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Abstract
We use multiple longitudinal data sources and propensity score matching to assess the long-term outcomes of the Neighborhood Transformation Initiative (NTI) in the Sandtown-Winchester community of Baltimore. This comprehensive community initiative, implemented in the 1990s, remains one of the most well-known urban revitalization projects in the country, due to its significant funding (more than $100 million) and comprehensive approach to neighborhood redevelopment, including housing construction, education reform, and employment services. We find significant increases in homeownership and reductions in unemployment in Sandtown. However, there were limited gains elsewhere, as poverty remained high and local schools did not show sustained improvement. Our findings speak to the durability of social inequality in high-poverty and racially segregated neighborhoods, and underscore the need to further develop rigorous standards for research that evaluates community-level interventions.

Keywords
community development, housing, policy evaluation

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Introduction

In April 2015, a Black man named Freddie Gray was killed while in police custody, sparking unrest in the city of Baltimore and bringing international attention to the issues of race, police brutality, and urban poverty. Freddie Gray was from a neighborhood in West Baltimore called Sandtown-Winchester. Almost overnight, the neighborhood of Sandtown-Winchester became global news. While most people had never heard of Sandtown, it is not the first time the small eight by nine block neighborhood gained national notice. It was the site, nearly 25 years earlier, of one of the largest community development and urban revitalization efforts in U.S. history.

In the early 1990s, Sandtown-Winchester was a struggling Baltimore neighborhood. With more than four in 10 residents living below the poverty line, it was one of a growing number of communities of concentrated poverty that had become prevalent in cities over the preceding decades (Jargowsky 1997). Research emerging in the 1990s suggested that growing up in these kinds of neighborhoods negatively influences the life chances of children and adolescents, beyond the impact of family and individual characteristics (Brooks-Gunn, Duncan, and Aber 1997; Ellen and Turner 1997). More recent scholarship continues to find deleterious impacts of neighborhood poverty on high school graduation (Harding 2003; Wodtke, Harding, and Elwert 2011) and employment or welfare receipt (Casciano and Massey 2008), strongly suggesting that neighborhood context plays a significant role in shaping the intergenerational transmission of racial inequality (Sharkey 2013).

As policy makers looked for ways to address concentrated poverty in the 1990s, James Rouse, founder of The Enterprise Foundation, an organization specializing in funding and constructing affordable housing, argued for a comprehensive approach to neighborhood renewal that would address all of a community’s needs at once (Brown, Butler, and Hamilton 2001). Rouse and others specifically looked for a neighborhood that could serve as an example of this kind of renewal where, in partnership with residents, The Enterprise Foundation could showcase a model of all-inclusive community change. The resulting Sandtown-Winchester Neighborhood Transformation Initiative (NTI, hereafter) built quality affordable housing, instituted education reforms in the local schools, and provided job training and placement to residents. Drawing on public and private funding, Enterprise and partners raised more than $130 million to invest in the neighborhood.1 The scale of the investment and the comprehensive strategy attracted national attention and made the Sandtown-Winchester NTI one of the most well-known urban revitalization projects in the country (Goetz 1996; Schorr 1997).
Why is it so important to know what happened in Sandtown-Winchester? Recent events in Baltimore demand an explanation, and many have turned to look for answers in the poor segregated neighborhoods where many of the arrests and incidents involving police brutality occur. However, we have long known that the stakes are high in the unequal “geography of opportunity” of contemporary metropolitan areas (Briggs 2005). Sociologists since William Julius Wilson (1987) and as recently as Patrick Sharkey (2013) have argued that neighborhoods matter for children’s prospects. In the last 20 years, policy makers have taken different approaches to improving the neighborhoods where poor families live, including community-based investments, public housing demolition, and vouchers to give families a chance to leave high-poverty areas. However, the evidence base supporting these different approaches varies. Significant research attention and scrutiny has been given to programs that provide poor families with resources to live in lower-poverty neighborhoods such as Moving to Opportunity (MTO) or Housing Choice Vouchers (Edin, DeLuca, and Owens 2012; Ludwig et al. 2012). In comparison, despite substantial federal and local investments, we rarely see community-level or place-based policies held to the same empirical evaluation standards, which prevents us from learning as much as we could from these efforts.

To understand neighborhood-level outcomes in the years after the Sandtown-Winchester NTI, we need a research design that allows us to distinguish between program-induced changes and those driven by broader economic or social forces. In this article, we use neighborhood-level data from the period spanning the NTI, for both Sandtown-Winchester and other similar neighborhoods in Baltimore, to identify which changes in the community are most likely related to the transformation initiative. We find that the strongest impact of the NTI seemed to be an increase in homeownership, and the staving off of employment drops in the late 2000s. However we also find many remaining challenges in the neighborhood, including high poverty rates and weakly performing schools. Overall, our findings underscore the difficulty of overcoming durable neighborhood poverty and its associated challenges, as well as the need for high-quality evaluation research on community development efforts.

**Background**

Policies to address urban disadvantage have taken two distinct paths in recent decades. Assisted housing mobility programs, such as Chicago’s Gautreaux Program or MTO, provide counseling and Housing Choice Vouchers to help families move out of distressed communities, in many cases offering them an
opportunity to live in lower-poverty or less segregated neighborhoods. In contrast, place-based community development attempts to increase opportunities in the neighborhoods where the poor already live. Pastor and Turner (2010) identified four types of place-based strategies: those that are housing-based, such as the federal Housing Opportunities for People Everywhere (HOPE VI) program, which focus primarily on renewing a neighborhood’s housing stock; those that are jobs-based, such as Empowerment Zones (EZs) or the Jobs-Plus program, which seek to connect residents with employment opportunities; those that are child-focused, such as the Harlem Children’s Zone, which focus on child development and school reform; and comprehensive community initiatives (CCIs) that incorporate multiple place-based strategies. The Sandtown-Winchester NTI falls into the final category, one of a small number of place-based projects in the country that incorporated multiple reforms aimed at improving the neighborhood’s housing, schooling, and employment opportunities, while also focusing on community building (Brown, Butler, and Hamilton 2001; Kubisch et al. 2010).

Comprehensive neighborhood gains are rarely achieved by CCIs. While they may change the lives of individuals who are served by new programs, or change the look of a neighborhood with new construction and building rehabilitation, they rarely bring about neighborhood-wide improvements in family or child well-being (Kubisch et al. 2010). There are a number of potential reasons for this. Large-scale initiatives require significant commitment from outside foundations or other sponsors, which can be difficult partnerships to sustain over time or can run counter to the kind of ground-up resident empowerment that is needed to sustain neighborhood revitalization (Joseph 2010; Lowe 2004). Yet, Sandtown-Winchester had a persistent commitment from The Enterprise Foundation, and the project involved residents at all stages of the process. This may have enabled the NTI to benefit from a sustained partnership between the foundation and residents, although this did not mean that the race and class divides separating outside entities from neighborhood residents were completely resolved (see Brown, Butler, and Hamilton 2001).

Another reason CCIs may struggle to achieve their neighborhood goals comes from residential mobility. High levels of residential instability among the poor can disrupt long-standing ties in the community that are important for collective efficacy (Sampson, Raudenbush, and Earls 1997) or undermine initiatives if the population does not stay long enough to benefit from the improvements in the community. For example, in their study of the 10-city Making Connections initiative, Claudia Coulton, Brett Theodos, and Margery Austin Turner (2012) found that more than half of the residents of neighborhoods targeted for intervention moved in a three-year period, and that in some cases, a reduction in poverty among those who stayed in place was
“cancelled out” at the neighborhood level by more poor families moving in. We acknowledge the significance of this line of research by exploring the impact of the Sandtown-Winchester NTI on residential stability and population change in the neighborhood.

