The Greater Boston Housing Report Card 2019

Supply, Demand and the Challenge of Local Control

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The Relationship between Housing Production and Segregation

This chapter chapter examines trends in racial segregation across communities in Greater Boston using several different metrics and compares the region to similar metropolitan areas. We then explore the consequences of racial segregation in limiting opportunities for traditionally underrepresented populations in terms of income, job opportunities, school quality, and environmental health. Finally, we investigate the link between housing production and racial segregation over time at the municipal level.

While it may be difficult to conclude that these links are causal given the data that is currently available, our goal is to highlight how changes in production are correlated with racial segregation across the Greater Boston region. We hope that our analysis will serve to stimulate a policy discussion about the achievement of broad regional social goals, such as reducing the level of racial segregation, within the context of local zoning control.

Context: The Origins and Legacy of Racial Segregation in Greater Boston

Massachusetts, like many places throughout the United States, has a long history of overt segregation in housing policies (such as "redlining"), as well as less deliberate drivers of structural inequality that have led to high levels of racial, ethnic, and economic segregation between neighborhoods and between urban areas and more affluent suburban communities. Housing policies like exclusionary zoning, discriminatory mortgage lending, and other practices in use as recently as the early 2000s disproportionately disadvantaged black and Latino communities and homeowners. While these and other discriminatory policies are illegal today, they firmly established segregated and often isolated communities based on class and color throughout Greater Boston—and residential patterns that have proven hard to overcome.

History of Segregation

In pre–civil rights era Massachusetts, many housing policies directly and indirectly prohibited residents of color (as well as immigrant or religious minority groups) from purchasing homes or land in majority-white communities. Both federal and local laws during this time effectively limited the upward mobility of non-white families. Redlining, the practice of denying homeownership loans and investment in areas deemed to be high risk (often non-white and poor communities), exacerbated the decline of those areas by withholding capital and discouraging families who otherwise might have been able to purchase homes from moving or staying there. This hastened both racial segregation and urban decay, and drastically curtailed the ability of minority families to accumulate generational wealth.

Throughout the 1950s and 1960s white homeowners across the United States left inner cities for the suburbs, spurring massive public and private investment in outer city limits. Policies by the Federal Housing Administration (FHA) at the time subsidized the development of suburban communities, but restricted the sale or re-sale of homes to black people. "White flight" hardened racial boundaries that were established in the pre–civil rights era, and negatively affected investment in infrastructure, transportation, and public schools in inner cities. While racially homogenous micro cities quickly grew in suburban areas, conditions in black and Latino inner-city neighborhoods experienced low investment, high crime, and increased policing. Greater Boston was not spared from the limited quality housing conditions that followed the exodus of white residents from inner-city America.

Since 1990, the country has inched toward improvements in residential integration; however, high levels of segregation between white and non-white racial groups remain in a number of metropolitan areas, including Greater Boston. According to Brookings Institute researcher William Frey's 2018 article "Black-White Segregation Edges Downward Since 2000, Census Shows," segregation between black and white groups in the Boston metro area dropped slightly between 1990 and 2017. Yet Boston still ranks 15th in terms of segregation among the 51 large metro areas with significant black populations.

Conditions Today

Today, Massachusetts and Greater Boston are perhaps more racially diverse and integrated than ever before. For example, a recent Boston Indicators study released by the Boston Foundation reveals that increases in the foreign-born population in Greater Boston over the last 30 years have fundamentally shifted the racial and ethnic makeup of the region.[1] While diverse at the regional level, at the municipal level we find remnants of the limited investment observed throughout the 1950s and 1960s. Boston, home to most of Massachusetts' black and Latino residents, is a majority-minority city where significant segregation persists both between urban neighborhoods and between the urban core and some of the more affluent suburban communities surrounding the city.

Although discriminatory practices are no longer a matter of law, few concrete actions have been taken to reverse the legacy of discriminatory federal, state, and municipal policies of the mid-to-late 20th century. Moreover, contemporary policies may promote segregation implicitly and create additional barriers to opportunity. Perhaps the most glaring example of implicit discrimination in the 21st century played out in the early 2000s, when mortgage lenders targeted neighborhoods of color for subprime, high-interest loans, even in cases where individuals would qualify for a conventional loan. When the housing bubble burst at the start of the Great Recession, black and Latino homeowners experienced foreclosure at rates much higher than white homeowners did. Black and Latino families were priced out of their communities and, as a group, experienced significant losses in net wealth.

Across the United States since the Great Recession, inner-city areas formerly occupied by non-white residents have undergone gentrification. In Greater Boston, gentrification has created pockets of heavy public and private investment in selected urban neighborhoods. This investment has raised values in some areas of the city that have traditionally been enclaves for black and Latino residents, making those areas unaffordable for former residents. Individuals priced out of their homes are opting to live in more affordable locations further removed from quality transportation, jobs, and other amenities.

Zoning (Home Rule, Chapter 40B, Chapter 40R)

More affluent communities in Greater Boston have zoning ordinances that effectively prohibit dense development. They often exclude the development of multifamily housing projects, and because of the connection between class and race, perpetuate current patterns of racial and income segregation.

In 1966, Massachusetts approved "home rule," which allows municipalities to determine their own zoning and housing policy. While providing municipal governments with the flexibility to meet unique housing needs within their own community, home rule does not provide an avenue for desegregating Greater Boston. Within the current home-rule setting, the Commonwealth is somewhat limited in the interventions it can take to mitigate segregation, thus allowing primarily white communities to remain as such. The State could consider changes to the home-rule policy to better deal with broader regional and statewide housing needs. Such an attempt could help to limit elements of racial and income segregation that are codified through municipal level policy.

In Massachusetts, we have seen some positive steps toward residential integration through state level housing policy, namely the development of Chapter 40B and Chapter 40R regulations. Chapter 40B is an affordable housing law that stipulates that every Massachusetts community maintain at least 10 percent of its housing stock as affordable (reserved for families earning no more than 80 percent of the area's median income). Chapter 40R encourages communities to create "smart growth" zoning districts and dense residential zoning districts located near public transportation stations or within walking distance of town centers. These two residential zoning laws serve to reverse damage caused by discriminatory federal and local housing policies that previously excluded black and Latino residents from homeownership in desirable communities.

Patterns of Segregation in Boston

Greater Boston has a long history of racial segregation. In this section we measure current levels of segregation in the Greater Boston region and compare this to similar metropolitan areas to determine how we compare with our peers. We find that racial segregation is still a serious, chronic issue in Greater Boston as well as many of its comparison cities. We also evaluate changes in segregation over time in Greater Boston to determine the amount of progress, if any, that the region has observed over the past several decades. Here we find a small, incremental decline in racial segregation within the region, but the level of racial segregation in the region remains persistently high.

Who lives where in Greater Boston?

Despite its largely white, European origins, both domestic and international migration have changed the racial and ethnic composition of Greater Boston over the past several generations. First, in the Great Migration, blacks from the south moved in large numbers to industrial cities in the Northeast, including Boston. More recently, after passage of the 1965 Immigration Reform Act, immigrant countries of origin shifted from Europe to Latin American and Asia. As a result, Latin American immigrants, led by large numbers coming from the Dominican Republic, have been the fastest growing foreign-born population, roughly doubling in size over a few decades. Table 3.1 shows that nine municipalities in the Greater Boston area are now majority-minority, with more than 50 percent of their population identifying as non-white in 2017 (and none having fit that description less than 30 years ago). These include Boston, Brockton, Chelsea, Everett, Lawrence, Lynn, Lowell, Malden, and Randolph.

