiving government assistance, total population, share of residents who do not have a high school degree, median income, logged median housing price, median rent, share of residents 25 or older with a bachelor's degree or higher, whether the neighborhood is located in a central city, the number of local schools, whether a neighborhood experienced a school opening during the observation period, and an interaction between whether a neighborhood experienced a school closure and the share of Black or Latinx neighborhood residents at baseline. Binary indicators of pre-baseline school closures and openings were measured between 1990 and 1999 and were included as controls along with an interaction between each measure and the share of Black or Latinx residents at baseline. Pre-baseline trends in neighborhood characteristics were measured as the difference in each neighborhood characteristic measured at baseline at its corresponding value during the 1990 Census. School district controls come from the 2000 National Center for Educational Statistics and include total number of students, total number of schools, annual expenditures per student, percentage of children receiving free-and-reduced-price lunch, the proportion of district students who were non-White, between-school racial segregation, the share of district schools that were charters or magnets, whether the district experienced growth during the observation period in its concentration of charter or magnet schools, and an interaction between charter or magnet growth and the share of neighborhood residents who were Black. Baseline crime rates come from FBI Uniform Crime Report and were controlled at the county level. Outcome data come from the 2010–2014 American Community Survey. Estimates are based on 25 multiply imputed datasets combined based on Rubin's (1987) Rules for MI inference. Standard errors are in parentheses and are clustered at the city level.

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two-tailed tests).

TABLE 3. ROBUSTNESS CHECKS FOR THE ESTIMATED EFFECT OF SCHOOL CLOSURES ON NEIGHBORHOOD GENTRIFICATION

	Reported Estimates (1)	w/Magnets (2)	w/Magnets and Charters (3)	Racialized Gentrification (4)	100 Largest Metros (5)	SEs District (6)	40th Percentile (7)	Unimputed Data (8)	District FEs (9)
Panel A: Binary Gentrification									
School Closures	0.77*	0.82	0.81	0.76*	0.74*	0.76*	0.74*	0.73*	0.77
	(0.09)	(0.09)	(0.09)	(0.10)	(0.11)	(0.09)	(0.11)	(0.09)	(0.12)
% Black Residents	0.41***	0.41***	0.41***	0.12***	0.39***	0.39***	0.43**	0.36***	0.26***
	(0.09)	(0.09)	(0.09)	(0.04)	(0.09)	(0.09)	(0.11)	(0.08)	(0.07)
Closure x % Black	1.86**	1.73**	1.79**	1.98*	1.95*	1.88**	1.88*	1.79*	1.89*
	(0.44)	(0.36)	(0.36)	(0.68)	(0.53)	(0.44)	(0.53)	(0.46)	(0.52)
% Latinx Residents	0.18***	0.18***	0.18***	0.42	0.25**	0.18**	0.12***	0.17**	0.11***
	(0.09)	(0.09)	(0.09)	(0.23)	(0.13)	(0.09)	(0.07)	(0.09)	(0.06)
Closure x % Latinx	1.99	1.87	2.12	1.74	2.26	2.06*	2.28*	2.26	1.88
	(0.78)	(0.73)	(0.82)	(0.65)	(1.02)	(0.74)	(0.87)	(0.98)	(0.77)
Observations	20,392	20,392	20,392	20,078	14,895	19,396	13,921	16,482	15,692
Panel B: Linear Gentrification									
School Closures	-0.13**	-0.11*	-0.11*	-0.12*	-0.11	-0.14	-0.12*	-0.15**	-0.14
	(0.05)	(0.05)	(0.05)	(0.05)	(0.06)	(0.47)	(0.06)	(0.05)	(0.07)
% Black Residents	-0.51***	-0.51***	-0.51***	-0.52***	-0.53***	-0.53***	-0.42***	-0.55***	-0.56***
	(0.10)	(0.10)	(0.10)	(0.11)	(0.11)	(0.11)	(0.12)	(0.11)	(0.11)
Closure x % Black	0.28*	0.26*	0.28**	0.25*	0.27*	0.29*	0.28*	0.26*	0.32*
	(0.11)	(0.10)	(0.10)	(0.10)	(0.13)	(0.12)	(0.12)	(0.11)	(0.14)
% Latinx Residents	-0.76***	-0.76***	-0.77***	-0.62**	-0.59*	-0.76**	-0.74**	-0.72**	-0.65*
	(0.22)	(0.22)	(0.22)	(0.24)	(0.25)	(0.22)	(0.24)	(0.26)	(0.28)
Closure x % Latinx	0.32	0.30	0.32	0.30	0.28	0.33	0.26	0.36	0.28
	(0.22)	(0.21)	(0.21)	(0.21)	(0.25)	(0.20)	(0.23)	(0.24)	(0.25)
Observations	20,392	20,392	20,392	20,392	14,895	19,411	13,921	17,421	19,411

Note: Column 1 reports results from the primary analysis. Column 2 includes magnet schools in the sample of school closures. Column 3 includes magnet and charter schools in the sample of school closures. Column 4 changes the operationalization of gentrification from an SES-based measure of gentrification, where gentrifiers are college-educated households of any color, to a racialized measure of gentrification, where gentrifiers are college-educated White households. Column 5 restricts the analysis to the 100 largest MSAs. Column 6 clusters standard errors at the district rather than the city level. Column 7 reports results in which the threshold used to determine whether a neighborhood was disinvested at baseline in terms of its median income level and share of recently constructed housing was "raised" from the 50th to the 40th percentile. Colum 8 reports results from unimputed data. Column 9 reports results that include school district rather than city fixed effects. All models are fully adjusted. Estimates are based on 25 multiply imputed datasets, combined based on Rubin's Rules for MI inference.

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two-tailed tests).

TABLE 4. ESTIMATED EFFECT OF SCHOOL CLOSURES ON NEIGHBORHOOD GENTRIFICATION ACROSS VARYING PROXIMITIES TO SCHOOL CLOSURE

	< 0.5 Miles	< 1 Mile	< 1.5 Miles
Panel 1: Binary Gentrification			
School Closures	0.72*	0.77*	0.87
	(0.11)	(0.09)	(0.10)
% Black Residents	0.42***	0.41***	0.39***
	(0.09)	(0.09)	(0.08)
Closure x % Black	1.80*	1.86**	1.63*
	(0.46)	(0.44)	(0.32)
% Latinx Residents	0.19***	0.18***	0.17***
	(0.09)	(0.09)	(0.08)
Closure x % Latinx	2.16*	1.99	1.84
	(0.85)	(0.78)	(0.70)
Observations	20,392	20,392	20,392
Panel 2: Linear Gentrification			
School Closures	-0.16**	-0.13**	-0.07
	(0.05)	(0.05)	(0.05)
% Black Residents	-0.49***	-0.51***	-0.53***
	(0.10)	(0.10)	(0.10)
Closure x % Black	0.27*	0.28*	0.24*
	(0.13)	(0.11)	(0.10)
% Latinx Residents	-0.74***	-0.76***	-0.78***
	(0.22)	(0.22)	(0.22)
Closure x % Latinx	0.29	0.32	0.27
	(0.17)	(0.22)	(0.20)
Observations	20,392	20,392	20,392

Note: All models are fully adjusted. The sample is restricted to neighborhoods classified as disinvested at baseline (i.e., neighborhoods that had, at baseline, median household incomes and shares of recently constructed housing that were below the 50th percentile of their respective city). Neighborhoods were classified as gentrified if, during the observation period, they experienced a percentage increase in college-educated residents that exceeded the growth of college-educated persons in the city overall, and an increase in real housing prices. Data come from the 1990 U.S. Census, 2000 U.S. Census, 2000 National Center for Educational Statistics, 2009–14 American Community Survey, and the 2000 FBI Uniform Crime Reporting Database. Estimates are based on 25 multiply imputed datasets combined based on Rubin's Rules for MI inference. Standard errors are in parentheses and are clustered at the city level.

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two-tailed tests).