CCIs are also difficult to evaluate. Because their aim is improving the neighborhood context as a whole, measurement needs to address community-wide outcomes, not just those experienced by residents who were involved in specific programs. It is important to identify which neighborhood-level indicators help us evaluate the impact of an initiative on the community as a whole (Coulton 2010). Our review of the Sandtown-Winchester NTI (see below) indicates that the central focus of the initiative, in terms of overall capital expenditure and programmatic scope, was changing the physical form of the neighborhood by rehabilitating older and vacant houses and building new ones. Other aspects of the NTI were also meant to impact the whole community such as the reform of three local elementary schools serving the neighborhood or the attempt to create jobs through commercial revitalization and grants to attract new businesses. We focus our analysis on neighborhood-wide measures in these three areas (homeownership, education, and employment), as well as examine neighborhood poverty rate, which is often used as an indicator of overall quality of life due to its correlation with other social problems (e.g., Galster 2005; Small and Newman 2001; Wilson 1987).

A second significant challenge faced by analysts of CCIs is figuring out whether or not observed outcomes can be attributed to the programs as implemented. Neighborhoods may improve, decline, or remain the same over time for many reasons both internal—such as resident turnover in the neighborhood—and external—such as changes in the local or national economy, housing market, or policy environment. Thus, it can be very difficult to separate the impact of a specific neighborhood revitalization initiative from what might have happened in the absence of the program. Assessments that look only at how a particular aspect of the neighborhood has changed before and after an initiative run the risk of confounding program-specific outcomes with wider trends in the city or metropolitan area (Galster et al. 2004; Kubisch et al. 2010).

One way to address this problem is to designate a series of counterfactual areas to be used as comparisons.3 The rationale behind the counterfactual is to attempt to approximate the condition under which an observed “treatment,” such as a neighborhood intervention, is not given (Oakes and Johnson 2006). In the case of neighborhood evaluations, one method of determining an appropriate counterfactual has been to use propensity score matching. In their evaluations of the effectiveness of EZs, Rich and Stoker (2010) and Oakley and Tsao (2006) both used propensity score matching on census tract
characteristics to identify control tracts and then compare subsequent changes in employment, poverty, housing market outcomes, or other relevant indicators between those control tracts and the census tracts that made up the EZ. This method allows analysts to use a number of census measures to identify which neighborhoods are the best counterfactual to the one receiving the intervention.

We use propensity score matching to identify a counterfactual comparison for Sandtown-Winchester. We select areas of Baltimore that had a similar probability of being exposed to the NTI “treatment,” but were not actually chosen for the NTI. To select these areas, we examine the criteria Rouse and others used when they originally selected Sandtown-Winchester as the site of the NTI. We then operationalize these criteria using census data and use the identified variables as the basis of our propensity score match. This method allows us to determine the parts of Baltimore that were most likely to be given the NTI “treatment,” but were not actually subject to the NTI. We then estimate the average treatment effect on the treated (ATT) neighborhood of Sandtown-Winchester using a set of outcome variables related to the central aims of the NTI in housing, education, and employment, as well as neighborhood poverty and residential stability.

Another difficult aspect of evaluating CCIs is choosing an appropriate geographic unit of analysis for both treatment and control groups. In some cases, the boundaries of an intervention are unclear. For example, EZs rarely conformed to census or ZIP code geographies (Kolko and Neumark 2010). Sandtown-Winchester does not fall neatly within census tract boundaries. To best approximate the neighborhood, we use census block groups as our unit of analysis. Using block groups provides the closest approximation of the area that falls within the boundaries of the neighborhood.4

As concentrated poverty has reemerged in many cities—despite its decline across the 1990s (Jargowsky 2015; Kneebone, Nadeau, and Berube 2011)—it is vital to consider what we know about past policy responses to neighborhood disadvantage. Examining the neighborhood-wide outcomes of the Sandtown-Winchester NTI helps us to understand what has changed as a result of the investment. It also allows us to describe the challenges that remain in the neighborhood. Any evaluation of Sandtown-Winchester must also take into account the methodological difficulties outlined above. In this article, we employ multiple longitudinal data sources at the neighborhood level and a counterfactual “matching” approach to address some of these long-standing issues. Before discussing our methods and findings, we provide a brief outline of the initiative itself (see also Brown, Butler, and Hamilton 2001; Goetz 1996; Meyer et al. 2000; Edelman 2003; Proscio 2004).
The Sandtown-Winchester NTI

A neighborhood of 72 square blocks just northwest of downtown Baltimore, Sandtown-Winchester was once a thriving part of Baltimore’s middle-class African-American community. The neighborhood saw Billie Holiday sing at the Royal Theatre on Pennsylvania Avenue, Thurgood Marshall graduate from the local high school, and families live on steady paychecks from local employers like Schmidt’s Bakery (Bock 1993). It was also a focal point during Baltimore’s 1968 riots following the assassination of Dr. Martin Luther King Jr., and like much of the city experienced disinvestment and population flight in the subsequent decades. By the 1990s, the bakery had closed, many middle-class families had left, and the glory days of the neighborhood seemed to be in the past.

Yet, the early 1990s were also a hopeful time in Sandtown. In 1990, residents, local government, and private foundations began to work together to devise a plan to bring new opportunities to the neighborhood. Baltimoreans United in Leadership and Development (BUILD), a coalition of faith and community-based organizations, was also involved in the planning process (Meyer et al. 2000). The initial planning process took seven months across 1990 and 1991, and involved neighborhood residents as committee members and volunteers in community outreach (Meyer et al. 2000). A nonprofit, Community Building in Partnership, was incorporated in 1993 to coordinate the NTI. A wide range of issues were identified during the planning process, but housing rehabilitation, school reform, and efforts to increase employment stood out as leading goals for community-wide change.5

Housing rehabilitation and construction has been the most high-profile aspect of the initiative. The initial phase of the NTI created 227 new houses for low-income homeowners in the early 1990s. Former President Jimmy Carter was on hand in 1992 as Habitat for Humanity announced that it would renovate 100 vacant homes in the area, a pledge that was fulfilled in 1998. Almost 600 units of public housing in the neighborhood were modernized in the early 1990s. Funding for further development came in 1997, when Sandtown-Winchester was selected as one of six neighborhoods in the country to receive a $5.2 million federal Homeownership Zone grant from the Department of Housing and Urban Development. This grant attracted another $30 million in public and private funding, and in 2000, The Enterprise Foundation began selling renovated and newly built homes to first-time homebuyers. By 2005, Enterprise’s Sandtown Square development was completed and raised the total number of new and renovated homes in the Homeownership Zone to 236, mostly targeted to low- and moderate-income homebuyers. By the early 2000s, 700 houses and apartments had been built or renovated in the neighborhood (Proscio 2004).
Housing was not the only aspect of the NTI, however. In 1994, the community put into place a “Compact Schools” agreement to increase student achievement through developing curriculum, instruction, and increasing parental involvement in the three elementary schools in the neighborhood—Gilmor Elementary, George C. Kelson Elementary, and William Pinderhughes Elementary. With an annual budget of “over $500,000” (Meyer et al. 2000), the Compact Schools project introduced curricular reform along with teacher training beginning in 1995. Direct Instruction, a teacher-directed curriculum, was introduced in the 1997 and 1998 school years, and a six-week summer program was serving almost one quarter of students by the summer of 1998 (Meyer et al. 2000).

The reforms also attempted to address unemployment in the neighborhood. From its inception, the NTI employed residents in “community improvement jobs,” such as health outreach workers, family and youth counselors, or writers in the community newspaper (Costigan 1996). In 1996, Sandtown Works began job readiness training and placement services to teens and adults in the neighborhood; it would merge with Economic Development Employment Network (EDEN Jobs), a job networking and placement service established though a local church, in 1999. In 1997, a Jobs-Plus program was established with $1 million total in grants from the Rockefeller Foundation, Surdna Foundation, and the U.S. Department of Housing and Urban Development (HUD) to provide employment services to residents of Gilmor Homes, a 571-unit low-rise housing project in the neighborhood (Meyer et al. 2000).