TABLE 3.1

Greater Boston Municipalities Where People of Color Constitute the Majority

City/Town	1990		2017	
	Total Population	Percent People of Color	Total Population	Percent People of Color
Lawrence	70,207	45.3%	79,497	84.5%
Chelsea	28,710	41.0%	39,272	78.1%
Randolph	30,093	15.6%	33,704	63.8%
Brockton	92,788	22.5%	95,161	63.4%
Lynn	81,245	19.8%	93,069	62.1%
Boston	574,283	41.0%	669,158	55.1%
Everett	35,701	8.8%	45,212	54.1%
Malden	53,884	12.1%	61,212	53.4%
Lowell	103,439	23.5%	110,964	50.9%

Source: U.S. Census Bureau, Decennial Census, 1990 & American Community Survey, 5-Year Estimates, 2012–2017

Yet, there are large disparities in where people of color live across the Greater Boston region. Map 3.1 shows that although the region has diversified over time, people of color are still concentrated in a few areas.

Greater Boston has a long history of racial segregation. In this section we measure current levels of segregation in the Greater Boston region and compare this to similar metropolitan areas to determine how we compare with our peers. We find that racial segregation is still a serious, chronic issue in Greater Boston as well as many of its comparison cities. We also evaluate changes in segregation over time in Greater Boston to determine the amount of progress, if any, that the region has observed over the past several decades. Here we find a small, incremental decline in racial segregation within the region, but the level of racial segregation in the region remains persistently high.

While the region has become more racially diverse over the last several decades, the concentration of minority populations in a handful of municipalities means that some whites still have limited interactions with racial and ethnic minorities. As a result, there is limited opportunity for interaction in the community setting among people of different races or ethnic background. For example, most school systems in the Greater Boston area operate on a local level, students largely reflect the racial and ethnic composition of the city or town, even with busing from Boston through METCO. While adults may have more opportunities to engage with people of different backgrounds, colors, and cultures at work, they have few opportunities to do so in their neighborhoods where they are likely to spend most of their time.

MAP 3.1

Percent People of Color by Municipality for Greater Boston
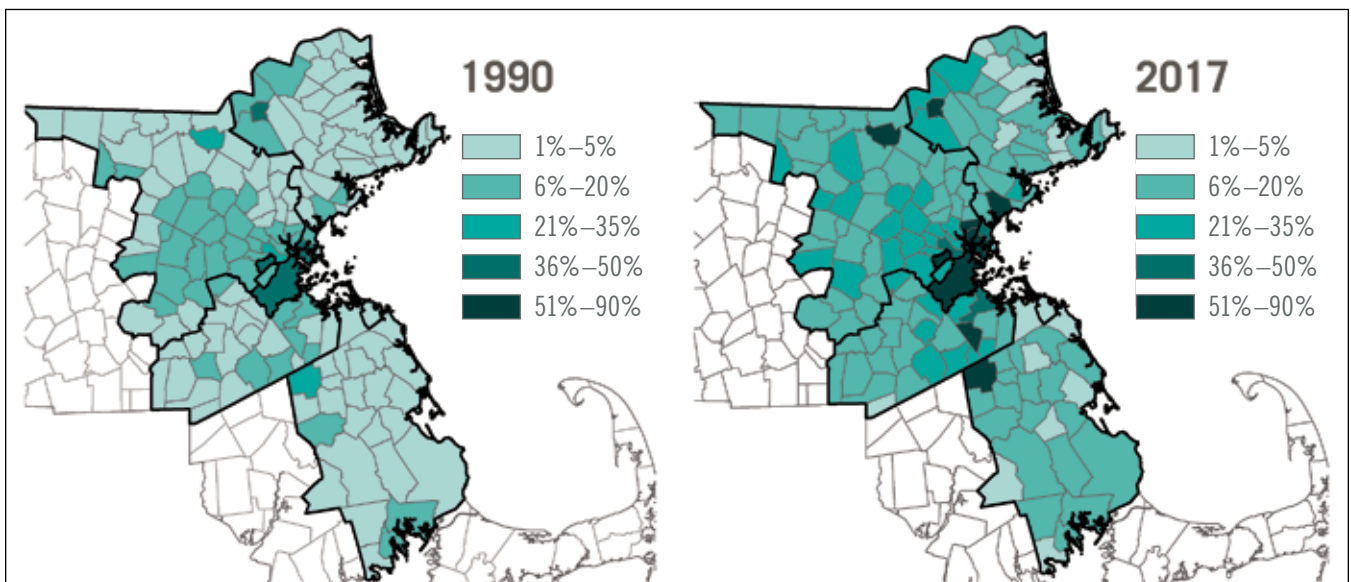
Source: 1990 Decennial Census, 2013–2017 ACS 5-year estimates

How racially segregated is Boston compared with other cities?

Previous research shows that the Boston metropolitan region suffers from a persistently high level of racial segregation. For example, a recent study of segregation trends across 52 U.S. metropolitan areas between 1970 and 2010 finds that Boston is consistently among the set of hypersegregated cities for black residents—meaning that blacks were highly segregated on at least four of the five dimensions of population distribution (evenness, exposure, clustering, centralization, and concentration) used by the U.S. Census Bureau to measure racial and ethnic segregation within a given area (Massey and Tannen, 2015).[2]

In this section, we make use of a subset of these measures to assess the degree of segregation in Greater Boston for three historically underrepresented populations: Asians, blacks, and Latinos. We bring together a variety of data available from the decennial census and the American Community Survey at the census tract level. We also make use of existing measures constructed by other researchers to be able to make comparisons with other metropolitan areas over time. Please see the technical appendix online (https://www.tbf.org/GBHRC-2019-appendix) for a detailed description of each of these measures and how to interpret them.

The first measure we examine is the dissimilarity index, the most common summary measure of "evenness"—the extent to which the distribution of two racial/ethnic groups differs across geographies. Prior research using census data found that the Boston-Quincy metro area was one of the most segregated of the nation's 50 largest metropolitan areas as of 2010, ranking 11th, 5th, and 4th in terms of the level of segregation among black, Asian, and Latino residents, respectively (Logan and Stults, 2011).[4]

To be able to make apples-to-apples comparisons of the dissimilarity index across metropolitan areas over the past several decades, we compare the dissimilarity specifically for the Greater Boston area to a handful of similarly constructed metropolitan divisions using both the decennial census and the 2012–17 American Community Survey. Figure 3.1 shows the change in the dissimilarity index since 2000 for Greater Boston versus the Chicago, New York, San Francisco, and Seattle metro divisions— areas with similar population composition and housing characteristics. Despite improvement in all three indices over time—for Asian, Latino, and black populations—as of 2017 the level of dissimilarity in Boston indicated a moderate to high degree of segregation for Latinos and a high degree of segregation for blacks. Moreover, the level of segregation in Greater Boston relative to that of the other metropolitan divisions varies considerably. While the dissimilarity index in Greater Boston is similar to the other cities for Asians, it is higher than San Francisco and Seattle for blacks, and is second only to New York for Latinos.

FIGURE 3.1

Dissimilarity Index for Boston versus Other Metropolitan Divisions

2000 - 2010 - 2017

Source: 2000 and 2010 Decennial Census, 2012–2017 American Community Survey

# What is the spatial relationship between income and race?

Patterns of racial and ethnic segregation are important because of the close connection between a group's spatial position in a geographical region and its socioeconomic well-being. Opportunities and resources are not evenly distributed across places, with some neighborhoods having less crime, better schools, less hazardous environments, and better access to job opportunities—typically accompanied by higher home values that reflect these characteristics. According to the classic Tiebout model (1956),[5] people will sort themselves according to their preferences for such amenities, subject to their income constraints. Naturally, as households improve their socioeconomic circumstances, they often move to gain access to these benefits for themselves and to provide greater opportunity for social mobility for their children. Previous research has demonstrated that race and ethnicity are highly correlated with socioeconomic status (Reeves, Rodrigue, and Kneebone 2016; Rodgers 2008; Lin and Harris 2008).[6] Indeed, Maps 3.2 and 3.3 indicate that there is a strong correlation between per capita income

and the share of people of color by municipality in the Greater Boston region.