TABLE 5. FALSIFICATION TEST—DIFFERENT OBSERVATION PERIODS FOR SCHOOL CLOSURES

	Reported/Early (2000–03) (1)	Middle (2004–08) (2)	End (2009–12) (3)	Post (2013–16) (4)
Panel A: Binary Gentrification				
School Closures	0.77*	1.12	1.01	0.98
	(0.09)	(0.12)	(0.10)	(0.15)
% Black Residents	0.41***	0.43***	0.44***	0.42***
	(0.09)	(0.09)	(0.09)	(0.09)
Closure x % Black	1.86**	0.99	0.90	0.83
	(0.44)	(0.18)	(0.19)	(0.19)
% Latinx Residents	0.18***	0.20***	0.19***	0.18***
	(0.09)	(0.10)	(0.09)	(0.09)
Closure x % Latinx	1.99	0.83	1.07	2.55*
	(0.78)	(0.24)	(0.22)	(1.04)
Observations	20,392	20,392	20,392	19,869
Panel 2: Linear Gentrification				
School Closures	-0.13**	0.06	0.07	0.08
	(0.05)	(0.04)	(0.05)	(0.09)
% Black Residents	-0.51***	-0.47***	-0.45***	-0.48***
	(0.10)	(0.10)	(0.09)	(0.09)
Closure x % Black	0.28*	-0.09	-0.15	-0.15
	(0.11)	(0.08)	(0.10)	(0.12)
% Latinx Residents	-0.76***	-0.74***	-0.74***	-0.76***
	(0.22)	(0.22)	(0.22)	(0.22)
Closure x % Latinx	0.32	0.00	-0.03	0.30
	(0.22)	(0.14)	(0.11)	(0.22)
Observations	20,392	20,392	20,392	19,911

Note: All models are fully adjusted and include city fixed effects. Gentrification was observed between 2000 and 2012. Each column reports results based on different observation periods for school closures. Column (1) repeats results from the main analysis in which school closures were observed during the first four years of the observation period (2000–03). Column (2) reports results in which school closures were observed during the middle of the observation period (2004–08). Column (3) reports results in which school closures were observed during the end of the observation period (2009–12). Column (4) reports results in which school closures were observed during the four years after the observation period (2013–16). Estimates are based on 25 multiply imputed datasets combined based on Rubin's Rules for MI inference. Standard errors are in parentheses and are clustered at the city level.

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two-tailed tests).

TABLE 6. FALSIFICATION TEST—PRE-BASELINE TRENDS IN GENTRIFICATION

	Pre-baseline Trends			
	Housing Prices	% College Educated	Median Rent	% White Residents
	(1)	(2)	(3)	(4)
Pre-baseline Trend	1.00	4.38	0.91	2.12
	(0.00)	(7.25)	(0.10)	(2.30)
% Black Residents	2.57	3.08*	2.93	2.45
	(1.31)	(1.46)	(1.67)	(1.23)
Trend x % Black	1.00	0.30	1.01	0.03
	(0.00)	(0.74)	(0.11)	(0.06)
% Latinx Residents	4.87	6.44	2.30	17.73*
	(4.60)	(6.15)	(3.13)	(22.66)
Trend x % Latinx	1.00	1.71	1.33	8.58
	(0.01)	(9.04)	(0.37)	(24.45)
Observations	15,744	15,744	15,744	15,744

Note: This table reports results from fully adjusted logistic regressions of school closures on an interaction between shares of non-White residents at baseline and pre-baseline trends in the neighborhood characteristic specified in the column name. The sample is restricted to neighborhoods classified as disinvested at baseline (i.e., neighborhoods that had, at baseline, median household incomes and shares of recently constructed housing that were below the 50th percentile of their respective city). Neighborhoods were classified as gentrified if, during the observation period, they experienced a percentage increase in college-educated residents that exceeded the growth of college-education persons in the city overall, and an increase in real housing prices. Data come from the 1990 U.S. Census, 2000 U.S. Census, 2000 National Center for Educational Statistics, 2009–14 American Community Survey, and the 2000 FBI Uniform Crime Reporting Database. The number of observations in this analysis is smaller than in the primary analysis because the inclusion of city fixed effects had different sample size implications for each analysis. In particular, school closures varied across neighborhoods in fewer cities than did gentrification. Estimates are based on 25 multiply imputed datasets combined based on Rubin's Rules for MI inference. Standard errors are in parentheses and are clustered at the city level.

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two-tailed tests).

FIGURE 1. PREDICTED PROBABILITY OF GENTRIFICATION ACROSS SHARES OF BLACK RESIDENTS AT BASELINE FOR NEIGHBORHOODS THAT DID AND DID NOT EXPERIENCE A SCHOOL CLOSURE NEARBY

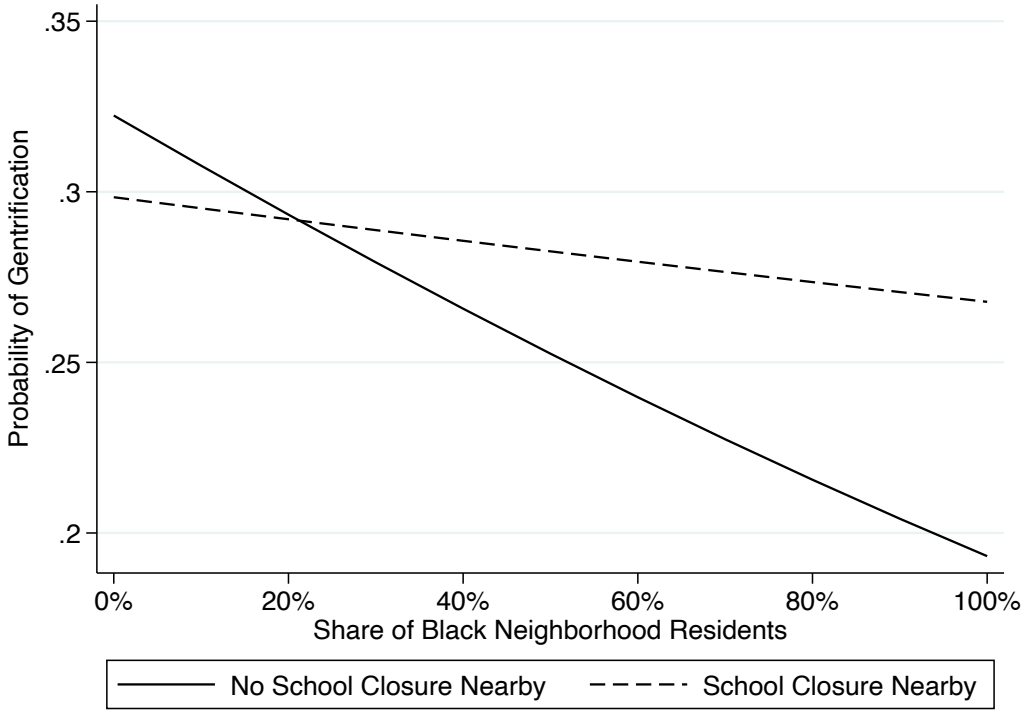


FIGURE 2. PREDICTED EXTENT OF GENTRIFICATION ACROSS SHARES OF BLACK RESIDENTS AT BASELINE FOR NEIGHBORHOODS THAT DID AND DID NOT EXPERIENCE A SCHOOL CLOSURE NEARBY