Employment reforms also included job creation efforts. In 1998, Enterprise and St. Vincent de Paul established a nonprofit that trained residents to repair and sell used appliances (Meyer et al. 2000). Sandtown-Winchester was also included in Baltimore’s larger Empowerment Zone (EZ). One of only six such place-based programs in the country, the EZ focused on job training and also job creation, by encouraging businesses to expand or relocate into the zone through financing or tax incentives (Rich and Stoker 2014). Sandtown-Winchester was included within the boundaries of the EZ, although EZ-related activity was overseen by a separate organization from the ones established through the NTI. A recent analysis of Baltimore’s EZ found that there were comparably few loans made to attract businesses to the part of the zone containing Sandtown-Winchester, suggesting that any employment gains in the neighborhood may be more related to the specifics of the NTI (Rich and Stoker 2014).

These overlapping efforts, which incorporated resident input throughout, made the Sandtown-Winchester NTI one of the most well-known and celebrated urban revitalization projects in the country (Goetz 1996; Schorr 1997).
The neighborhood transformation spurred residents, local government, and private developers to act together to overcome what James Rouse referred to as the “great failure in the United States” to recognize the deplorable conditions of inner-city neighborhoods and come together to do something about them (quoted in Sachs 1995; see also Brown, Butler, and Hamilton 2001). Early observers of the neighborhood saw signs of progress in the schools and improving access to jobs (Edelman 2003), but until now, no one has looked at the data on whether these reforms and resources made a difference in the long-term neighborhood quality, school performance, or economic well-being of Sandtown-Winchester and its residents. Twenty years later, what has become of Sandtown-Winchester?

Data and Method

To answer this question, we marshal several data sources on the Sandtown-Winchester neighborhood, spanning the period from 1990 (before any of the reforms took effect) to 2009, almost two decades later. We use these sources to capture the possible effects of the reforms on four central areas of interest: (1) neighborhood poverty, (2) homeownership, (3) education, and (4) employment. Housing, education, and employment stood out in our review as areas the reform efforts intended to improve in the neighborhood. Given the significance of neighborhood population turnover in understanding the impact of place-based programs (cf. Coulton, Theodos, and Turner 2012), we also examine changes in the residential stability of the neighborhood, operationalized as the change in population and the percentage of residents who remain in the same home over a five-year period.

Our data on neighborhood poverty rate, homeownership, residential stability, unemployment, and population come from the 1990 and 2000 censuses, and the 2005–2009 American Community Survey (ACS) five-year estimates. The residential stability measure in the ACS is not directly comparable with the measures from the 1990 and 2000 censuses, so we do not include it in our long-term analysis. All data are collected at the block group level for Baltimore City. Neighborhood-level data from 1990 were normalized into 2000 census geographies using software from SimplyMap and Geolytics (the 2005–2009 ACS also uses 2000 census geographies). We dropped nonresident block groups, such as large parks and industrial areas, from our analysis, resulting in 697 block groups, of which 14 make up Sandtown-Winchester.

Data on school academic performance come from the National School-Level State Assessment Score Database and the Maryland State Department of Education. We use school data from 1994 (the year just before school
reforms were implemented in Sandtown-Winchester) through 2008. The standardized tests used to measure academic performance differed across these years, meaning that they were not directly comparable. To allow comparison within schools across the years of the NTI, we convert measures of school performance each year to Normal Curve Equivalents (NCEs). NCEs are a type of standardized score similar to percentile ranks, but adjusted to an interval scale, with a mean of 50 and a standard deviation of 21.06. Like a percentile rank, the NCE describes the academic performance of the school relative to all other elementary schools in the state. Unlike a percentile rank, the NCE is standardized on an interval (rather than ordinal) scale and so can be averaged and compared from one year to another (Mertler 2002). We calculated the NCE for all elementary schools in Maryland between 1994 and 2008. To maintain our focus on neighborhoods, we spatially joined school data from elementary school catchment (“zone school”) areas for Baltimore City to census block groups using ArcGIS. Each block group in our analysis was matched to the school (or set of schools) whose catchment area it fell within or with which it overlapped.

The central component of our analysis uses propensity score matching to designate a counterfactual, allowing for causal inference about the degree to which the observed changes in Sandtown-Winchester over the period from 1990 to 2009 were a result of the NTI. We use this counterfactual design to identify areas in the city that had a similar probability of selection for the NTI prior to the reforms beginning, but which were not actually chosen for the NTI “treatment,” and then estimate the average treatment effect on the treated block groups (ATT) in terms of our central variables of interest. Below, we explain how we operationalized the criteria used to select Sandtown-Winchester as the site of the NTI.

There were two significant aspects of a neighborhood that Enterprise and its partners looked at when determining a site for the NTI. The first of these was the presence of overlapping social problems. In a newspaper interview, James Rouse explained that “we wanted a place that could be called a ‘bottom’ neighborhood . . . where people were living in the worst possible conditions” (quoted in Gugliotta 1993, p. A1). Kurt Schmoke, the then-mayor of Baltimore who was instrumental in providing government support for the NTI, explained in 1990 that “we have made a real commitment to the Sandtown-Winchester area . . . Every social problem you can imagine could be found in this particular area” (quoted in Simmons 1990). Because the NTI was intended to be a model program, the intention of Enterprise and the City of Baltimore was to address all of the neighborhood’s problems simultaneously—The program modeled an interlocking set of solutions to address the overlapping “conditions of poverty” in the neighborhood (Meyer et al. 2000).
It is clear that poverty was a leading factor in the selection of Sandtown. However, to further specify overlapping social problems for our propensity score analysis, we also use unemployment rate, percentage of female-headed households with children, education level (percentage of the population with a high school degree), and the population change from 1980 to 1990 (a measure of depopulation). These variables capture many of the conditions that mark neighborhood disadvantage in the sociological literature (cf. Ellen and Turner 1997; Sampson 2012; Wilson 1987; Wodtke, Harding, and Elwert 2011). All variables used in the match were from 1990 the period before NTI reforms began. Variable means and descriptions are provided in Table 1.

The second aspect of the neighborhood that made it attractive for the NTI was the potential for housing redevelopment. Early in the planning process, it was decided that one source of funding would come from the federal Nehemiah Housing Program. The Nehemiah program provided housing for low-income households and also subsidized clearance and new construction (Goetz 1996). Housing rehabilitation and new construction were to be a centerpiece of the NTI. A contemporaneous account of the Sandtown initiative (McDougall 1993, p. 138) noted that “because of its large number of multifamily units, abandoned buildings, and vacant lots, Sandtown is ripe for extensive development despite the reluctance of the private sector.” This suggests a number of housing variables for our propensity score model: vacant housing, owner-occupied housing, median home value (a measure of (dis) investment), median rent, multifamily housing, and the percentage of housing units built prior to 1940 (variable means and descriptions are provided in Table 1).11

Our analysis proceeds in three steps. First, we explore how key aspects of the neighborhood (poverty rate, homeownership, residential stability, unemployment rate, and population) have changed within Sandtown-Winchester. We compare these measures at baseline before the relevant reforms had started (1990), at an interim time point (2000) to capture shorter-term impacts, and at a long-term time point (2005–2009).