Yet the consequences of racial segregation go beyond simply distributing resources unequally across groups to perpetuating a cycle of poverty for historically underrepresented—and even purposely disadvantaged—minorities. To assess the interaction of segregation and poverty, we use a census tract–based definition of racially and ethnically-concentrated areas of poverty (R/ECAPs).[7] Using this methodology, we identified 68 R/ECAPs in the Greater Boston region, accounting for 4.7 percent of the region's census tracts. Both the R/ECAPs and the high poverty census tracts that are not majority-minority are clustered in just a handful of cities (see map below). More than one-third of the R/ECAPs are in Suffolk County, primarily in Boston neighborhoods such as Dorchester and Roxbury, and to a much lesser extent Charlestown, Chinatown, and South Boston. Other large clusters exist in Lawrence and Lowell.
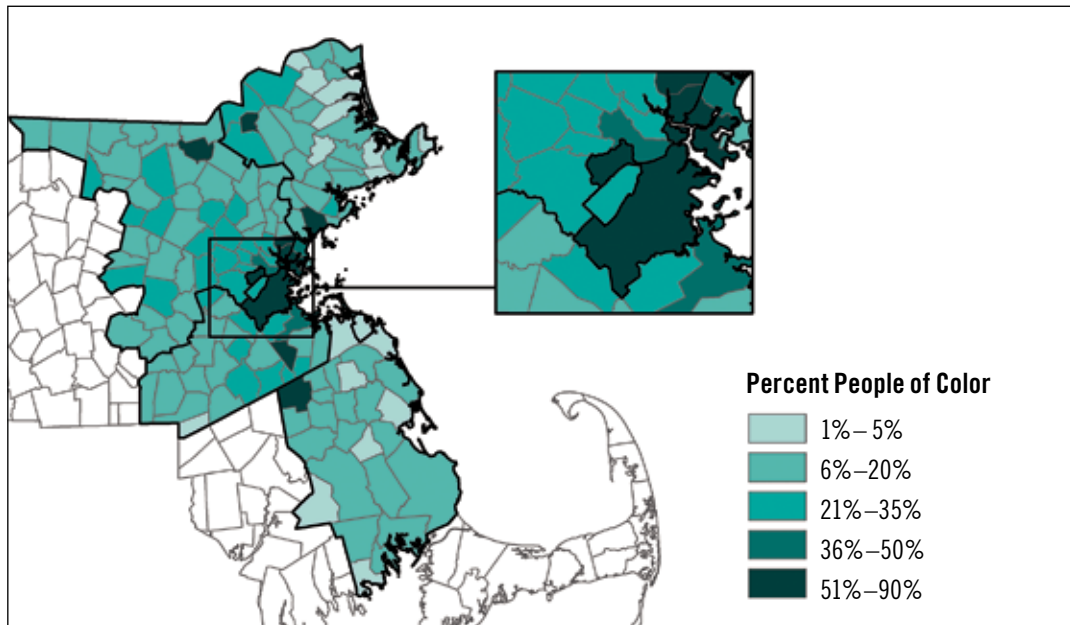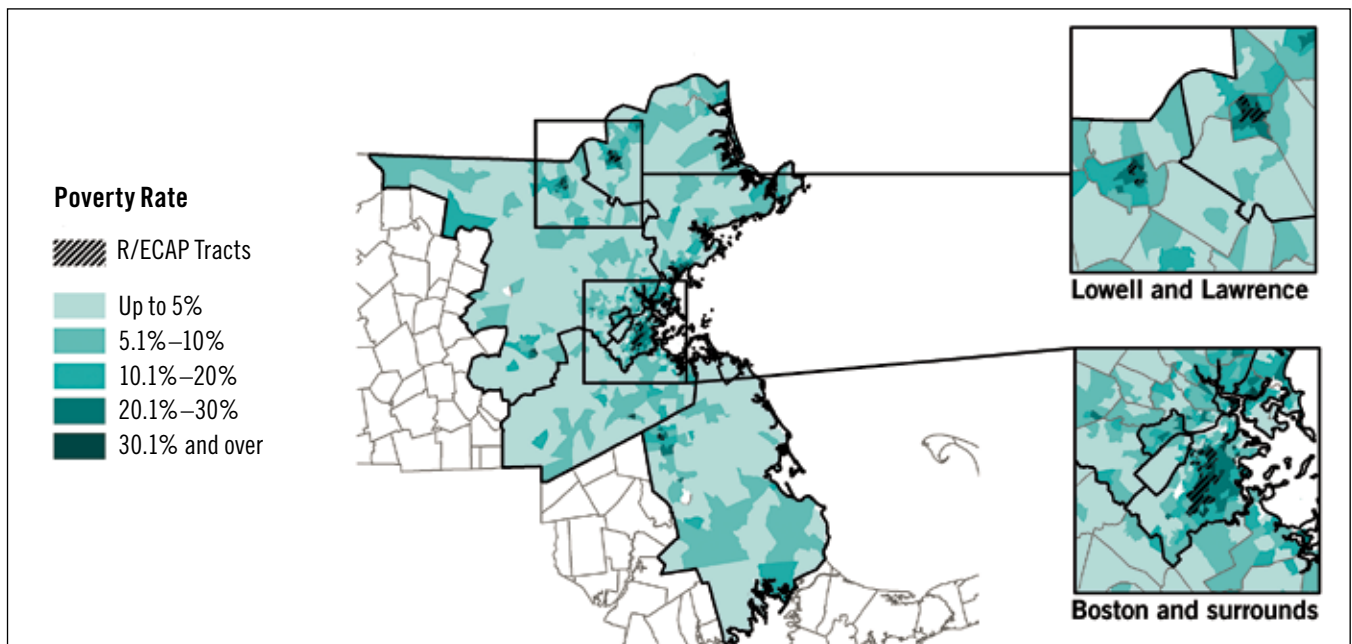
MAP 3.2
The Spatial Distribution of Income
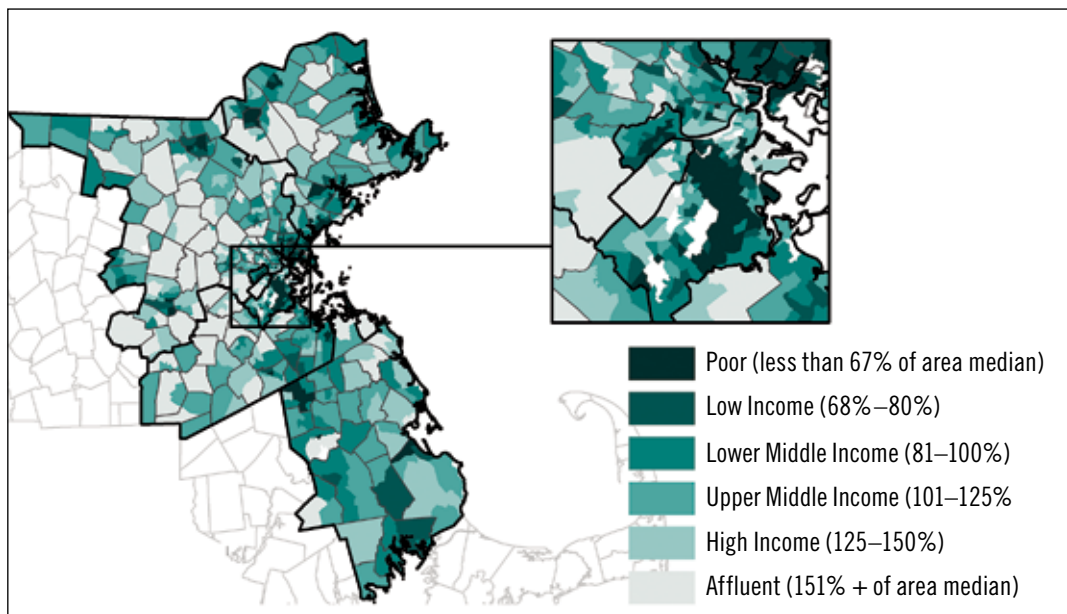
Source: U.S. Census Bureau, ACS 5-year Estimates 2013-2017

MAP 3.3

The Spatial Distribution of Race

Percent People of Color

	1% − 5%
	6% − 20%
	21% − 35%
	36% − 50%
	51% − 90%

Sources: Map of per capita income is from Reardon and Bischoff (2016). Map of share of people of color are the authors' calculations from the American Community Survey 2012-17 5-year estimates.