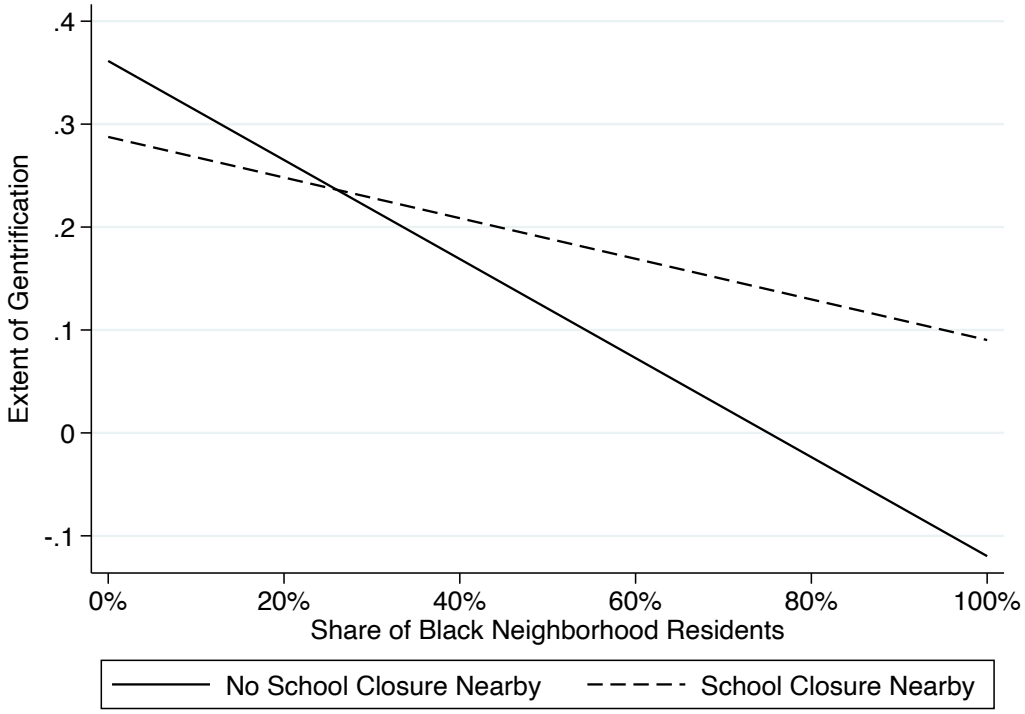


FIGURE 3. MARGINAL EFFECT OF SCHOOL CLOSURES ON THE PROBABILITY OF GENTRIFICATION ACROSS SHARES OF BLACK RESIDENTS

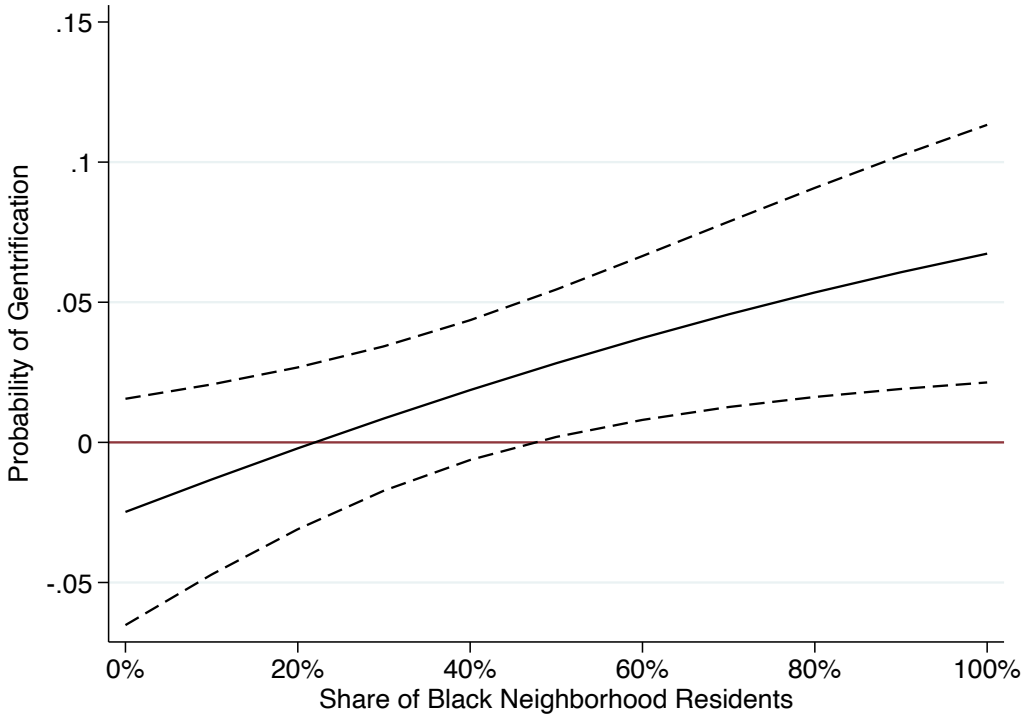


FIGURE 4. MARGINAL EFFECT OF SCHOOL CLOSURES ON THE EXTENT OF GENTRIFICATION ACROSS SHARES OF BLACK RESIDENTS

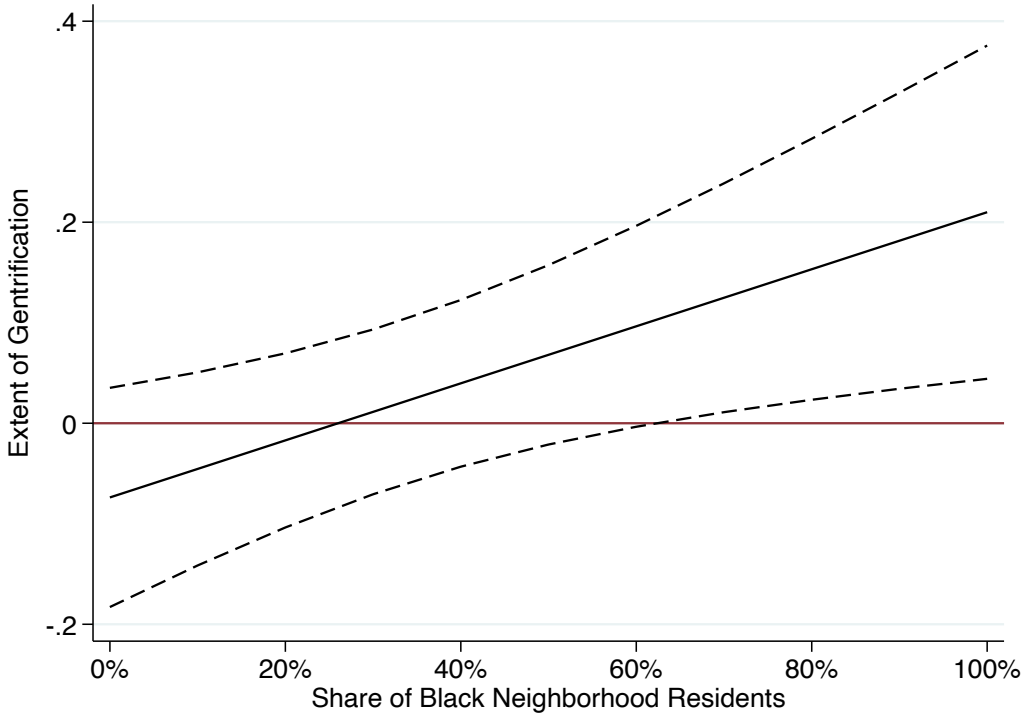


FIGURE 5. ESTIMATED EFFECT OF SCHOOL CLOSURES ON NEIGHBORHOOD SOCIODEMOGRAPHIC CHARACTERISTICS ACROSS SHARES OF BLACK RESIDENTS AT BASELINE