Our second step compares Sandtown with all other poor areas in Baltimore in 1990.12 We chose 20% poverty rate as a threshold given its general acceptance in the literature as a marker of a poor neighborhood (cf. Crowder and South 2005; Quillian 1999; Timberlake 2007; Wilson 1987). This comparison relies on a t-test of means; while t-tests are usually robust to the assumption of normally distributed variables, nonnormality can be a problem when there is a large difference in the size of the groups being compared. Because this is a concern with this step in our analysis, we also used a Wilcoxon Mann–Whitney rank sum test (a nonparametric form of the t-test) to compare our outcome variables when they were not normally distributed.
### Table 1. Covariates Used in Propensity Score Match.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sandtown-Winchester</th>
<th>Other Baltimore Block Groups</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below Poverty90</td>
<td>$47.42$</td>
<td>$20.72$</td>
<td>Percentage below poverty 1990</td>
</tr>
<tr>
<td>FemHH90</td>
<td>$30.73$</td>
<td>$17.91$</td>
<td>Percentage female-headed households with children 1990</td>
</tr>
<tr>
<td>HS90</td>
<td>$43.90$</td>
<td>$59.75$</td>
<td>Percentage with high school degree 1990</td>
</tr>
<tr>
<td>Unemployed90</td>
<td>$20.53$</td>
<td>$9.80$</td>
<td>Percentage unemployed 1990</td>
</tr>
<tr>
<td>Vacant90</td>
<td>$20.46$</td>
<td>$8.46$</td>
<td>Percentage of all housing units that were vacant 1990</td>
</tr>
<tr>
<td>Ownerocc90</td>
<td>$22.88$</td>
<td>$51.54$</td>
<td>Percentage owner-occupied housing 1990</td>
</tr>
<tr>
<td>Medrent90</td>
<td>$248$</td>
<td>$345$</td>
<td>Median rent 1990 (1989 dollars)</td>
</tr>
<tr>
<td>Pre1940HU</td>
<td>$61.37$</td>
<td>$43.43$</td>
<td>Percentage houses built before 1940 (in 1990)</td>
</tr>
<tr>
<td>Multifam90</td>
<td>$8.77$</td>
<td>$14.95$</td>
<td>Percentage multifamily housing (five or more units in structure) 1990</td>
</tr>
<tr>
<td>$n$</td>
<td>14</td>
<td>683</td>
<td></td>
</tr>
</tbody>
</table>

Source. 1990 Census.

The third step in our analysis uses propensity score matching to identify a set of counterfactual areas based on the selection of covariates outlined above. We use all 697 residential block groups in Baltimore City rather than impose a limiting factor, such as block groups in poor neighborhoods, because we do not want to artificially restrict variation on our matching covariates.13 Propensity score analysis was done using Stata’s TEFECTS PSMATCH14 module for the set of Sandtown-Winchester and all residential block groups. We based this match on the 11 covariates in Table 1 and used a nearest
neighbor match with replacement. To assess the covariate balance between Sandtown-Winchester block groups and our matched block groups, we used the standardized difference (a measure of mean difference as a percentage of the average standard deviation) and percent bias reduction (Oakes and Johnson 2006), and also a t-test of means. All but one standardized difference were below 10, and none of our comparison means were statistically significantly different after matching, suggesting that our match is strong. It also meets the standards of previous propensity score match analyses of place-based programs (e.g., Rich and Stoker 2010; full results are shown in Appendix Table A1).

We next estimated the ATT for our outcome measures, using

\[ \text{ATT} = \frac{\sum Y_{ei} - Y_{w*}}{n_e} = \frac{\sum \Delta_e}{n_e} = \Delta_e, \]

where \( Y_{ei} \) is the outcome for an exposed \((e)\) block group \((i)\), \( Y_{w*} \) is the outcome for the matched (counterfactual substitute) block group, \( n_e \) is the sample size of the pair matches, and \( \Delta_e \) is the pair-matched difference in outcomes. We estimate the ATT for neighborhood indicators at interim (2000) and long-term (2005–2009) time points, and for schools for each year between 1994 and 2008.

Because there are only 14 block groups in Sandtown-Winchester, our sample size for the ATT estimates is small. Small sample sizes can make it less likely that statistical significance tests will show a significant relationship, raising the possibility of falsely concluding the NTI had no impact. Thus, in addition to statistical significance tests, we include a discussion of effect sizes in our interpretation of the impact of the NTI on Sandtown-Winchester. Effect size calculations use the amount of variation in each group to contextualize the difference between them (Coe 2002). They are generally calculated by dividing the difference in means between the two groups by the pooled standard deviations of both groups. We calculate effect sizes and confidence intervals (CIs) for our neighborhood and school outcome comparisons.

**Findings**

In 1990, Sandtown-Winchester was among the poorest neighborhoods in Baltimore, with a poverty rate of 47.4%. This was more than twice as high as the Baltimore City average and almost four times as high as the average neighborhood in the metropolitan area (which includes the city as well as Baltimore, Anne Arundel, Howard, Harford, Carroll, and Queen Anne’s
Table 2. Neighborhood Outcomes in Sandtown-Winchester Over Time.

<table>
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<tr>
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<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Poverty rate (%)</td>
<td>47.4</td>
<td>14.6</td>
<td>35.3</td>
</tr>
<tr>
<td>Homeowners (%)</td>
<td>22.9</td>
<td>12.0</td>
<td>32.9</td>
</tr>
<tr>
<td>Residential stabilitya (%)</td>
<td>54.0</td>
<td>13.1</td>
<td>56.2</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>20.5</td>
<td>5.4</td>
<td>16.0</td>
</tr>
<tr>
<td>Population</td>
<td>12,898</td>
<td></td>
<td>10,748</td>
</tr>
</tbody>
</table>


a. Residential stability is the percentage of households that were in the same home five years earlier in 1990 and 2000. This five-year measure is not available in the 2005–2009 American Community Survey.

Counties). Table 2 shows that less than a quarter (22.9%) of houses in the neighborhood were occupied by homeowners and more than one in five adults in the neighborhood—20.5%—were unable to find work in 1990.

The center and rightmost columns of the table show how the community changed in the two decades following the NTI. There are some notable demographic differences; the poverty rate dropped by 13 percentage points to 34.4% by the end of the 2000s, and the neighborhood saw a substantial increase in the percentage of homeowners. Just over half the neighborhood’s population had lived in their homes for at least five years at the time of both our baseline and interim measures. The unemployment rate in the neighborhood was only slightly lower by the end of the 2000s (19.3%) than it had been almost two decades earlier. The overall population of the neighborhood declined across the study period, which mirrored an overall population decline in Baltimore City.

How did Sandtown-Winchester change relative to other places that were poor in 1990? Table 3 compares mean outcomes for Sandtown and the other poor areas of the city at the interim (2000) and long-term (2005–2009) periods. In addition to time-specific measures, we also calculate the percentage change in each outcome variable for the period since 1990, and show the mean percentage change for the blockgroups that make up Sandtown-Winchester as well as for the other poor blockgroups.