MAP 3.4

Racially and Ethnically Concentrated Areas of Poverty in Greater Boston, 2016

Poverty Rate

/////	R/ECAP Tracts
	Up to 5%
	5.1% − 10%
	10.1% − 20%
	20.1% − 30%
	30.1% and over

Lowell and Lawrence

Boston and surrounds

Source: HUD, Affirmitavely Furthering Fair Housing Data and Mapping Tool (AFFH-T), November 2017

However, several studies have shown that economic disparities alone do not explain segregation. For example, McArdle et al. (2003)[8] found that black and Latino Massachusetts residents were far more likely to live in high poverty areas than whites with the same incomes. Moreover, poor white families did not live in the same communities as poor blacks and Latinos, and significant numbers of affluent black and Latino households could be found in only a handful of suburban communities. In a follow-up study, McArdle and Harris (2004)[9] found that although black and Latino home buyers had lower incomes, on average, than white and Asian buyers, affordability alone could not explain persistent patterns of residential segregation.

While both rising income inequality and widening racial disparities in income play a role in racial segregation, controlling for these factors does little to change segregation patterns across municipalities. To account for income differences across racial groups, we use a measure developed by the Census that calculates the ratio of actual versus predicted racial/ethnic composition for each municipality. This actual versus predicted to reside ratio

measures the predicted, or expected, number of people based on the region's income distribution by race.

That is, the predicted value for a racial or ethnic group in a municipality is calculated as the number of residents the municipality has in a given income band multiplied by the racial/ethnic group's share of that income band for the Greater Boston region. The actual number of residents in each racial/ethnic group is then compared with the predicted total for that group to determine the actual-to-predicted ratio. Ratios with a value less than 1 indicate that the municipality has fewer residents in a given racial/ethnic minority group than one might expect given the city or town's income distribution.

When compared over time, this "predicted to reside" ratio also controls for broad population shifts in racial/ethnic composition (e.g., increased diversity overall) and demonstrates how that population would be distributed locally, holding income constant. If all races were distributed proportionally by income across cities and towns in the region, this ratio would be equal to 1.0 for every community. The figure below shows that averaged

FIGURE 3.2
Change in Actual versus Predicted to Reside Ratio Greater Boston Municipalities
2000 - 2010 - 2017
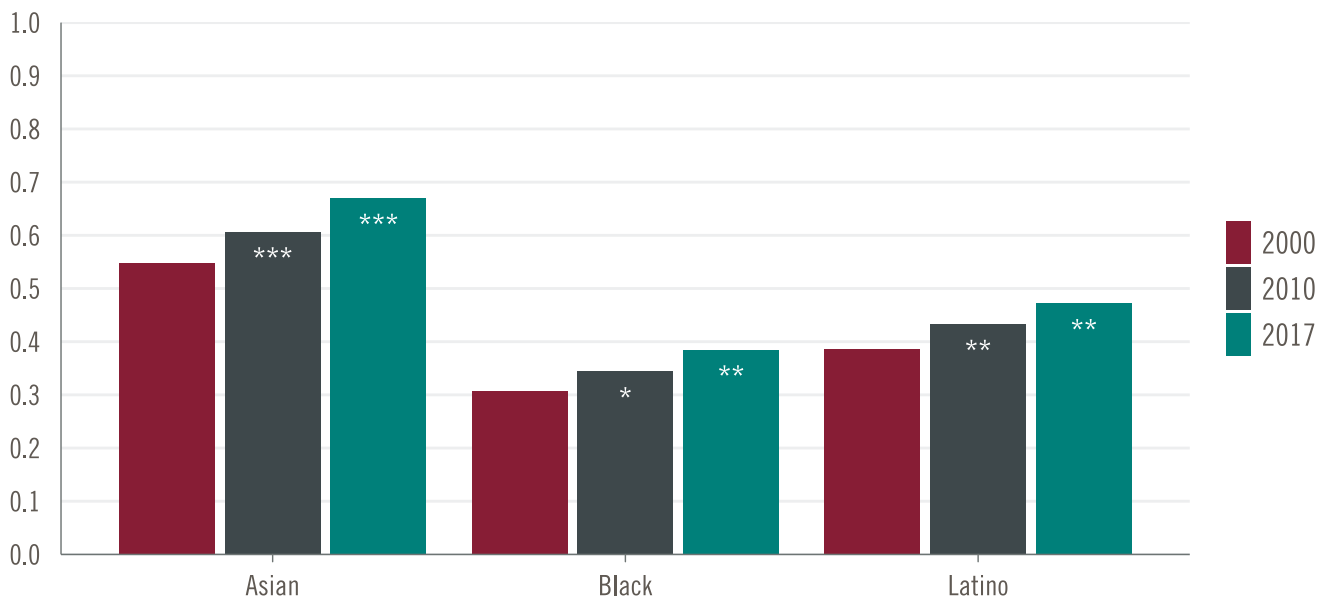
Source: ACS 5-year Estimates 2013–2017
Statistically significant at the 10% level = *   at the 5% level= **   at the 1% level= ***

across all communities in the Greater Boston region, the predicted to reside ratio for all three racial groups examined here increased by 8 to 10 percentage points between 2000 and 2017. While small in magnitude, this statistically significant improvement over time is similar to that found using the dissimilarity index, again indicating that racial segregation in the Greater Boston area is receding, albeit at a very slow pace.

The level of racial segregation in the Greater Boston region remains high by the standards set by the Census. As of 2017, municipalities in Greater Boston exhibit actual versus predicted to reside ratios that fall below 0.50 on average for blacks and Latinos, the threshold below which the non-white share is considered to be "severely below predicted." Even the Asian actual versus predicted to reside ratio is considered to be "moderately below predicted" at 0.67, such that the Greater Boston region is still only two-thirds of the way toward achieving an equal distribution of the Asian population across its cities and towns.

Moreover, the persistently high levels of segregation in the Greater Boston region are not driven by a few isolated communities. More than three quarters of the cities and towns in Greater Boston have Latino populations that are severely below the levels expected based on their income distribution. Roughly 67 percent of municipalities have black populations that are severely below predicted levels and 54 percent have Asian populations that are severely below predicted levels. At the other end of the spectrum, Boston, Brockton, Cambridge, Everett, Lowell, and Somerville have more than five times the predicted number of blacks while Chelsea, Lawrence, Lynn, Methuen, and Revere have more than double the predicted number of Latinos.