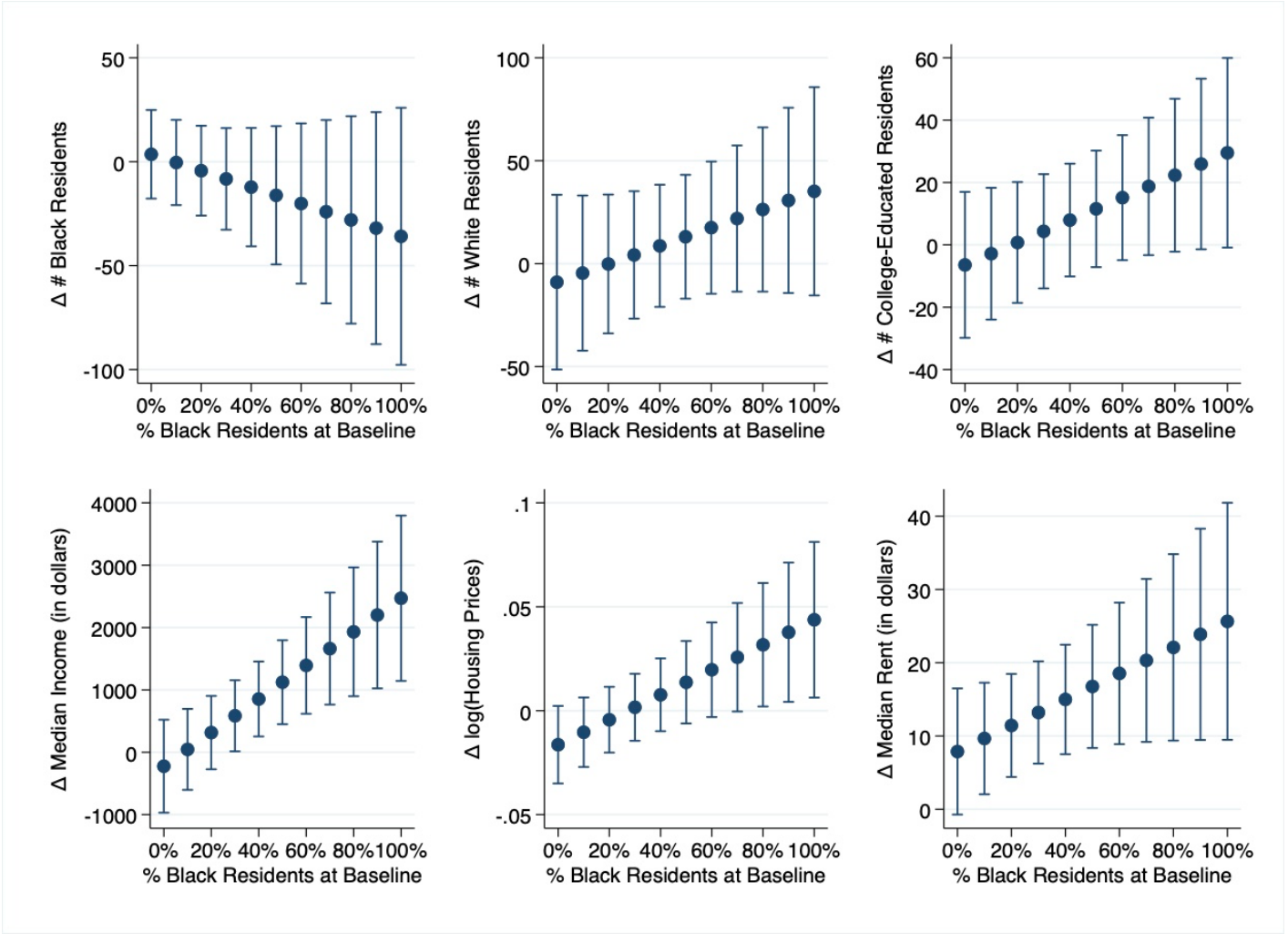


TABLE A.1. ESTIMATED EFFECTS OF SCHOOL CLOSURE ON THE LIKELIHOOD AND EXTENT OF GENTRIFICATION

	Likelihood of Gentrification		Extent of Gentrification	
	(1)	(2)	(3)	(4)
School Closures	1.05	0.77*	0.01	-0.13**
	(0.08)	(0.09)	(0.04)	(0.05)
% Black Residents	0.43***	0.41***	-0.49***	-0.51***
	(0.09)	(0.09)	(0.10)	(0.10)
Closure x %Black		1.86**		0.28*
		(0.44)		(0.11)
% Hispanic Residents	0.19***	0.18***	-0.74***	-0.76***
	(0.09)	(0.09)	(0.22)	(0.22)
Closure x %Hispanic		1.99		0.32
		(0.78)		(0.22)
% Owner-Occupied	1.22	1.20	-0.09	-0.10
	(0.26)	(0.25)	(0.12)	(0.12)
Proportion of Children <18	0.14**	0.14**	-1.04**	-1.04**
	(0.10)	(0.09)	(0.33)	(0.33)
% Female-Headed HH	1.36	1.35	0.22	0.21
	(0.46)	(0.45)	(0.18)	(0.18)
Unemployment Rate	0.07***	0.07***	-1.12**	-1.12**
	(0.05)	(0.05)	(0.35)	(0.35)
Poverty Rate	4.41*	4.38*	0.67*	0.67*
	(2.58)	(2.57)	(0.33)	(0.33)
% Govn't Assistance	0.33	0.33	-0.75*	-0.76*
	(0.29)	(0.29)	(0.37)	(0.36)
# Nhood Residents	1.00***	1.00***	-0.00***	-0.00***
	(0.00)	(0.00)	(0.00)	(0.00)
% No H.S. Degree	2.98	3.01	1.06**	1.06**
	(2.26)	(2.25)	(0.39)	(0.39)
Median Income	1.00	1.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
log(Housing Price)	2.00***	2.00***	0.07	0.07
	(0.34)	(0.34)	(0.10)	(0.10)
Median Rent	1.00***	1.00***	-0.00***	-0.00***
	(0.00)	(0.00)	(0.00)	(0.00)
% Bachelor's Degree	2.95	2.87	0.69*	0.69*
	(1.69)	(1.67)	(0.31)	(0.32)
Principal City	1.23**	1.24**	0.13**	0.13**
	(0.10)	(0.10)	(0.04)	(0.04)
# of Nearby Schools	1.01	1.01	0.01**	0.01**
	(0.01)	(0.01)	(0.01)	(0.01)
Crime Rates	1.00	1.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)

(Continued)

TABLE A.1: CONTINUED

	Likelihood of Gentrification		Extent of Gentrification	
	(1)	(2)	(3)	(4)
# of Students, District	1.00***	1.00***	-0.00***	-0.00***
	(0.00)	(0.00)	(0.00)	(0.00)
# of Schools, District	1.01***	1.01***	0.00***	0.00***
	(0.00)	(0.00)	(0.00)	(0.00)
% FRPL, District	0.77	0.76	-0.08	-0.09
	(0.28)	(0.27)	(0.13)	(0.13)
% Black, District	1.41	1.44	0.06	0.07
	(0.47)	(0.47)	(0.12)	(0.12)
% Hispanic, District	0.80	0.84	0.07	0.09
	(0.34)	(0.36)	(0.15)	(0.16)
Per-Pupil Expend, District	1.00***	1.00***	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Segregation, District	1.32	1.33	0.21*	0.21*
	(0.26)	(0.26)	(0.10)	(0.10)
% Charter Schools, District	0.22	0.23	-0.54	-0.53
	(0.26)	(0.28)	(0.34)	(0.34)
% Magnet Schools, District	1.58	1.60	0.15	0.16
	(0.66)	(0.68)	(0.14)	(0.14)
Charter Growth in District, 2000–12	0.99	0.98	-0.01	-0.02
	(0.18)	(0.18)	(0.09)	(0.09)
Charter Growth x % Black	1.02	1.02	-0.10	-0.10
	(0.27)	(0.27)	(0.17)	(0.17)
Charter Growth x % Hispanic	1.14	1.21	-0.00	0.02
	(0.44)	(0.46)	(0.15)	(0.15)
Magnet Growth in District, 2000–12	0.96	0.96	-0.08	-0.08
	(0.17)	(0.16)	(0.10)	(0.10)
Magnet Growth x % Black	1.49	1.51	0.24	0.24
	(0.42)	(0.41)	(0.16)	(0.16)
Magnet Growth x % Hispanic	1.10	1.08	0.14	0.13
	(0.48)	(0.46)	(0.19)	(0.19)
Local School Opening, 2000–12	1.14	1.19	0.12**	0.15***
	(0.11)	(0.11)	(0.04)	(0.04)
Local School Opening x % Black	0.92	0.83	-0.15	-0.20*
	(0.19)	(0.15)	(0.09)	(0.08)
Local School Opening x % Hispanic	0.74	0.68*	-0.26**	-0.30***

(Continued)

TABLE A.1: CONTINUED

	Likelihood of Gentrification		Extent of Gentrification	
	(1)	(2)	(3)	(4)
Local School Opening,	0.96	0.98	0.01	0.01
1990–1999	(0.08)	(0.08)	(0.03)	(0.03)
Local Opening x % Black	1.01	0.97	0.04	0.02
	(0.19)	(0.18)	(0.08)	(0.08)
Local Opening x %	1.05	1.02	0.06	0.05
Hispanic	(0.21)	(0.21)	(0.08)	(0.08)
Local School Closure,	1.21*	1.23**	0.04	0.04
1990–1999	(0.10)	(0.10)	(0.03)	(0.03)
Pre-closure x % Black	1.14	1.11	0.14	0.13
	(0.21)	(0.19)	(0.08)	(0.08)
Pre-closure x % Hispanic	0.69	0.65	-0.15	-0.18
	(0.15)	(0.14)	(0.10)	(0.10)
Δ % Black	0.17***	0.17***	-0.76***	-0.76***
	(0.09)	(0.09)	(0.18)	(0.18)
Δ % Latinx	3.42*	3.45*	0.52	0.52
	(1.94)	(1.97)	(0.30)	(0.31)
Δ % Owner-Occupied	1.07	1.08	0.42	0.42
	(0.48)	(0.49)	(0.26)	(0.26)
Δ % Child	0.26	0.26	-1.13**	-1.14**
	(0.19)	(0.19)	(0.42)	(0.41)
Δ % Female-Headed HH	0.96	0.96	0.06	0.06
	(0.26)	(0.26)	(0.14)	(0.14)
Δ Unemployment Rate	4.54*	4.50*	0.59*	0.59*
	(3.11)	(3.08)	(0.29)	(0.29)
Δ Poverty Rate	0.19***	0.19***	-0.64*	-0.64*
	(0.09)	(0.09)	(0.28)	(0.28)
Δ % Govn't Assistance	1.05	1.07	-0.12	-0.12
	(0.70)	(0.71)	(0.27)	(0.27)
Δ # Nhood Residents	1.00	1.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Δ % No H.S. Degree	0.11***	0.11***	-1.30***	-1.30***
	(0.06)	(0.06)	(0.28)	(0.28)
Δ Median Income	1.00*	1.00*	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Δ log(Housing Price)	1.00***	1.00***	-0.00***	-0.00***
	(0.00)	(0.00)	(0.00)	(0.00)