Rebuilding the neighborhood’s housing stock and encouraging low-income homeownership were two of the central components of the NTI. By 2000, the percentage of homeowners in Sandtown lagged behind the average in poor neighborhoods (32.9% compared with 38.3%), but the level of homeownership in the neighborhood had increased at a greater rate than in other poor
Table 3. Comparison of Neighborhood Interim and Long-Term Outcomes.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sandtown-Winchester</th>
<th>Other Poor Neighborhoods</th>
<th>p Value$^a$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td><strong>Interim (2000)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poverty rate (%)</td>
<td>35.3</td>
<td>12.5</td>
<td>34.4</td>
</tr>
<tr>
<td>% change in poverty rate, 1990–2000</td>
<td>−17.7</td>
<td>38.8</td>
<td>−2.1</td>
</tr>
<tr>
<td>Homeowners (%)</td>
<td>32.9</td>
<td>14.5</td>
<td>38.3</td>
</tr>
<tr>
<td>% change in homeownership, 1990–2000</td>
<td>63.9</td>
<td>86.3</td>
<td>42.2</td>
</tr>
<tr>
<td>Residential stability$^b$</td>
<td>56.2</td>
<td>9.7</td>
<td>54.3</td>
</tr>
<tr>
<td>% change in residential stability, 1990–2000</td>
<td>8.4</td>
<td>27.6</td>
<td>0.5</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>16.0</td>
<td>8.3</td>
<td>17.8</td>
</tr>
<tr>
<td>% change in unemployment rate, 1990–2000</td>
<td>−12.9</td>
<td>56.1</td>
<td>62.3</td>
</tr>
<tr>
<td>% change in population, 1990–2000</td>
<td>−18.9</td>
<td>21.2</td>
<td>−20.1</td>
</tr>
<tr>
<td>Poverty rate (%)</td>
<td>34.4</td>
<td>16.4</td>
<td>30.6</td>
</tr>
<tr>
<td>% change in poverty rate since 1990</td>
<td>−20.2</td>
<td>46.2</td>
<td>−12.9</td>
</tr>
<tr>
<td>Homeowners (%)</td>
<td>42.1</td>
<td>23.2</td>
<td>39.7</td>
</tr>
<tr>
<td>% change in homeownership since 1990</td>
<td>134.2</td>
<td>167.3</td>
<td>61.2</td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>19.3</td>
<td>9.9</td>
<td>21.4</td>
</tr>
<tr>
<td>% change in unemployment rate since 1990</td>
<td>4.6</td>
<td>66.6</td>
<td>96.0</td>
</tr>
<tr>
<td>% change in population since 1990</td>
<td>−19.9</td>
<td>37.4</td>
<td>−27.4</td>
</tr>
<tr>
<td><strong>n</strong></td>
<td>14</td>
<td>286</td>
<td></td>
</tr>
</tbody>
</table>


*a.* p Value from a t-test comparing the Sandtown mean with the mean of neighborhoods that were poor in 1990.

*b.* Residential stability is the percentage of households that were in the same home five years earlier. This five-year measure is not available in the 2005–2009 American Community Survey.

neighborhoods in the city (an average increase of 63.9% since 1990, compared with only a 42.1% increase in other poor areas). There were no statistically significant differences in poverty rate, residential stability, or population...
change between Sandtown-Winchester and other poor neighborhoods by 2000. The unemployment rate in 2000 in Sandtown-Winchester was 16%, which was not significantly lower than the average unemployment rate of 17.8% in other poor neighborhoods, although since 1990 the unemployment rate in Sandtown-Winchester declined by an average of 12.9%, while the average unemployment rate increased by 62.3% in the city’s other poor areas.

Table 3 allows us to contextualize the changes profiled in Table 2, by showing that the long-term decrease in poverty rate in Sandtown, from 47.4% in 1990 to 34.4% in 2005–2009, was not significantly different from the change that was taking place in the city’s other poor neighborhoods during this time. A decade and a half after the NTI began, the mean percentage of homeowners in the neighborhood (42.1%) was not statistically different from the mean percentage of homeowners in the city’s other poor neighborhoods (39.7%). However, homeownership in Sandtown had increased by an average of more than 100% across the block groups that make up the neighborhood. The mean unemployment rate in Sandtown in 2005–2009 was 19.3%, which was lower (although not significantly different) than the mean of 21.4% in other poor areas. Further probing of the comparison between Sandtown and other poor neighborhoods using a nonparametric alternative to the t-test (the Wilcoxon Mann–Whitney rank sum test) found significant differences between Sandtown and other poor neighborhoods in the percentage change in both homeownership and unemployment since 1990. The Sandtown block groups were more likely to see a bigger increase in homeownership than the other poor block groups, and they were also more likely to experience a lower percentage change in unemployment.17

Table 3 adds context to our understanding of the changes that took place in Sandtown-Winchester during the 1990s and 2000s, but this comparison does not account for the variation among poor neighborhoods that can still make them different kinds of places from Sandtown. To better understand the degree to which the NTI transformed the Sandtown community, we need a more accurate counterfactual; for this, we turn to our propensity score matching analysis. Table 4 shows ATT estimates, standard errors, significance levels, and CIs for our set of outcome measures. The upper rows show the estimates for the interim (2000) neighborhood measures and percentage change since 1990, and the lower rows show the long-term (2005–2009) neighborhood measures and percentage change since 1990.

The top rows of Table 4 show that neighborhood poverty fell at a more rapid rate in Sandtown than in our matched areas by 2000, although this change is not statistically significant. The NTI effects on the level of homeownership and residential stability were also not statistically significant as of 2000. Our ATT estimate for the unemployment rate suggests that it was 6.5% lower (95% CI = [−12.2, −0.9]) in Sandtown than it would have been without the NTI. Our effect size analysis supports the conclusion that the largest
Table 4. NTI Effects at Interim and Long Term.

<table>
<thead>
<tr>
<th>Variable</th>
<th>ATT</th>
<th>Robust SE</th>
<th>z Score</th>
<th>p Valuea</th>
<th>Lower Limit</th>
<th>Upper Limit</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interim (2000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poverty rate (%)</td>
<td>−9.19</td>
<td>5.83</td>
<td>−1.57</td>
<td>.115</td>
<td>−20.62</td>
<td>2.25</td>
<td></td>
</tr>
<tr>
<td>% change in poverty rate, 1990–2000</td>
<td>−12.79</td>
<td>15.69</td>
<td>−0.81</td>
<td>.415</td>
<td>−43.54</td>
<td>17.96</td>
<td></td>
</tr>
<tr>
<td>Homeowners (%)</td>
<td>−4.47</td>
<td>3.57</td>
<td>−1.25</td>
<td>.210</td>
<td>−11.48</td>
<td>2.53</td>
<td></td>
</tr>
<tr>
<td>% change in homeownership, 1990–2000</td>
<td>30.18</td>
<td>27.35</td>
<td>1.10</td>
<td>.270</td>
<td>−23.43</td>
<td>83.78</td>
<td></td>
</tr>
<tr>
<td>Residential stabilityb</td>
<td>−0.85</td>
<td>5.93</td>
<td>−0.14</td>
<td>.886</td>
<td>−12.49</td>
<td>10.78</td>
<td></td>
</tr>
<tr>
<td>% change in residential stability, 1990–2000</td>
<td>4.12</td>
<td>10.22</td>
<td>0.40</td>
<td>.687</td>
<td>−15.92</td>
<td>24.16</td>
<td></td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>−6.54</td>
<td>2.88</td>
<td>−2.27</td>
<td>.023*</td>
<td>−12.17</td>
<td>−0.90</td>
<td></td>
</tr>
<tr>
<td>% change in unemployment rate, 1990–2000</td>
<td>−27.69</td>
<td>18.65</td>
<td>−1.49</td>
<td>.138</td>
<td>−64.24</td>
<td>8.85</td>
<td></td>
</tr>
<tr>
<td>% change in population, 1990–2000</td>
<td>10.07</td>
<td>7.32</td>
<td>1.38</td>
<td>.169</td>
<td>−4.28</td>
<td>24.42</td>
<td></td>
</tr>
<tr>
<td>Poverty rate (%)</td>
<td>1.04</td>
<td>6.99</td>
<td>0.15</td>
<td>.882</td>
<td>−12.66</td>
<td>14.73</td>
<td></td>
</tr>
<tr>
<td>% change in poverty rate since 1990</td>
<td>3.76</td>
<td>17.39</td>
<td>0.22</td>
<td>.829</td>
<td>−30.32</td>
<td>37.84</td>
<td></td>
</tr>
<tr>
<td>Homeowners (%)</td>
<td>12.49</td>
<td>9.14</td>
<td>1.37</td>
<td>.172</td>
<td>−5.43</td>
<td>30.41</td>
<td></td>
</tr>
<tr>
<td>% change in homeownership since 1990</td>
<td>131.06</td>
<td>49.41</td>
<td>2.65</td>
<td>.008***</td>
<td>34.22</td>
<td>227.90</td>
<td></td>
</tr>
<tr>
<td>Unemployment rate (%)</td>
<td>−7.72</td>
<td>3.47</td>
<td>−2.22</td>
<td>.026*</td>
<td>−14.53</td>
<td>−0.91</td>
<td></td>
</tr>
<tr>
<td>% change in unemployment rate since 1990</td>
<td>−32.45</td>
<td>22.57</td>
<td>−1.44</td>
<td>.150</td>
<td>−76.68</td>
<td>11.78</td>
<td></td>
</tr>
<tr>
<td>% change in population since 1990</td>
<td>21.09</td>
<td>13.28</td>
<td>1.59</td>
<td>.112</td>
<td>−4.93</td>
<td>47.12</td>
<td></td>
</tr>
<tr>
<td>n = 14 matched pairs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Note. NTI = Neighborhood Transformation Initiative; ATT = average treatment effect on the treated.
a. The p value of ATT estimates comparing Sandtown block groups with matched pairs.
b. Residential stability is the percentage of households that were in the same home five years earlier. This five-year measure is not available in the 2005–2009 American Community Survey. *p < .05. **p < .01.
interim impact of the NTI was on lowering the unemployment rate in Sandtown \( (d = -0.87, 95\% \text{ CI} = [-1.73, 0.002]). \)