Where do we see significant improvements in segregation across Greater Boston at the municipal level? Maps 3.5, 3.6, and 3.7 show the change in the predicted to reside ratio between 2000 and 2017 for Asian, black, and Latino populations, respectively, by municipality. Both Asian and Latino populations appear to have become spread more evenly across the Greater Boston area. For example, the Asian population has moved out of the City of Boston and into communities to the west and north. In contrast, Latinos appear to be residing in greater numbers along the I-90 corridor. Less improvement has occurred with

MAP 3.5

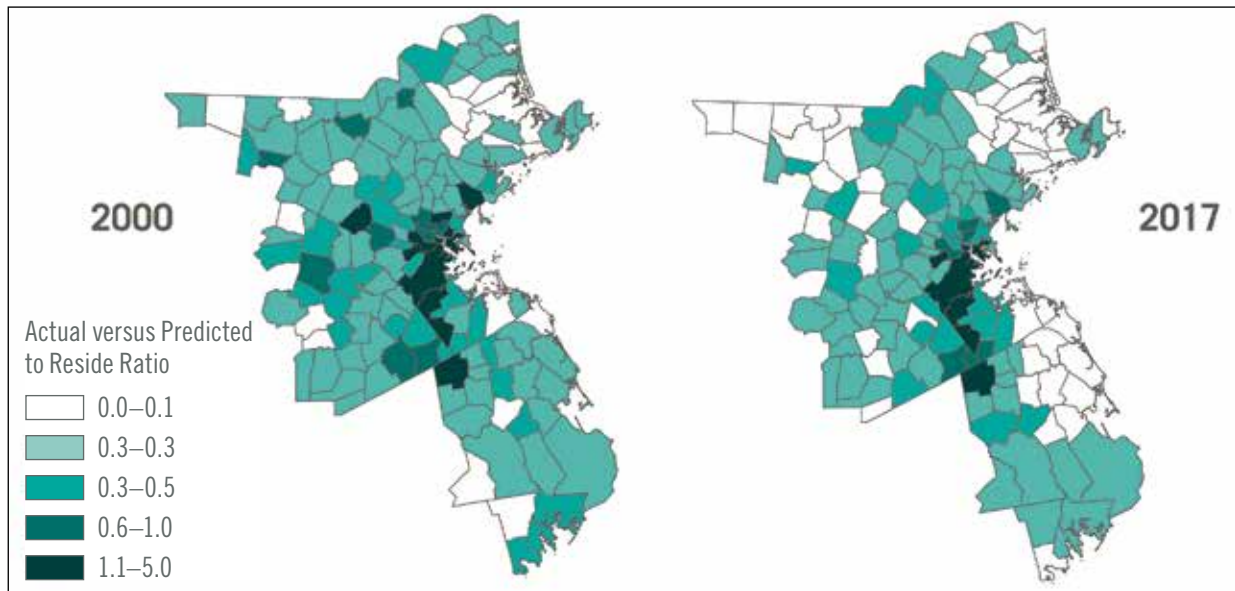## Change in Actual versus Predicted to Reside Ratio by Municipality: Asian
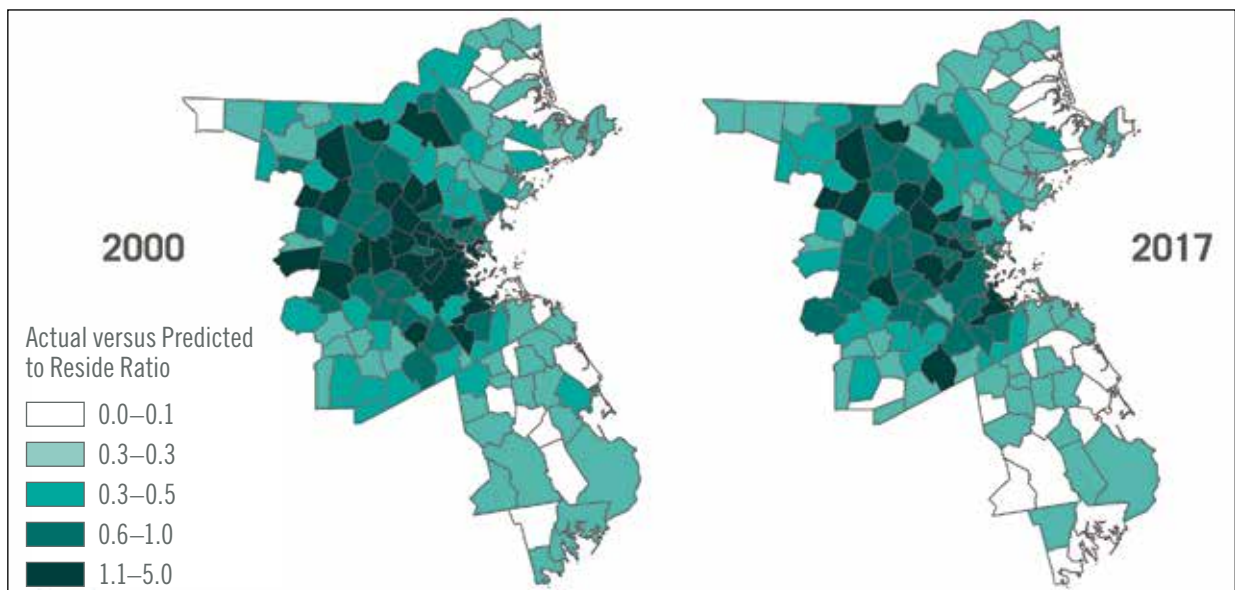
Source: HUD, Affirmitively Furthering Fair Housing Data and Mapping Tool (AFFH-T) November 2017

the distribution of the black population with the exception of some movement toward the South Shore. Again, while there are socioeconomic barriers hindering access to many communities in the Greater Boston area, it should be noted that this measure controls for income. As such, while the region may be more diverse, people of color are still below predicted levels in many suburban communities.
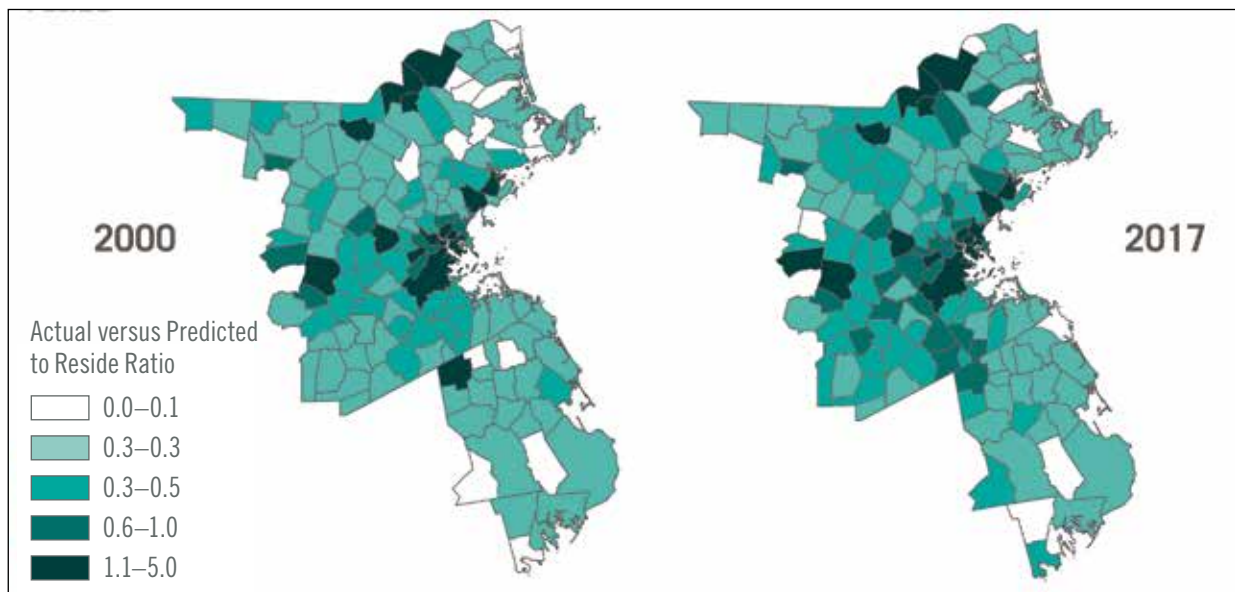
MAP 3.6

Change in Actual versus Predicted to Reside Ratio by Municipality: Black

Source: HUD, Affirmitively Furthering Fair Housing Data and Mapping Tool (AFFH-T) November 2017

MAP 3.7

Change in Actual versus Predicted to Reside Ratio by Municipality: Latino

Source: HUD, Affirmitively Furthering Fair Housing Data and Mapping Tool (AFFH-T) November 2017

How Racial Segregation Limits Opportunity

Where you live can have a real impact on your access to social capital and upward mobility. The demands for high-quality public schools, jobs, public transportation and other infrastructure, healthy food choices, and clean communities are often first met in high-income communities. Lack of investment in communities of color in Greater Boston has resulted in struggling schools, limited access to healthy and fresh groceries, and, in some cases, limited access to public transportation. It is important to put the current level of racial segregation in context and to understand what the consequences are for traditionally underrepresented populations.