(Continued)

TABLE A.1: CONTINUED

	Likelihood of Gentrification		Extent of Gentrification	
	(1)	(2)	(3)	(4)
Δ Median Rent	1.00***	1.00***	0.00***	0.00***
	(0.00)	(0.00)	(0.00)	(0.00)
Δ % Bachelor's Degree	0.05***	0.05***	-0.25	-0.24
	(0.04)	(0.04)	(0.40)	(0.40)
Observations	20,392	20,392	20,392	20,392
City fixed effects	X	X	X	X

Note: Columns (1) and (2) report odds ratios from logit regressions in which gentrification is measured dichotomously. Columns (3) and (4) report coefficient estimates from OLS regressions in which gentrification is measured linearly. Sample is restricted to neighborhoods classified as disinvested at baseline. Data come from the 1990 U.S. Census, 2000 U.S. Census, 2000 National Center for Educational Statistics, 2009–14 American Community Survey, and the 2000 FBI Uniform Crime Reporting Database. Estimates are based on 25 multiply imputed datasets combined based on Rubin's Rules for MI inference. Standard errors are in parentheses and are clustered at the city level.
*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two-tailed tests).

TABLE B.1. ESTIMATED EFFECT OF SCHOOL CLOSURES ON NEIGHBORHOOD SOCIODEMOGRAPHIC CHARACTERISTICS

	ΔBlack Residents	ΔWhite Residents	ΔHispanic Residents	ΔMedian Income	Δlog(Housing Prices)	ΔMedian Rent	ΔCollege-Educated
School Closures	-2.52	-49.93	-12.61	-998.09*	-0.03	1.29	-24.23*
	(13.54)	(28.03)	(17.07)	(429.48)	(0.01)	(5.81)	(10.52)
% Black Residents	-555.85***	754.23***	-102.78*	-5,478.72***	-0.10***	5.83	-37.71
	(87.91)	(64.05)	(48.13)	(1,318.13)	(0.03)	(19.94)	(24.63)
Closure x % Black	-41.09	37.72	34.51	2,694.35**	0.06**	17.76	35.96
	(33.50)	(37.52)	(26.90)	(854.34)	(0.02)	(10.04)	(20.04)
% Latinx Residents	-12.12	-739.58***	1,900.13***	-2,796.26	-0.19**	31.34	-92.80
	(99.80)	(177.51)	(162.34)	(4,132.42)	(0.07)	(32.68)	(68.96)
Closure x % Latinx	37.01	215.62**	-113.00	4,227.09***	0.07	36.04*	97.19*
	(35.78)	(78.52)	(110.95)	(1,208.91)	(0.06)	(16.33)	(46.42)
Observations	20,392	20,392	20,392	20,391	20,392	20,315	20,392

Note: Sample is restricted to neighborhoods classified as disinvested at baseline in the year 2000 (i.e., neighborhoods that had, at baseline, median household incomes and shares of recently constructed housing that were below the 50th percentile of their respective city). Neighborhoods were classified as gentrified if, during the observation period, they experienced a percentage increase in college-educated residents that exceeded the growth of college-educated persons in the city overall, and an increase in real housing prices. Neighborhood controls come from the 2000 U.S. Census and include proportion of owner-occupied housing, the share of residents under age 18, unemployment rates, poverty rates, percent of residents receiving government assistance, total population, share of residents who do not have a high school degree, median income, logged median housing price, median rent, share of residents 25 or older with a bachelor's degree or higher, whether the neighborhood is located in a central city, the number of local schools, whether a neighborhood experienced a school opening during the observation period, and an interaction between whether a neighborhood experienced a school closure and the share of non-White neighborhood residents at baseline. Pre-baseline trends in neighborhood characteristics were measured as the difference in each neighborhood characteristic measured at baseline at its corresponding value during the 1990 Census. Controls were included for whether, between 1990 and 1999, a neighborhood experienced a school closure or school opening within one mile, along with an interaction between each indicator and neighborhood racial composition. School district controls come from the 2000 National Center for Educational Statistics and include total number of students, total number of schools, annual expenditures per student, percentage of children receiving free-and-reduced-price lunch, the proportion of district students who were non-White, between-school racial segregation, the share of district schools that were charters or magnets, whether the district experienced growth during the observation period in its concentration of charter or magnet schools, and an interaction between charter or magnet growth and the share of neighborhood residents who were Black. Baseline crime rates come from the FBI Uniform Crime Report and were controlled at the county level. Outcome data come from the 2010–2014 American Community Survey. Estimates are based on 25 multiply imputed datasets combined based on Rubin's Rules for MI inference. Standard errors are in parentheses and are clustered at the city level.

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two-tailed tests).

TABLE C.1. MISSING DATA RATES

	Missing Data Rate
Total Residents, Baseline	0.00
Median Income, Baseline	0.00
Poverty Rate, Baseline	0.00
Proportion of Children <18, Baseline	0.00
% Residents w/Government Aid, Baseline	0.00
% Adult Residents Who Are White w/College Deg., Baseline	0.00
% Adult Residents w/o H.S. Deg., Baseline	0.00
Unemployment Rate, Baseline	0.00
% Female-Headed HH, Baseline	0.00
% Black Residents, Baseline	0.00
% Hispanic Residents, Baseline	0.00
Housing Price (in dollars), Baseline	0.00
Median Rent (in dollars), Baseline	0.00
% Owner-Occupied Housing, Baseline	0.00
Central City Location	0.00
Total Residents, Pre-baseline	0.00
Median Income, Pre-baseline	0.00
Poverty Rate, Pre-baseline	0.00
Proportion of Children <18, Pre-baseline	0.00
% Residents w/Government Aid, Pre-baseline	0.00
% Adult Residents Who are White w/College Deg., Pre-baseline	0.00
% Adult Residents w/o H.S. Deg., Pre-baseline	0.00
Unemployment Rate, Pre-baseline	0.00
% Female-Headed HH, Pre-baseline	0.00
% Black Residents, Pre-baseline	0.00
% Latinx Residents, Pre-baseline	0.00
Housing Price (in dollars), Pre-baseline	0.00
Median Rent (in dollars), Pre-baseline	0.00
% Owner-Occupied Housing, Pre-baseline	0.00
Total Enrollment, District	0.05
# of Schools, District	0.05
% Poverty, District	0.16
% Black Students, District	0.05
% Hispanic Students, District	0.05
Per-Pupil Expenditures, District	0.05
Between-School Segregation, District	0.09
% Charters, District	0.05
% Magnets, District	0.05
Charter Expansion, District	0.05
Magnet Expansion, District	0.05
Crime Rates, County	0.00

Note: Date come from the 1990 and 2000 U.S. Census, the 2009–14 American Community Survey, the 2000 National Center for Educational Statistics Elementary and Secondary Information System, and the FBI Uniform Crime Reporting Database. Sample is restricted to neighborhoods classified as disinvested at baseline (i.e., neighborhoods that had, at baseline, median household incomes and shares of recently constructed housing that were below the 50th percentile of their respective city).