In the long-term, the NTI had no impact on neighborhood poverty. Both the poverty rate in the late 2000s and the rate of change of the poverty rate over the full period of the NTI were not very different from the counterfactual, and Table 4 shows that these differences were not statistically significant. However, we do see an overall positive effect on homeownership in the neighborhood by the end of the 2000s. The lower rows of Table 4 show a significantly higher rate of increase in homeownership between 1990 and 2005–2009, to levels that were an estimated 12.5\% higher \( (95\% \text{ CI} = [-5.4, 30.4]) \) in Sandtown than in our counterfactual by the latter half of the 2000s. The finding of a statistically significant difference in the long-term but not interim period may be due to the continuation of housing development in Sandtown-Winchester into the 2000s, notably the completion of Sandtown Square in 2005. The NTI also had a long-term effect on the unemployment rate, which was an average of 7.7\% \( (95\% \text{ CI} = [-14.5, -0.9]) \) lower than the counterfactual by the end of the 2000s. Effect sizes for the long-term outcomes were mostly in the small to medium range, although the effect size analysis concurs with the results in Table 4, that Sandtown experienced a large increase in homeownership \( (\text{change in homeownership } d = 1.06, 95\% \text{ CI} = [0.38, 1.74]) \) and a lower long-term unemployment rate \( (\text{unemployment rate } d = -0.87, 95\% \text{ CI} = [-1.73, -0.004]) \).

Figures 1 and 2 show mean NCEs for Sandtown-Winchester schools (solid line) and ATT estimates based on the schools serving the matched block groups (dashed line), across the 1990s and 2000s. Focusing just on Sandtown, we can see that there is annual fluctuation in reading (Figure 1) and math (Figure 2) performance in the years following the signing of the compact schools agreement in 1994. Curricular reforms were introduced over the following three years, with the new curriculum introduced in two schools in 1997 and the third in 1998 (Brown, Butler, and Hamilton 2001). The figures show a marked rise in academic performance in 1999, which appears to have been more sustained in math (Figure 2) than in reading (Figure 1). However, by the last years of our analysis, academic performance in both math and reading had declined to levels below an NCE of 15, or more than one and a half standard deviations below the statewide mean.

We also compare NCE position in Sandtown schools with the ATT estimates based on schools serving the matched counterfactual neighborhoods. The dashed line in Figures 1 and 2 shows this comparison for each year. The analysis shows that the Sandtown schools generally had lower NCEs on reading and math tests than the counterfactual estimate. In most years, the average treatment effect was negative, and we found statistically significant negative effects in reading in 1994, 2001, 2004, and 2006–2007, and in math in 1996–1999, 2001, and 2006. These findings suggest that the Sandtown
elementary schools performed worse on standardized tests in some years than they might otherwise have in the absence of the NTI. All effect sizes calculations except for reading in 1999 are negative, supporting our conclusion of an average negative treatment effect for reading and math.  

Conclusion

More than twenty years ago, reformers set ambitious goals to improve the lives of residents in Sandtown-Winchester. Research since then has continued to find strong relationships between unemployment, high-poverty rates, and racial segregation in American cities; these have proven tenacious in the face of changing economic and policy contexts (Massey and Denton 1993; Sampson 2012; Sharkey 2013; Wilson 1987). Today, with high rates of unemployment and neighborhood poverty and poorly performing schools, Sandtown-Winchester is no exception. Yet, a closer look at changes in education, employment, and housing provides insight into the accomplishments and remaining challenges associated with the NTI, as well as suggestions for future programs and evaluations.
Education reforms had the weakest overall impact. Figures 1 and 2 suggest a high point for the reforms in 1999 in reading and 2000 in math, when new curriculum and summer school programs were in effect across all three schools. Yet, this improvement was short lived, as the three “compact” elementary schools slipped further behind our counterfactual estimates as the decade passed. These findings warrant a more in-depth look at the challenges of sustaining school reforms in Sandtown-Winchester than is possible here, although we speculate that the rise of alternative and charter school enrollment options in Baltimore may have contributed to the decline in test score performance among the three compact schools by attracting away more academically gifted students.

The overall level of unemployment in the neighborhood did not decrease much between 1990 and 2005–2009, although it is important to acknowledge the likely negative impact of the economic downturn of the late 2000s on the neighborhood’s long-term employment rate. Our propensity score analysis shows that Sandtown’s unemployment rate was significantly lower than the counterfactual estimate (Table 4), suggesting that the NTI helped to prevent even more widespread joblessness in the neighborhood. The job readiness and job creation programs appear to have had some impact on the overall level of employment in the neighborhood, even in the long term.

Figure 2. Mean NCE in math for Sandtown-Winchester schools and counterfactual estimate, 1994–2008.

Source. National School-Level State Assessment Score Database and the Maryland State Department of Education.

Note. NCE = Normal Curve Equivalent.
The strongest positive impact we find, in terms of both percentage increase (Tables 2 and 3) and statistical significance vis-à-vis the counterfactual (Table 4) is in homeownership. The overall percentage of homeowners in the neighborhood almost doubled from 22.9% in 1990 to 42.1% at the end of the 2000s, and Table 4 shows that this percentage increase was significantly higher than it might have been in the absence of the NTI. However, this increase in homeownership did not translate into significantly greater residential stability in Sandtown-Winchester. We found that the level of residential stability in Sandtown was not appreciably different from that in the city’s other poor neighborhoods (Table 3), nor was it significantly higher according to our ATT estimate (Table 4).

What does this mean for families in the neighborhood? On one hand, homeownership brings the potential for generating wealth and is especially significant given the history of redlining and lending discrimination that has stripped wealth from African-American communities like those in Baltimore. Homeownership is generally associated with higher resident satisfaction, and the greater residential stability it can contribute can spur increasing home values and commercial investment, as well as increase collective efficacy (Laprade and Auspos 2006; Rohe and Stewart 1996; Sampson, Raudenbush, and Earls 1997). However, homeownership can also pose a problem for individual low-income families if the rest of the neighborhood does not experience sustained improvement, by anchoring them to communities with below-average schools, which is exactly what happened in Sandtown. To the extent that high levels of unemployment or poverty in the neighborhood can detract from housing values or foster other social problems, homeownership is a high-risk strategy for low-income families (Shlay 2006). In analyses not shown (DeLuca and Rosenblatt 2013), we found that the neighborhood as a whole experienced plummeting home values and a high level of foreclosures following the subprime mortgage crisis in the mid-2000s, as well as an overall increase in vacant housing across the 2000s, which further underscores the risk of a CCI strategy that invests so heavily in homeownership.