Social science research has clearly demonstrated that neighborhood conditions play an important role in the life outcomes of residents, particularly youth. Youth from historically underrepresented racial and ethnic groups disproportionately live in neighborhoods with few job opportunities, lower performing schools, and high levels of crime that negatively affect their outcomes later in life (Chetty et al. 2016).[10] Moreover, striking racial differences in the likelihood of upward mobility demonstrate that escaping childhood poverty appears to be more difficult for non-white youth (Corcoran and Matsudaira 2005; Isaacs 2007; Kearney 2006; Mazumder, 2005).[11]

Neighborhood segregation by race, ethnicity, and socioeconomic status creates physical and social barriers for youth seeking access to employment, postsecondary education, and community engagement (Hardaway and Mcloyd 2009).[12] Low-income and non-white children are most likely to succeed in places that have less concentrated poverty, less income inequality, better schools, a larger share of two-parent families, and lower crime rates, with boys having especially poor outcomes in highly-segregated areas (Chetty and Hendren 2015).[13] By decreasing access to opportunity, segregation serves to exacerbate inequality across racial and ethnic groups.

Where are neighborhood barriers to opportunity in Greater Boston?

To explore issues related to access to opportunity, we map opportunity indices supplied by HUD across Greater Boston for 2017, the most recent data available. Of the six opportunity dimensions measured by HUD, we focus on poverty, school proficiency, labor market engagement, and neighborhood health.

We map these indices at the city/town level to identify where access to opportunity is the most abundant (darkest shading) or limited (lightest shading). The maps below show there are large pockets of opportunity in the Greater Boston area, particularly in the suburban communities that lie near the 128 ring, although many cities and towns scattered across the region also offer these opportunities. Furthermore, it is very common for communities with limited opportunity to be adjacent to communities with high opportunity.

Yet, the benefits or advantages that communities with higher access to opportunity experience frequently do not extend beyond town or neighborhood borders—particularly when it comes to school district boundaries. Rather, these advantages are contained within certain municipalities—as is evident in adjacent communities such as Boston and Brookline. This is also true for households' exposure to poverty and low labor market engagement. Wide differences between neighboring municipalities are less apparent for environmental health,
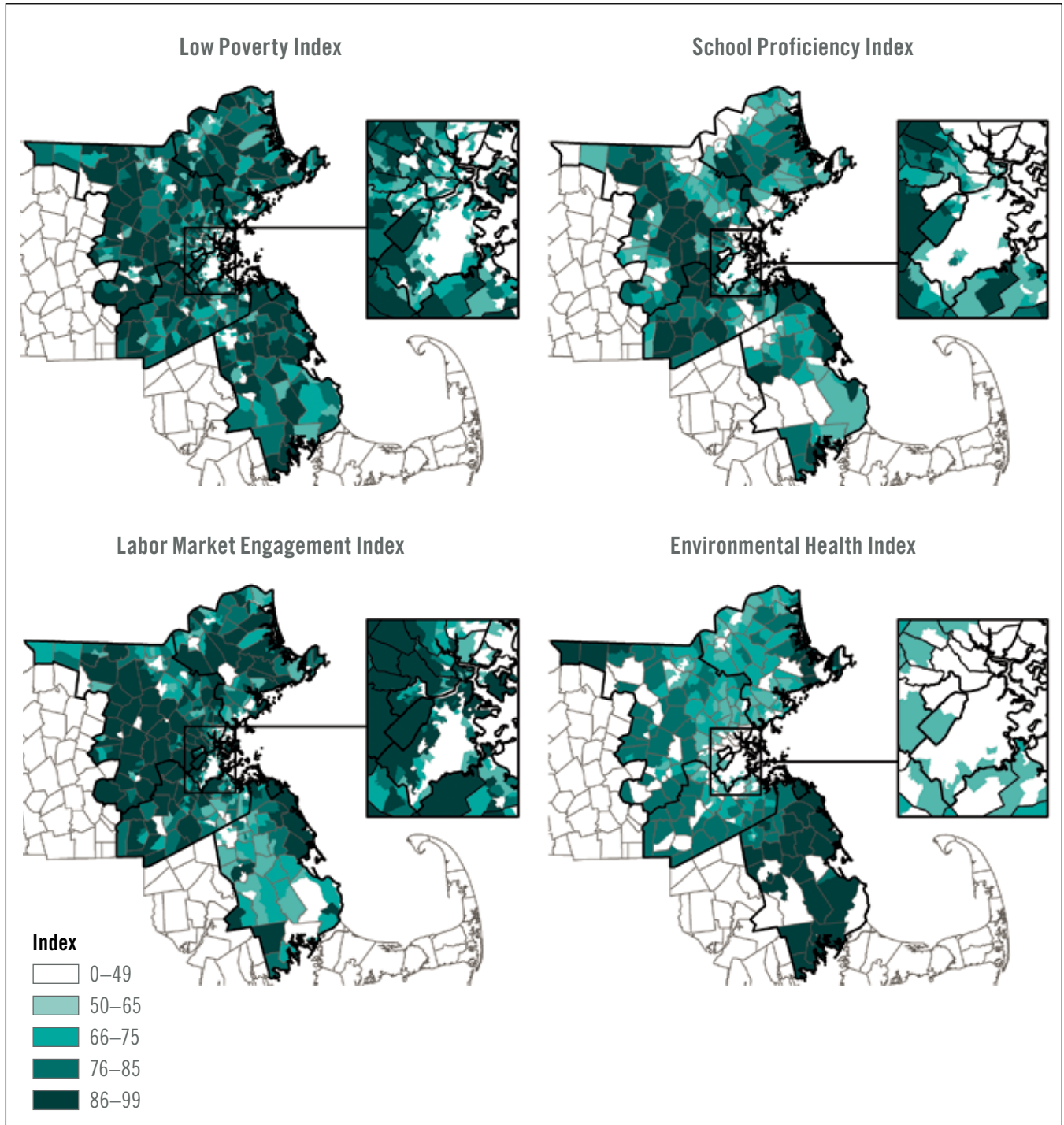
which makes sense given that air quality is related more to the proximity to industry than town borders.

Certain cities have low scores across a broad range of indices: the labor market, exposure to poverty, air toxins, proximity to jobs and physicians, and school performance. This closer look at the spread of opportunity across the region's municipalities, as well as the interaction between different types of opportunity, underscores that policy solutions must consider the multitude of dimensions that affect households' access to opportunity, regional and urban-suburban-rural divides, and how vulnerable populations can access opportunities available in neighboring areas.