TABLE D.1. ROBUSTNESS CHECKS FOR THE ESTIMATED EFFECT OF SCHOOL CLOSURES ON NEIGHBORHOOD GENTRIFICATION BASED ON DIFFERENT OBSERVATION PERIODS FOR EARLY-PERIOD SCHOOL CLOSURES

	2000–01	2000–02	2000–03	2000–04
	(1)	(2)	(3)	(4)
Panel 1: Binary Gentrification				
School Closures	0.83	0.90	0.81	0.94
	(0.16)	(0.13)	(0.09)	(0.10)
% Black Residents	0.40***	0.40***	0.39***	0.39***
	(0.08)	(0.08)	(0.08)	(0.08)
Closure x % Black	2.15*	1.49	1.78**	1.32
	(0.66)	(0.35)	(0.39)	(0.29)
% Latinx Residents	0.17***	0.16***	0.16***	0.17***
	(0.08)	(0.08)	(0.07)	(0.08)
Closure x % Latinx	1.19	1.34	1.69	1.04
	(0.61)	(0.47)	(0.62)	(0.35)
Observations	20,392	20,392	20,392	20,392
Panel 2: Linear Gentrification				
School Closures	-0.18**	-0.07	-0.12*	-0.05
	(0.07)	(0.06)	(0.05)	(0.04)
% Black Residents	-0.51***	-0.51***	-0.52***	-0.51***
	(0.10)	(0.10)	(0.10)	(0.10)
Closure x % Black	0.31	0.15	0.27**	0.08
	(0.20)	(0.11)	(0.10)	(0.11)
% Latinx Residents	-0.77***	-0.77***	-0.78***	-0.78***
	(0.20)	(0.21)	(0.21)	(0.22)
Closure x % Latinx	0.46	0.15	0.26	0.17
	(0.25)	(0.23)	(0.21)	(0.15)
Observations	20,392	20,392	20,392	20,392

Note: All models are fully adjusted and include city fixed effects. Gentrification was observed between 2000 and 2012. Each column reports results based on different observation periods for school closures. Column (1) reports results for school closures in 2000–01. Column (2) reports results for school closures in 2000–02. Column (3) repeats results from the primary analysis in which school closures were observed in 2000–03. Column (4) reports results in which school closures were observed in 2000–04. Estimates are based on 25 multiply imputed datasets combined based on Rubin's (1987) Rules for MI inference. Standard errors are in parentheses and are clustered at the city level.

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$ (two-tailed tests).

FIGURE A.1. PREDICTED PROBABILITY OF GENTRIFICATION ACROSS SHARES OF RESIDENTS AT BASELINE FOR NEIGHBORHOODS THAT DID AND DID NOT EXPERIENCE A SCHOOL CLOSURE NEARBY

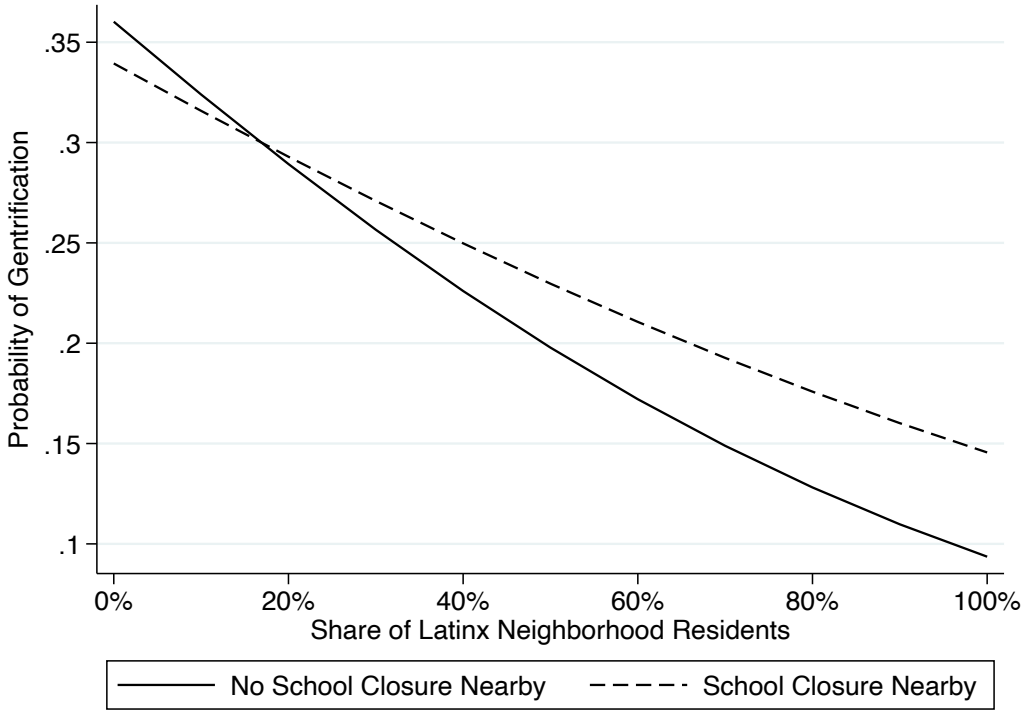


FIGURE A.2. PREDICTED EXTENT OF GENTRIFICATION ACROSS SHARES OF RESIDENTS AT BASELINE FOR NEIGHBORHOODS THAT DID AND DID NOT EXPERIENCE A SCHOOL CLOSURE NEARBY