It is important to note that although significant investments in Sandtown seem to have yielded less than what was hoped for, it would be premature to conclude that programs with elements like the NTI could not succeed under other conditions. There are at least two other factors worth mentioning: the drug trade and the lack of jobs for noncollege educated residents. In the period during and following the NTI, Sandtown was plagued by active drug markets and the violent crime that comes with them. Baltimore’s economy did not become more hospitable for workers with less than a college degree, making it difficult for any of the residents to secure long-term employment with livable wages (Alexander, Entwisle, and Olson 2014; Cherlin 2014).

The recent events surrounding the death of Freddie Gray also make clear that the criminal justice system was heavily involved in the neighborhood.
During the late 1990s and through the present, tough-on-crime legislation and police practices resulted in Sandtown-Winchester becoming the neighborhood with the highest number of incarcerated residents in the state. The instability that comes with a population in and out of prison likely hampered some of the gains Sandtown might have seen in the years following the NTI.

The Sandtown-Winchester NTI grew from a bold claim about the ability of developers and local government to change very poor neighborhoods in ways that would benefit residents. As concentrated poverty continues to be durable across cities and over time (Jargowsky 2015; Kneebone, Nadeau, and Berube 2011; Sampson 2012), it is important to evaluate the effects of this undertaking—but so doing presents many methodological challenges. We address some of these challenges with a counterfactual framework that helps separate the impact of program-specific initiatives from what might have happened in the absence of the program.

However, we are limited in our ability to assess whether the initiative helped individuals who participated in certain aspects of the program—like the various jobs programs—compared with those who did not. There are no data available on individual-level participation for any aspect of the initiative. Other than the housing renovations and construction, we do not know exactly how the funding of any other aspects of the NTI was spent, making it difficult to know whether there were more effective practices or procedures that could have taken their place. Using rigorous evaluation standards and collecting implementation data can help us understand which aspects of community development work, which ones do not, and why.

Future research should also seek to understand how policy intersects with the dynamics of daily life for low-income families. Poor families face myriad challenges, from mental and physical health concerns (cf. Theodos et al. 2012), family and kin networks that provide social support as well as present challenges, and exposure to trauma and violence (Sharkey 2010)—all of which influence the way low-income families respond to policy opportunities (DeLuca and Rosenblatt 2010). Research that sheds light on how low-income families comply with policies is as important as understanding outcomes (Darrah and DeLuca 2013; Edin, DeLuca, and Owens 2012).

The findings here point to the difficulties of overcoming the overlapping disadvantages that accrue in poor and segregated neighborhoods, even with ample resources and in full partnership with community members. In order to develop policies to preserve inner-city communities and increase the scope of benefits for the families living in them, we need future research to detail how community development programs are implemented, how families react to them, and how programs are shaped by the ongoing economic and political processes that constantly shape the urban landscape.
# Appendix

## Table A1. Covariate Balance for Baseline Covariates Used in Propensity Score Match.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sandtown-Winchester</th>
<th>Matched Block Groups</th>
<th>Standardized Difference ($d^a$)</th>
<th>% Bias Reduction $^b$</th>
<th>t $^c$</th>
<th>p Value $^c$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Popchange80–90</td>
<td>$-7.77$</td>
<td>$-5.26$</td>
<td>$-5.74$</td>
<td>0.43</td>
<td>0.318</td>
<td>.75</td>
</tr>
<tr>
<td>Below poverty 90</td>
<td>47.42</td>
<td>45.46</td>
<td>5.36</td>
<td>0.92</td>
<td>−0.347</td>
<td>.73</td>
</tr>
<tr>
<td>FemHH90</td>
<td>30.73</td>
<td>31.44</td>
<td>−3.35</td>
<td>0.93</td>
<td>0.386</td>
<td>.70</td>
</tr>
<tr>
<td>HS90</td>
<td>43.90</td>
<td>42.62</td>
<td>4.42</td>
<td>0.90</td>
<td>−0.372</td>
<td>.71</td>
</tr>
<tr>
<td>Unemployed90</td>
<td>20.53</td>
<td>21.47</td>
<td>−3.64</td>
<td>0.91</td>
<td>0.346</td>
<td>.73</td>
</tr>
<tr>
<td>Vacant90</td>
<td>20.46</td>
<td>18.69</td>
<td>5.43</td>
<td>0.87</td>
<td>−0.406</td>
<td>.69</td>
</tr>
<tr>
<td>Ownerocc90</td>
<td>22.88</td>
<td>27.57</td>
<td>−14.88</td>
<td>0.78</td>
<td>1.077</td>
<td>.29</td>
</tr>
<tr>
<td>Medhomeval90(ln)</td>
<td>9.93</td>
<td>9.91</td>
<td>5.43</td>
<td>0.97</td>
<td>−0.331</td>
<td>.74</td>
</tr>
<tr>
<td>Medrent90</td>
<td>248</td>
<td>258.70</td>
<td>−2.14</td>
<td>0.83</td>
<td>1.033</td>
<td>.31</td>
</tr>
<tr>
<td>Pre1940HU</td>
<td>61.37</td>
<td>63.91</td>
<td>−7.87</td>
<td>0.81</td>
<td>0.592</td>
<td>.56</td>
</tr>
<tr>
<td>Multifam90</td>
<td>8.77</td>
<td>6.42</td>
<td>8.22</td>
<td>0.48</td>
<td>−0.682</td>
<td>.50</td>
</tr>
<tr>
<td>n</td>
<td>14</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source. 1990 Census.

---

$^a$ The standardized difference is the mean difference between the Sandtown-Winchester and matched block group covariates as a percentage of the average standard deviation. It is given by the formula $100(\bar{x}_SW - \bar{x}_C) / \sqrt{\left(\frac{V_{SW}}{n_{SW}} + \frac{V_C}{n_C}\right)}$ where $\bar{x}_SW$ is the sample mean for the Sandtown-Winchester covariates, $\bar{x}_C$ is the sample mean for the matched counterfactual block groups, and $V_{SW}$ and $V_C$ are the corresponding variances.

$^b$ The percent bias reduction is the reduction in standardized differences before and after matching.

$^c$ The t-test and p values of mean comparison between Sandtown-Winchester and matched block groups.
Acknowledgments

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Declaration of Conflicting Interests

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Notes

1. In September 1996, The Baltimore Sun reported “$100 million spent or earmarked for housing alone,” (Baltimore Sun, 1996, p. 20A) and later expenses included an additional $30 million on Enterprise’s Sandtown Square development in the neighborhood. By way of comparison, Baltimore was granted $128 million through the Housing Opportunities for People Everywhere (HOPE VI) program in the 1990s to demolish more than 3,200 units of public housing and rebuild mixed-income communities in five city neighborhoods, and $100 million as one of the original Empowerment Zone (EZ) cities.

2. For example, a number of news stories have profiled Sandtown-Winchester in the aftermath of Baltimore’s unrest, including some who mention the Neighborhood Transformation Initiative (Anderson 2015; Shane, Stewart, and Nixon 2015; Wenger 2015).

3. For a related approach, see Monti and colleagues (Goodman and Monti 1999; Monti and Burgoff 2012), who leverage the demographic change in a set of “control” tracts adjacent to redeveloped neighborhoods in St. Louis to understand spillover impacts from neighborhood change.

4. To determine the closest match, we used a map of the neighborhood published in Brown, Butler, and Hamilton’s (2001) overview of the NTI, and overlaid census tract and block group boundaries from the 2000 Census. Although block groups provide a better approximation of the neighborhood than census tracts, some block groups do extend beyond the official neighborhood boundaries.

5. The importance of increasing community capacity was widely recognized, and resources were also devoted to improving health care for members of the community (Meyer et al. 2000). Data are not available to directly measure
these outcomes in the manner we use in this article, although see DeLuca and Rosenblatt (2013) for a discussion of health in Sandtown-Winchester.