What is the relationship between racial segregation and opportunity across various domains (poverty, job access, school quality, environment) in the Greater Boston area? Research demonstrates that more segregated places tend to have higher opportunity gaps between racial groups. Comparing the opportunity maps to those showing the share of people of color by city and town reveals a striking correlation. Indeed, a recent Urban Institute study found that "metropolitan areas with higher levels of segregation also have wider racial and ethnic disparities in labor market engagement, high-performing schools, and toxin-free environments" (Gourevitch, Greene, and Pendall, 2018).[14]

MAP 3.8

HUD Opportunity Indices for Greater Boston

Low Poverty Index

School Proficiency Index

Labor Market Engagement Index

Environmental Health Index

Index

0–49

50–65

66–75

76–85

86–99

Source: HUD, Affirmatavely Furthering Fair Housing Data and Mapping Tool (AFFH-T) Novemvber 2017

Addressing Racial Segregation in Greater Boston

The previous section demonstrated that although racial and ethnic minority groups are more likely to have lower incomes and experience higher rates of poverty than their non-Latino white counterparts, these income differences cannot explain the persistent patterns of segregation across Greater Boston. Residential segregation arises from a combination of a complex set of factors that includes both voluntary choices about where to live as well as constraints on those choices that reflect limitations on the number and type of units that are built, lack of information about housing options, or even outright discrimination in both renting and lending practices.

This section focuses on the relationship between racial segregation and housing production and what it may reveal about potential ways to address the problem of unequal access to resources in Greater Boston. We recognize that some of the challenges to increasing production are unique to affordable housing, but many apply to housing development more generally. These include economic and fiscal considerations, resource allocation, the state's legal and regulatory framework, public perception and attitudes, and the degree of local control over land use as specified by zoning regulations.

In addition, factors beyond housing production such as socioeconomic status, commuting times, individual preferences, cultural norms, and discriminatory practices also affect racial segregation. For example, limiting housing opportunities through redlining and other means has been a factor in excluding people of color from living in certain communities around Greater Boston.

What factors are at play in residential racial segregation?

Previous research on racial segregation in urban areas has focused primarily on economic factors, urban characteristics, and racial preferences (Easterly 2009; Card, Mas, and Rothstein 2008; Glaeser and Vigdor 2001; Cutler, Glaeser, and Vigdor 1999; Massey and Denton 1993).[15] More recently, researchers have explored another important institutional factor: local land use regulation. Several studies have found a significant relationship between density zoning and income inequality (Rothwell and Massey 2009) as well as racial composition (Pendall 2000).[16] Local control of land use has been recognized as a potential factor (Downs 1973; Fischel 1985),[17] but it is only recently that detailed data on zoning regulations at the municipal level have been collected over time, allowing for longitudinal analyses.

A small but growing body of evidence suggests that local land use regulations play a meaningful role in racial segregation across geographic locations of various sizes. For example, using two datasets of land regulations for the 50 largest U.S. Metropolitan Statistical Areas, Rothwell (2011)[18] finds anti-density regulations are responsible for a large portion of the level of and change in segregation from 1990 to 2000. According to his estimates, a hypothetical switch in zoning regimes from the most exclusionary to the most liberal would reduce the gap between the most and least segregated MSAs by at least 35 percent. Similarly, Resseger (2013)[19] uses a detailed database of Massachusetts land use regulations collected by MassGIS for the Commonwealth's Office of Geographic Information. He finds that census blocks zoned for multifamily housing in 2000 had black and Latino population shares that were 3 to 6 percentage points higher as of 2010 than single-family zoned blocks directly across a border from them. His results can explain more than half the difference between levels of segregation in Boston versus Houston.

We build on this literature by exploring the relationship between housing production and racial segregation. However, we acknowledge that correlations across municipalities are not necessarily evidence of a causal relationship. For example, municipalities in Greater Boston where the actual versus predicted to reside ratio for Asians, blacks, and Latinos was higher (i.e., racial segregation

was lower) were also those that had higher percentages of subsidized housing. Yet the current relationship between racial segregation and housing production across municipalities is likely to reflect pre-existing characteristics of communities that have persisted over time.

We address these issues by using data and methodologies that attempt to net out other factors. First, we use the predicted to reside ratio as our main dependent variable to measure segregation since this metric accounts for the socioeconomic status of different racial and ethnic groups. Second, we do not rely on contemporaneous correlations but instead examine the relationship between *changes* in racial segregation and *changes* in housing production over time. This approach nets out municipality characteristics that do not change over time that could limit affordable housing production such as size, proximity to Boston, and tax base.

What can cities and towns do to encourage more housing production, and more diversity in the types of units that are permitted? Although more communities have adopted best practices over the past decade, Chapter 2 revealed that the production of new housing still faces significant opposition in many municipalities. As such, it is difficult to assess which best practices lead to greater affordable housing production. Simply building more units without considering the type or affordability is unlikely to reduce segregation. Moreover, although racial diversity has much more often come to white neighborhoods, a recent analysis by the *New York Times* shows that since 2000, the arrival of white residents is now changing non-white communities in cities of all sizes, affecting about one in six predominantly black census tracts across the nation.[20] A similar pattern has occurred in the Greater Boston region since 1999, with suburban towns becoming less white and Boston neighborhoods becoming more white. An influx of white residents into downtown neighborhoods often has a significant impact on the mortgage market, the architecture, and the value of land itself as gentrification takes hold and pushes out previous residents of color.

How does housing production affect segregation?

To explore the relationship between racial segregation and housing production we draw simple scatter plots of changes over time and determine statistical significance using a regression equation. For example, the figure below shows the relationship between the change in the actual versus predicted to reside ratio for whites and the change in three separate measures of housing production to capture both the overall quantity (i.e., change in the per capita number of units permitted) and type (i.e., multifamily permits as well as subsidized units).[21] Each dot represents a community and where it falls along the two metrics listed on the axes. The horizontal regression line indicates the relationship between the two metrics based on the pattern across all the communities that are plotted. An upward sloping line indicates a positive relationship and a downward sloping line indicates a negative relationship.

Overall, the evidence suggests that there is a negative relationship between segregation and housing production. Communities experiencing greater reductions in segregation between 2000 and 2017 were those that permitted more housing units; however, the relationship does not hold uniformly across all types of housing. The scatter plots on page 83 and 84 indicate that municipalities experiencing a reduction in the actual versus predicted to reside ratio for whites had larger increases in the supply of multifamily housing. However, no such pattern exists for either total per capita permitting or the gap between the municipality's SHI and that required under 40B.[22] Thus, it appears that simply building more housing does not reduce segregation—it is necessary to build the right mix of different types of housing.[23]