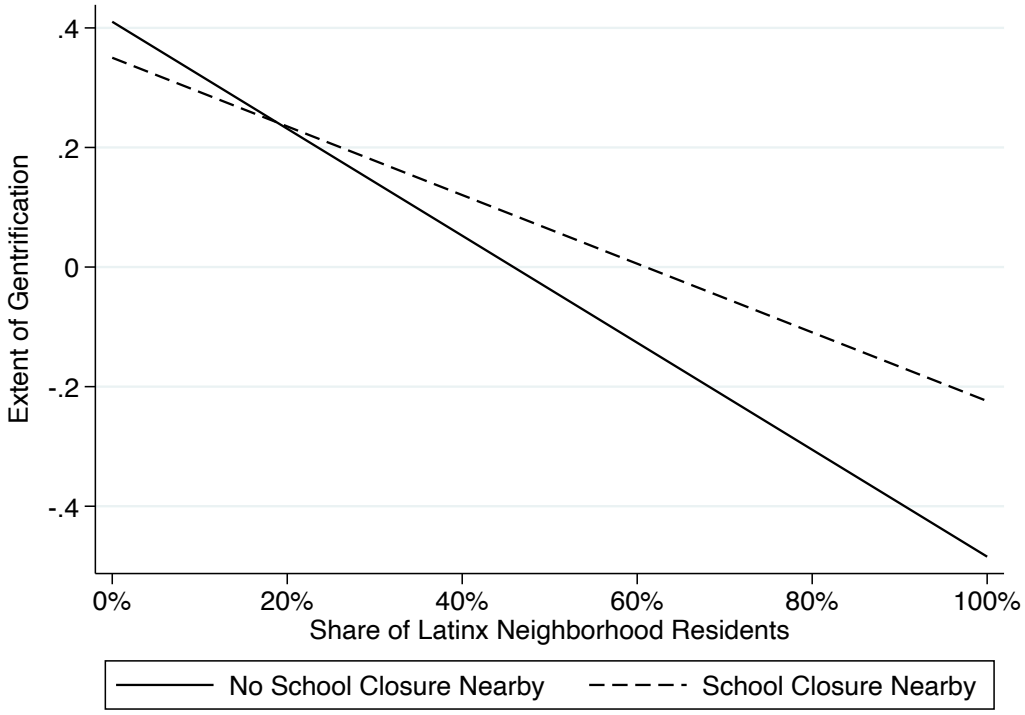


FIGURE A.3. MARGINAL EFFECT OF SCHOOL CLOSURES ON THE PROBABILITY OF GENTRIFICATION ACROSS SHARES OF LATINX RESIDENTS

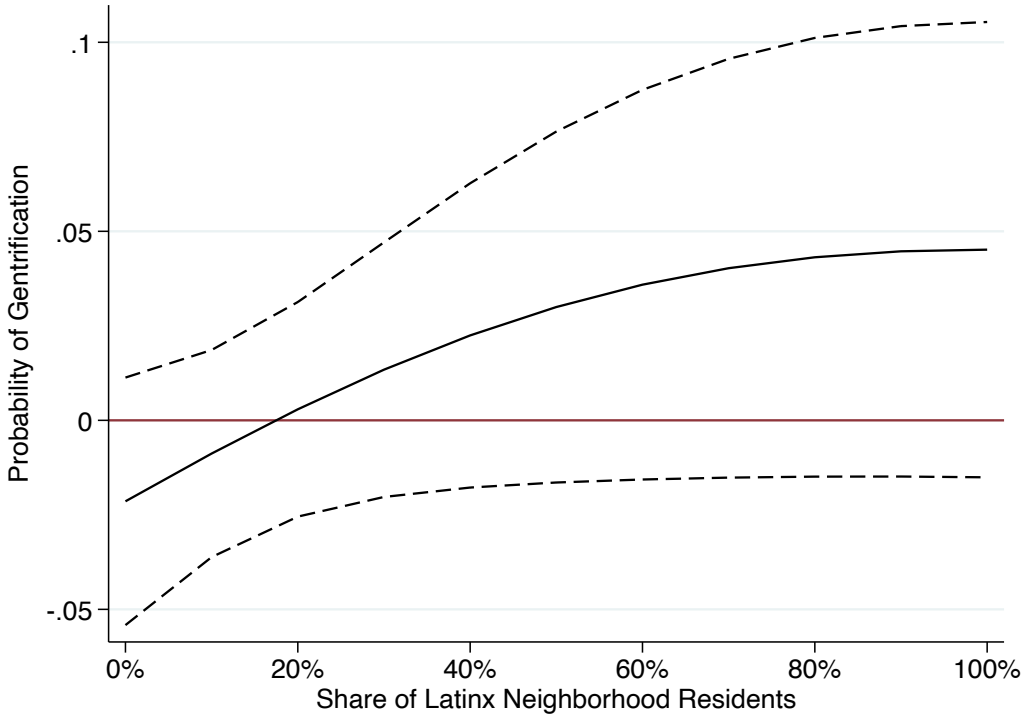


FIGURE A.4. MARGINAL EFFECT OF SCHOOL CLOSURES ON THE PROBABILITY OF GENTRIFICATION ACROSS SHARES OF LATINX RESIDENTS

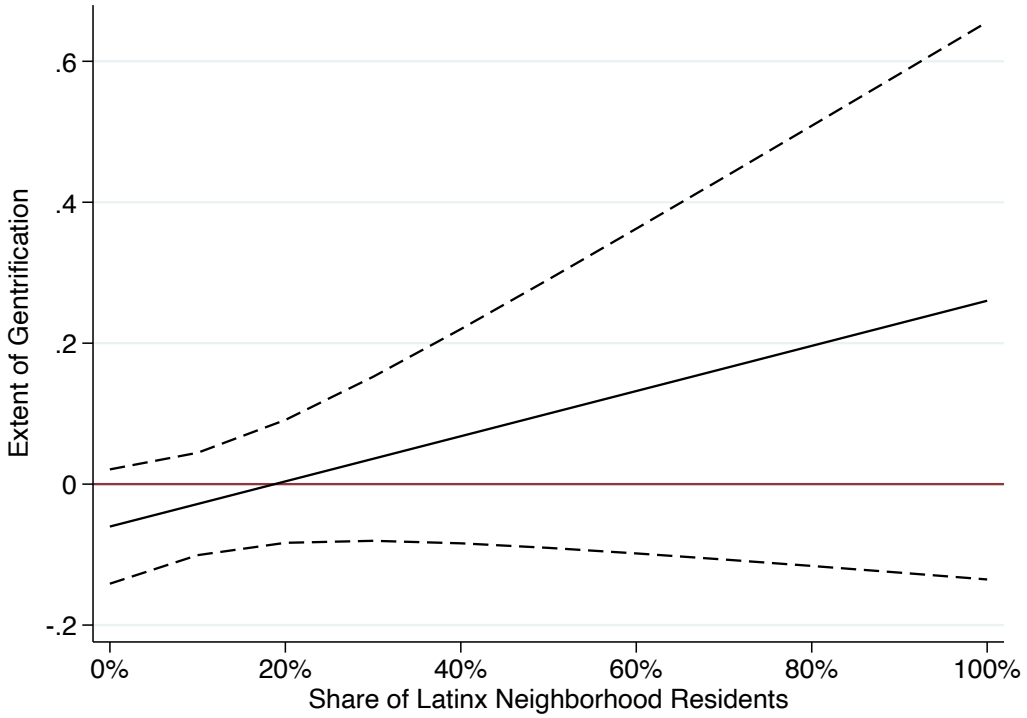


FIGURE B.1. ESTIMATED EFFECT OF SCHOOL CLOSURES ON NEIGHBORHOOD SOCIODEMOGRAPHIC CHARACTERISTICS ACROSS SHARES OF LATINX RESIDENTS AT BASELINE