6. The 1990 and 2000 census reports the percentage of the population in the same home five years earlier, whereas the 2005–2009 American Community Survey (ACS) reports residence in the same home one year earlier. In analyses not shown, we compared this ACS measure of residential stability in Sandtown with other poor neighborhoods and as an outcome in our propensity score analysis, and found no significant differences.

7. In additional analyses not shown, we ran our propensity score match with census tracts as the unit of analysis. Census tracts are more regularly used as a substitute for “neighborhoods” in the literature, although the Sandtown-Winchester community is actually comprised of parts of six census tracts. The census tract model had a weaker covariate balance between the Sandtown-Winchester tracts and the matched counterfactual tracts on the baseline covariates than the block group model did, and using block groups also allowed us to better specify the actual physical boundaries of the Sandtown-Winchester community. For these reasons, we used block groups as our unit of analysis in the article.

8. The year 2008 was chosen because it was a good match with our ACS data and also because it was the last year for which we had data prior to one of the Sandtown-Winchester elementary schools closing.

9. In 2003, school assessment switched from the Maryland School Performance Assessment Program (MSPAP), which was given to third and fifth graders, to the Maryland School Assessment (MSA) in compliance with the federal No Child Left Behind act. The MSA was a different test with a different standard to measure performance, which meant that raw achievement scores on exams given in years prior to 2003 are in a different metric than those given in 2003 and after.

10. School catchment areas are larger than block groups. If a block group fell entirely within a catchment area, that block group was assigned the attributes of that school. If a block group intersected with two or more school catchment areas, it was given the average characteristics of those schools.

11. There is no indication that neighborhood racial composition played a direct role in the selection of Sandtown-Winchester as the site of the NTI. Yet given the centrality of racial residential segregation in reproducing urban inequality (e.g., Sharkey 2013), it is not surprising that the block groups which form that basis of our match were part of Baltimore’s segregated inner city. The 10 block groups that form the basis of our match (see Appendix Table A1) were 89% African-American on average in 1990 (SD = 18.1), compared with 99% (SD = 5.4) African-American in the Sandtown block groups. As a further check, we ran our propensity score match analysis with percentage African-American as one of our baseline covariates. We found similar results to those reported here in terms of the effect of the NTI on homeownership, residential stability, education, and long-term poverty rate. Our propensity score match analysis with racial composition as a baseline covariate showed no effect of the NTI on neighborhood unemployment.
Some of these poor areas were included in Baltimore’s EZ, while others were not. In analyses not shown, we compared Sandtown-Winchester with other block groups that were within the boundaries of the EZ, and separately to block groups that were high poverty but not included in the EZ, on the same set of outcomes. Although mean differences were not statistically significant in any of these comparisons, our Wilcoxon Mann–Whitney rank sum comparison showed that there was a statistically significant difference between the distributions of the change in unemployment since 1990 at both interim and long term, with Sandtown block groups having a lower rank sum than both EZ and non-EZ block groups.

We do limit our analysis to Baltimore City because the NTI was developed in partnership with Baltimore City officials and had no regional components.

This command updates the prior PSMATCH2 module when calculating standard errors to account for the fact that propensity scores are estimated (Abadie and Imbens 2012).

We are limited in our ability to improve statistical conclusion validity by the fixed size of Sandtown-Winchester, our “treatment” group. One response to this is to increase the size of the “control” group by increasing the number of nearest neighbors in our match. We elect not to do this, as it results in a trade-off between greater precision (lower variance) for our estimates and increased bias, as our match is not as precise (Caliendo and Kopeinig 2005).

The general formula for effect size is

\[
\text{Effect Size} = \frac{(\text{Mean of Experimental Group}) - (\text{Mean of Control Group})}{\text{Pooled Standard Deviation}}.
\]

We use Stata’s esize command to calculate Cohen’s d (which uses a pooled [control and experimental groups] standard deviation in the denominator), and compare it with Hedges’s g (which corrects for a bias that may give a slightly larger value for the pooled standard deviation) (Huber 2013). Confidence intervals (CIs) around these values are used to gauge the range of the “true” effect size (see Coe 2002); if a CI crosses zero, we cannot conclude that the observed effect is statistically significant.

We found that that there was a statistically significant difference between the distributions of the Sandtown block groups and the other poor neighborhood block groups in the change in homeownership since 1990 at both the interim \( z = 2.102, p < .05 \) and long-term \( z = 2.117, p < .05 \) time points, with Sandtown block groups having a higher rank sum in both time periods. We also found that there was a statistically significant difference between the distributions of the Sandtown block groups and the other poor neighborhood block groups in the change in unemployment since 1990 at both the interim \( z = 2.447, p < .05 \) and long-term \( z = 2.457, p < .05 \) time periods, with Sandtown block groups having a lower rank sum in both time periods.

Cohen (1969) provided a heuristic for interpreting effect size, with 0.2 being small, 0.5 being medium, and 0.8 being large, although some critics suggested this is best applied in relation to similar interventions (Glass et al. 1981). In all, 11 of our 16 interim and long-term neighborhood measures had an effect size of
less than 0.6. This is similar to the findings of Rich and Stoker (2014) in their evaluation of effect sizes comparing EZs with control census tracts. Full effect size calculations are available from authors.

19. Although the average treatment effect on the treated (ATT) shows the average effect estimate of the percentage of homeowners to be not significantly different from zero within a standard CI, the percentage change estimate is statistically significant; on average, homeownership increased at a significantly higher rate between 1990 and 2005–2009 in Sandtown-Winchester than in our counterfactual ($p$ value = .008).

20. Effect sizes in reading fluctuate from small in 1999 ($d = 0.05$, 95% CI = [−0.79, 0.89]) to large in 2001 ($d = −1.09$, 95% CI = [−1.89, −0.29]) and 2004 ($d = −1.33$, 95% CI = [−2.06, −0.60]) and are generally large, negative, and statistically significant by the end of the analysis period. There is less fluctuation among effect sizes in math, which are small to medium (and not statistically significant, except for 2001, $d = −0.20$, 95% CI = [−1.87, −0.54]) from 2000 through 2005, before becoming large, negative, and statistically significant in 2006 and 2007.

21. For instance, a fourth public school, New Song Academy, opened in Sandtown during the period of our analysis. This school was not part of the original “compact schools” agreement. Applying the same Normal Curve Equivalent (NCE) measures in reading and math indicates that the school outperformed the average of the other Sandtown schools in reading after 2004, although math performance was less consistent and lagged behind the counterfactual estimate.

22. In analyses not shown, we included the 2005–2009 ACS one-year residential stability measure in our $t$-test and propensity score matching analyses (Tables 3 and 4) and found no statistically significant differences.

23. The cited analysis is based on median home values and incidence of foreclosures in the Sandtown neighborhood as a whole and is not able to distinguish whether or not the individual homes produced through the NTI were more or less likely to retain their value or avoid foreclosure.

24. There are also elements of the NTI that might be better measured with alternative assessments. For instance, a goal of many comprehensive community initiatives is to increase community capacity, or the resources, leadership potential, and networks among community members (or between residents and external entities) that enable them to engage in collective action and neighborhood advocacy (Chaskin 2001). This aspect of neighborhood transformation can help ensure the well-being of the neighborhood over time and is likely connected to the changes in the economic, physical, and educational context that we describe here, but we do not measure it directly.

25. Sandtown’s violent crime rate was higher than the citywide average across the 2000s, and its homicide rate was more than twice the city average in 2008 and 2011 (DeLuca and Rosenblatt 2013; see also Shane, Stewart, and Nixon 2015).

References


Baltimore Sun. 1996. “Strengthening Sandtown- New Director: Change occurs at critical time for West Baltimore revival Neighborhood.” September 6, p. 20A.


Costigan, Pat. 1996. Letters. The Baltimore Sun, February 27, p. 12A.

Coulton, Claudia J. 2010. “Response Essay.” In Voices from the Field III: Lessons and Challenges from Two Decades of Community Change Efforts, edited by


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