FIGURE 3.3

Change in Actual versus Predicted to Reside Ratio for Whites versus Change in Per Capita Multifamily Permits
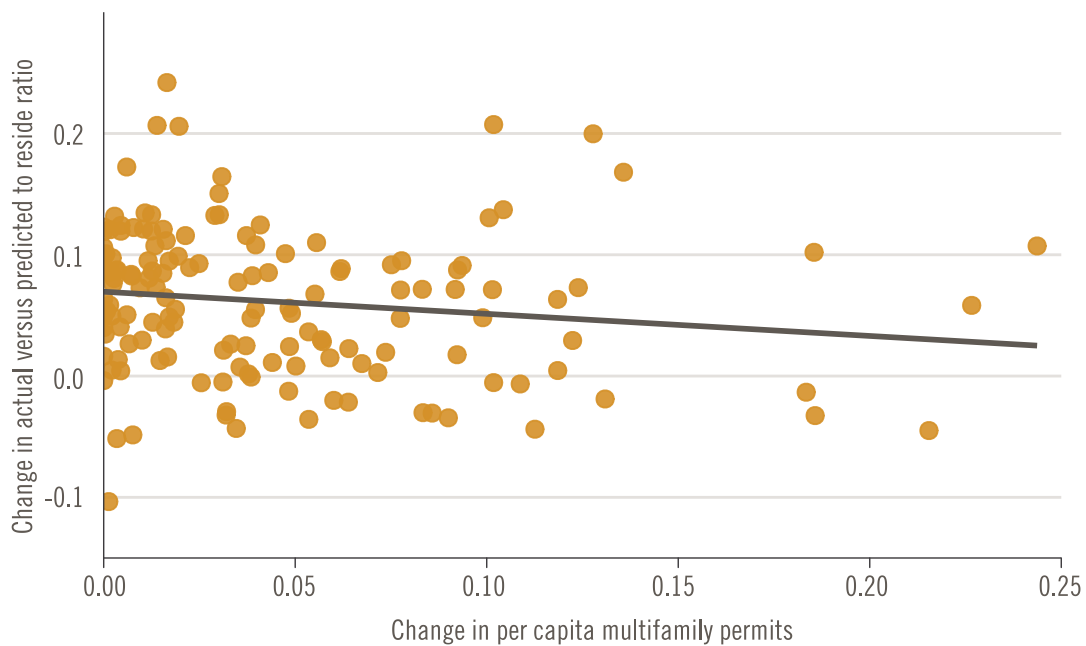
FIGURE 3.4

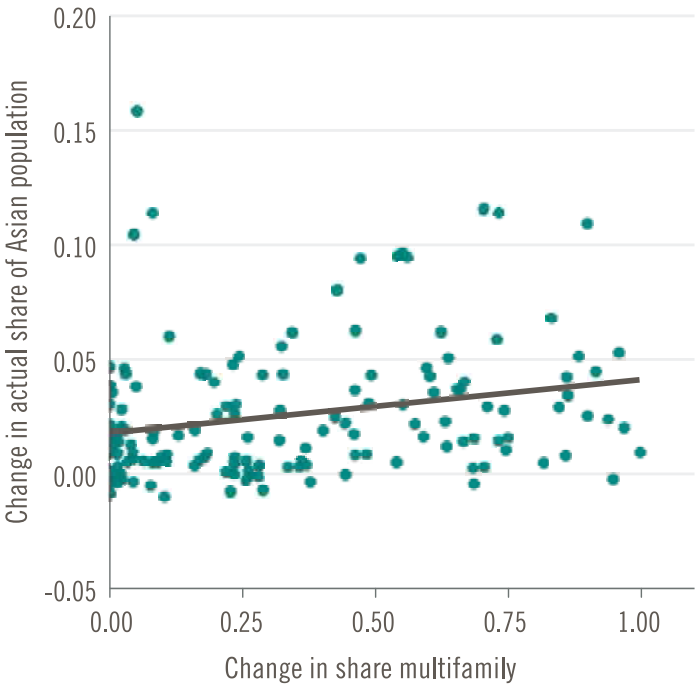## Change in Actual Share of Asian Population versus Change in Share of Housing That Is Multifamily

FIGURE 3.5

Change in Actual Share of Black Population versus Change in Share of Housing That Is Multifamily
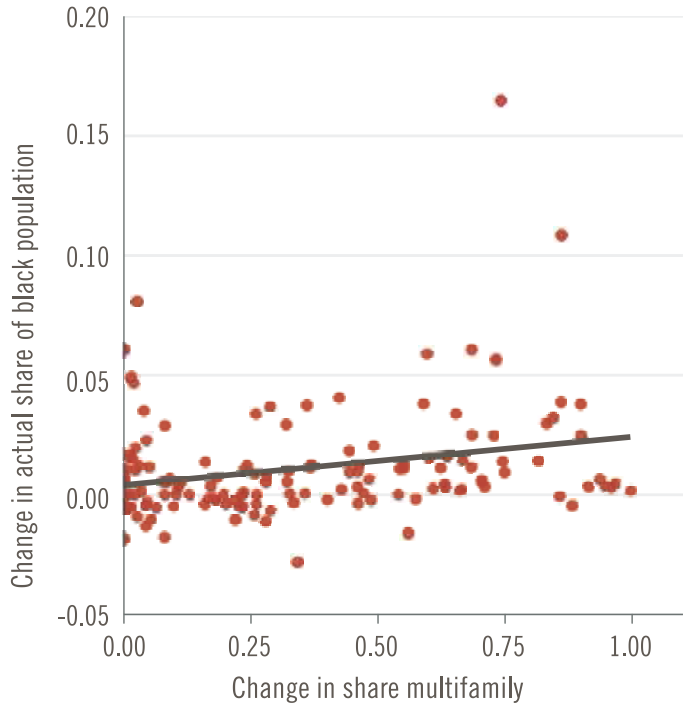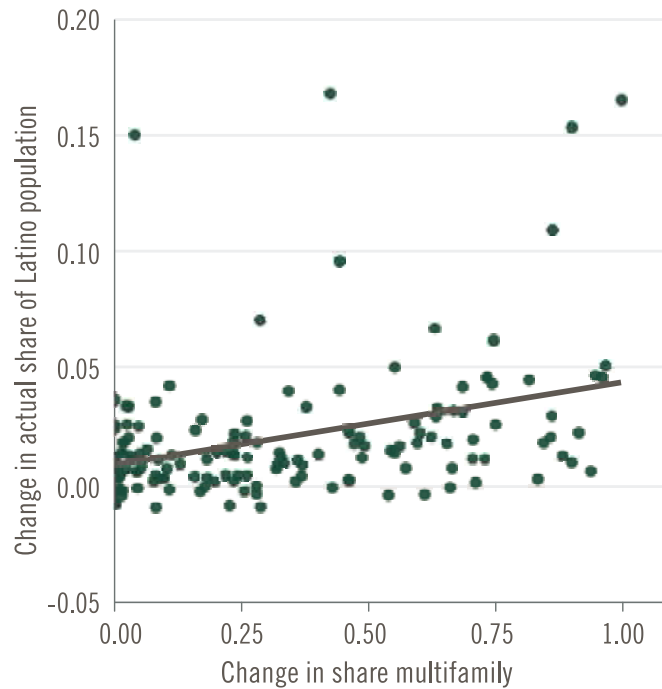
FIGURE 3.6

Change in Actual Share of Latino Population versus Change in Share of Housing That Is Multifamily

Yet changes in the actual versus predicted to reside ratio are small and can also reflect changes in the region's overall population as well as the share of each group that resides in each municipality. To further test the relationship between segregation and housing production, we look at the correlation between the share of the municipality's population that is white and housing production.[24] The results are qualitatively similar to those above and even stronger in magnitude. In addition, those communities that reduced their SHI gap also saw a reduction in the share of the population that was white. Thus, not only is it necessary to build a mix of the types of housing but also to ensure that housing is affordable to a more diverse set of individuals and families.

Are some racial or ethnic groups helped more than others by an increase in housing production? The scatterplots show a clear positive upward-sloping relationship between the change in the share of population for all three non-white racial and ethnic groups and the change in the share of multifamily housing.[25] Clearly, places that are

building more multifamily housing are becoming more diverse across multiple dimensions.

While these results serve to highlight the potential link between housing production and racial segregation, we emphasize that we cannot say for certain that this is a causal relationship. Many other factors affect racial segregation as individuals choose where to live for a variety of reasons. It stands to reason that limiting the number and type of housing units serves to constrain the ability of individuals to reside in certain places; nevertheless, it's likely that housing production is correlated with other community characteristics that serve to make a place less segregated. However, among the top 10 communities in terms of multifamily housing production between 2000 and 2017, the 2000 share of the white population ranged from 50.5 percent in Chelsea to 74.2 percent in Cambridge to 95.8 percent in Winthrop. Yet all of these communities experienced a reduction in the white population share between 2000 and 2017. [26]