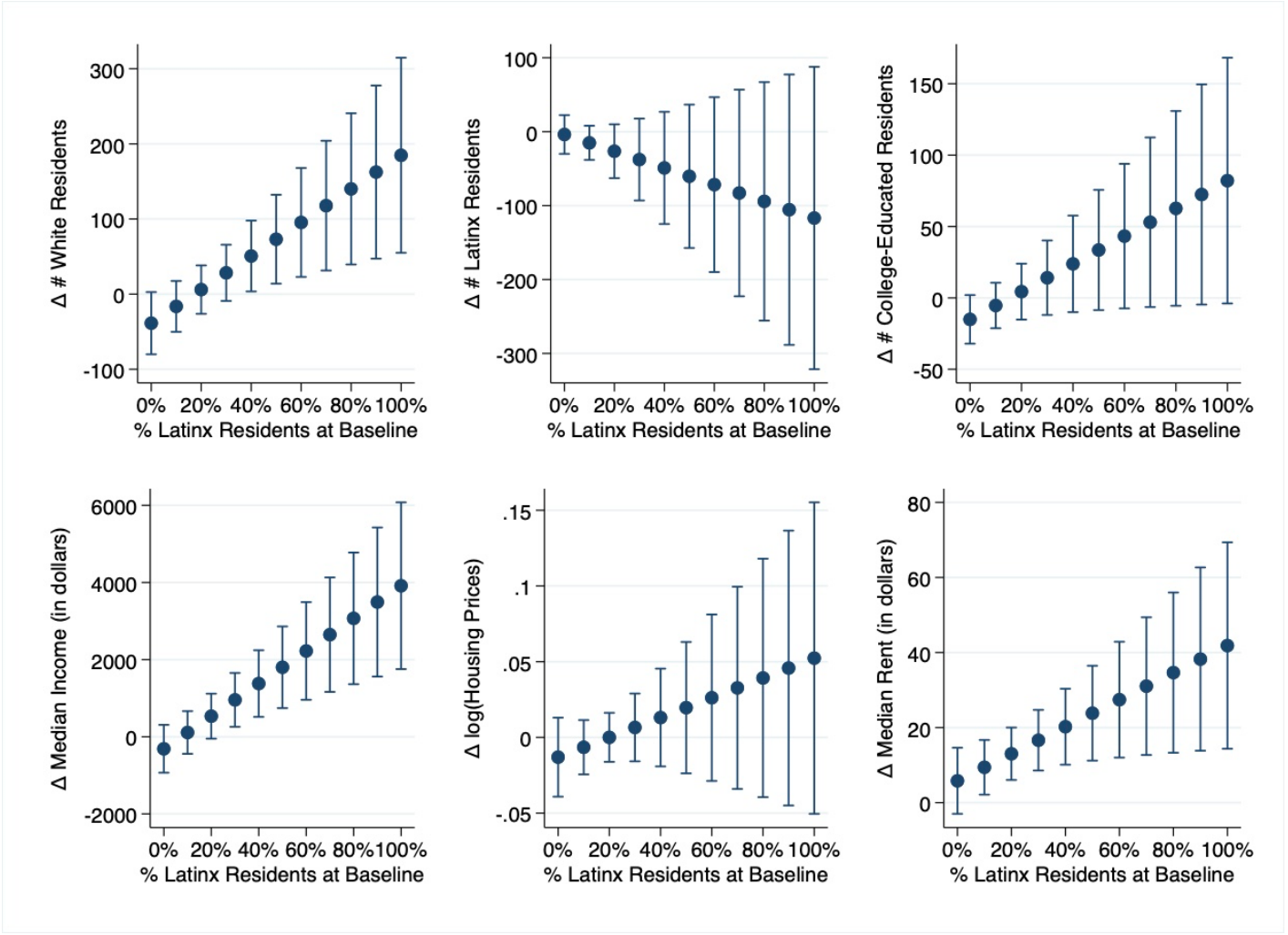


FIGURE C.1. KERNEL DENSITY PLOT OF PERCENT BLACK RESIDENTS

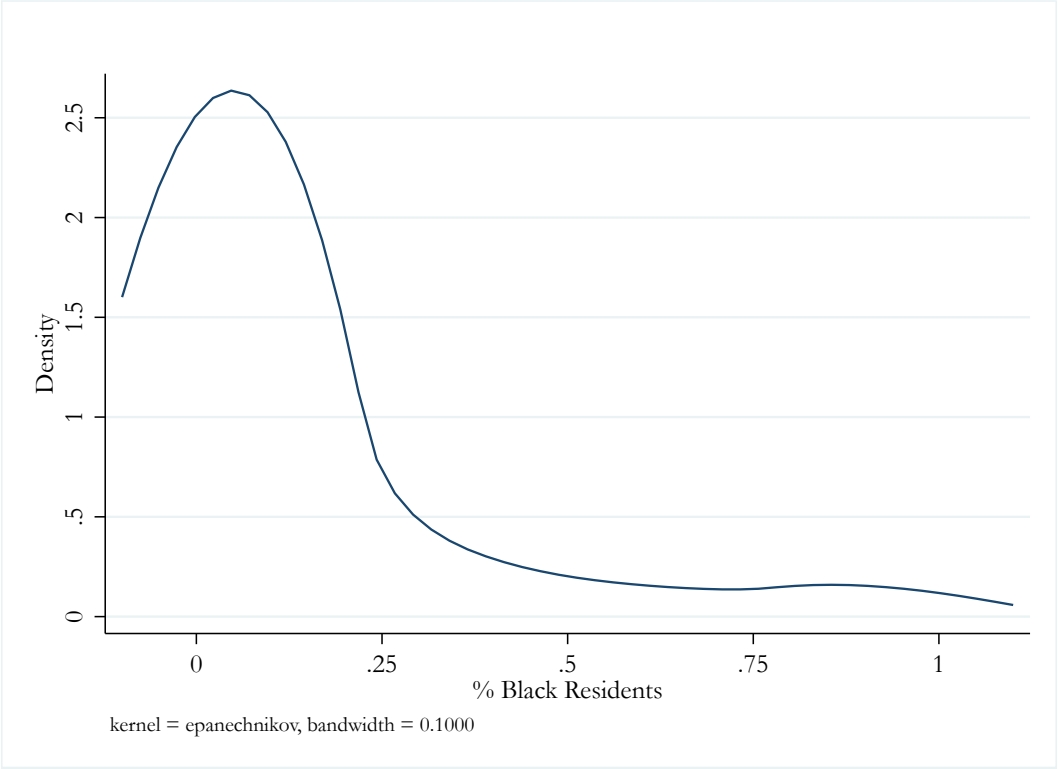


FIGURE C.2. KERNEL DENSITY PLOT OF PERCENT LATINX RESIDENTS

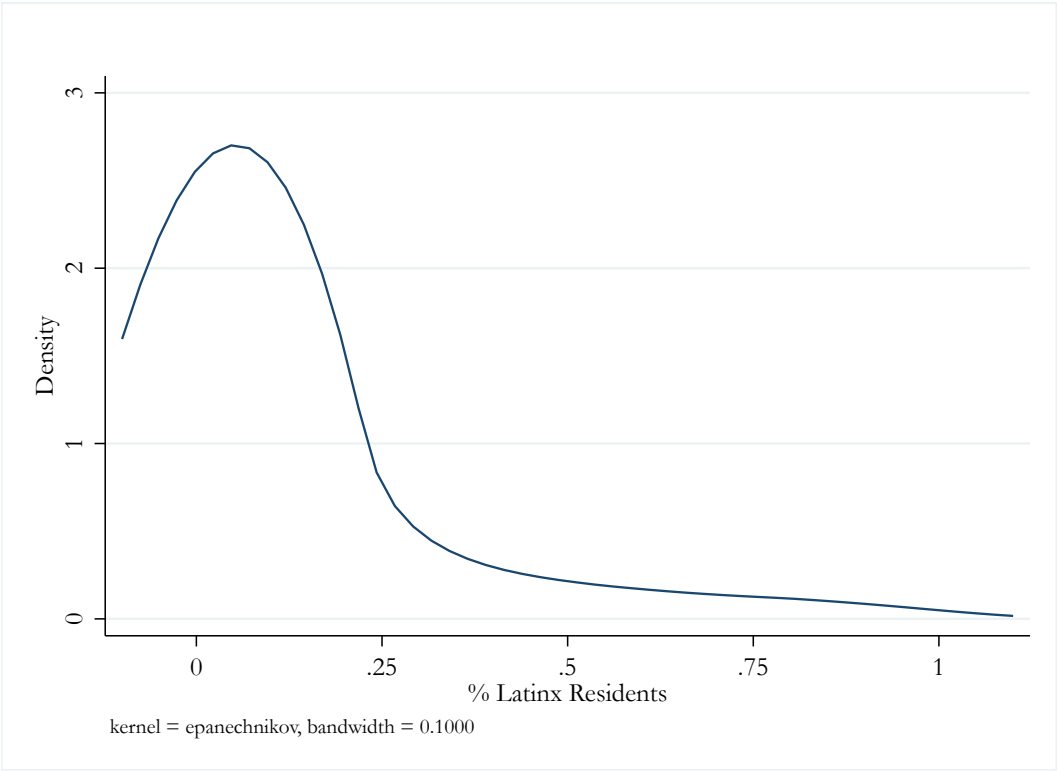
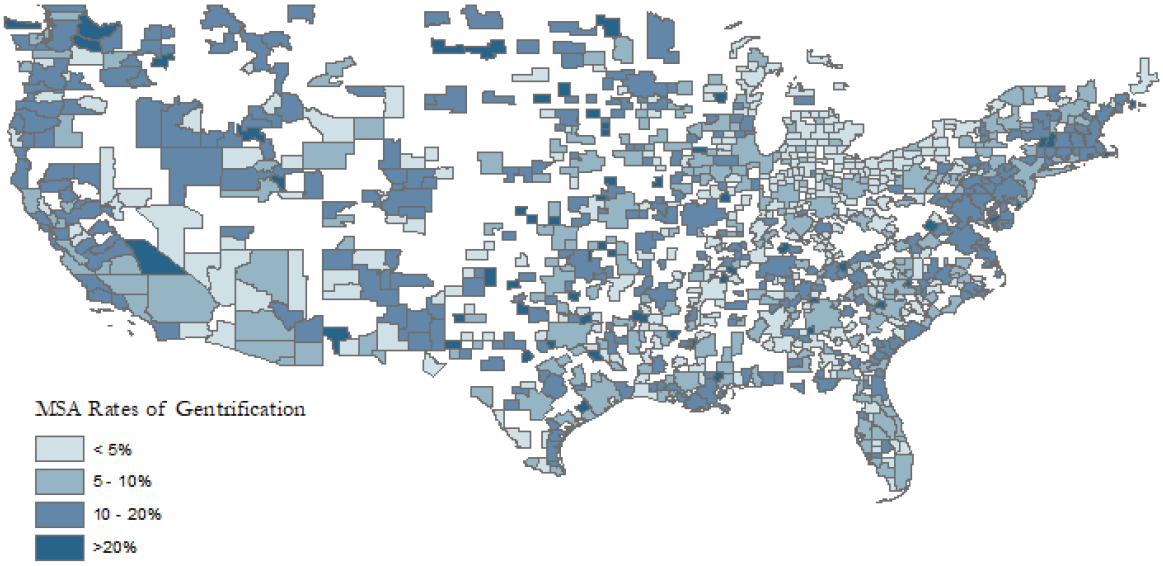


FIGURE D.1. MSA RATES OF GENTRIFICATION, 2000 TO 2012



Note: This figure displays rates of gentrification across Metropolitan Statistics Areas (MSAs) between 2000 and 2012. Data come from the 2000 U.S. Census and the 2009–14 American Community Survey. Portions of this U.S. map are blank because MSAs do not encompass the entirety of the country.