

CityReport

Identifying America's Most Diverse, Mixed Income Neighborhoods

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Executive Summary

While much of our national discussion is focused on racial, ethnic and economic polarization, many urban neighborhoods around the country are both diverse and inclusive; their race and ethnicity mirrors the national population and they are inclusive, as measured by the variety of household incomes in the neighborhood. This study identifies these diverse, mixed income urban neighborhoods. It finds:

- Nearly seven million Americans live in diverse, mixed income urban neighborhoods, places where racial, ethnic and economic diversity is as great in the neighborhood as in the nation as a whole.
- Diverse, mixed income neighborhoods are disproportionately found in the nation's largest metropolitan areas, including New York, Los Angeles and San Francisco. Together, these three metropolitan areas account for half of all the residents of diverse, mixed income urban neighborhoods.
- Nearly all of the nation's large metropolitan areas have at least one such neighborhood.
- Diversity and inclusion at the neighborhood level is strongly influenced by metro-level demographics. Some metro areas that are relatively diverse have little neighborhood level diversity. In contrast, some metro areas that have relatively lower levels of diversity have high levels of mixing at the neighborhood level.
- The existence of these diverse, mixed income neighborhoods provides models of where the nation's metropolitan areas can build places that reduce the racial, ethnic and economic divisions that affect many aspects of life.
- We define diverse, mixed income neighborhoods as those in which there is a 60 percent or greater chance than any two randomly selected neighborhood residents would be from different racial/ethnic groups, and where the degree of income diversity is higher than in 80 percent of U.S. urban neighborhoods.

The U.S. is becoming more diverse nationally, but whether and how that diversity plays out in the neighborhoods where we live has profound implications for American society. Increasingly, as this report explains, we're coming to understand that diverse, mixed income neighborhoods play an important role in fighting poverty and promoting inter-generational economic mobility.

There's an unmistakable trend toward greater racial and ethnic diversity in most aspects of American life. Nearly every part of America is becoming more diverse—big cities, suburbs and rural areas. But there's an important cross current of increasing economic segregation. Even as we're growing more diverse and less geographically divided by race and ethnicity, we're more segregated by income and class.

Moreover, levels of racial and ethnic diversity are still very uneven from place to place. The lived experience of diversity—as determined by the race, ethnicity and income of the people in your neighborhood—is often very different from the diversity of the city or metropolitan area in which your neighborhood is situated.

What makes these trends and patterns so important is that a growing body of evidence shows that diverse, mixed income neighborhoods are a vital contributor to ameliorating poverty, expanding opportunity and promoting inter-generational economic mobility. While concentrated poverty, which disproportionately affects people of color, tends to perpetuate poverty, mixed income, mixed race neighborhoods offer ladders up. Seeing how, and where diversity and inclusion are working today will help policymakers tackle these difficult problems.

This study looks at the varied patterns of income and racial/ethnic diversity in America's urban neighborhoods and identifies our nation's most diverse, mixed income neighborhoods: the places where race, ethnicity and income are most mixed at a

local level. We use two statistical measures, the Racial and Ethnic Diversity Index (REDI) and the Income Diversity Index (IDI), to measure the mix of people and households in each urban neighborhood. We adjusted census tract data to reflect a common 1200-meter radius around each census tract centroid so as to compute diversity in a way that is comparable within and across metropolitan areas. We looked at the income, race and ethnicity of 32,000 neighborhoods to identify the most diverse and inclusive places.

To a large extent, the racial diversity of a neighborhood depends on the diversity of its metropolitan area. But it also depends on how segregated its metropolitan area is. By comparing expected levels of neighborhood diversity based on a metropolitan area's overall diversity with actual levels of neighborhood diversity, we can create an informative measure of diversity "performance."

We find that there are wide variations in the extent to which the lived experience of a typical neighborhood resident mirrors the diversity of the metropolitan area in which she lives. We express this diversity potential as a percentage, reflecting the degree to which the diversity encountered by the resident of the median neighborhood approaches the overall level of diversity in the metropolitan area. (Mathematically, the diversity of the median neighborhood can't exceed the diversity of the overall area). Some metro areas realize much of their potential diversity, while others fall far short.

Our neighborhood-level approach to identifying and measuring diversity enables us to show in detail which parts of a metropolitan area have the highest—and the lowest—levels of both racial economic and income diversity. An online geographic appendix to this report presents maps for each of the nation's largest metropolitan areas, which identify neighborhoods that are among the most diverse and mixed income nationally.

Introduction

Diversity and integration have long been contentious issues in the United States. The nation's racial and ethnic makeup has continued to grow progressively more diverse in each year. And while the nation has made notable strides in reducing residential racial segregation, progress has been uneven, and the lived experience of many people of color is quite different from those of the white population. Calls to acknowledge that “Black lives matter” and the racially tinged violence in places like Ferguson, Missouri, or Charleston, South Carolina are a reminder of how far we have to go.

While there has been much media discussion of the nation's growing economic inequality, the geography of inequality has gotten relatively little attention—until recently. As of late, racial segregation's economic cousin, income segregation has been much in the news. In a narrowly decided case, the Supreme Court held that communities had an obligation under the Fair Housing Act not to concentrate public housing in low income neighborhoods (a common practice that exacerbates income segregation). In Marietta, Georgia, just outside Atlanta, the suburban city government floated a \$68 million bond issue to purchase and demolish more than a thousand units of 1960s-vintage apartments to reduce the number of low- and moderate-income households living in the city (Ray, 2015). In Marin County, film producer George Lucas ran into formidable local opposition to his plans to build 224 units of “moderate income” housing—affordable to those with incomes of about \$72,000 per year (Izadi, 2015).

In recent years, abundant new evidence has been added to support the long-held belief that racial/ethnic and economic segregation have profoundly negative effects on the life prospects of marginalized communities. Higher levels of racial and ethnic segregation are associated with larger inter-racial earnings differentials. Households living in neighborhoods with high concentrations of poverty experience higher crime, have worse physical and mental health, receive inferior educational resources, and have worse economic outcomes than objectively similar households living in more mixed neighborhoods. And the findings from the landmark Equality of Opportunity study by Raj Chetty (Chetty, Hendren, Kline, Saez, & Turner, 2014), showed that segregation played a key role in perpetuating these disadvantages across generations. Intergenerational mobility—the probability that a poor child will grow up to achieve a higher relative standard of living—is dramatically lower in more segregated areas, a result that appears to be causal.

While most of the focus of media attention has been on highly segregated areas, this report aims to identify those neighborhoods—both nationally, and within individual metropolitan areas—that have the highest levels of diversity, where the population is composed of people from different racial and ethnic groups, and where a wide range of different income groups are represented.

The best demographic evidence suggests that America is generally becoming more integrated (by race and ethnicity) but more segregated, or stratified,

by income. We'll look to identify those neighborhoods where the process of racial and ethnic integration is most highly advanced, and where despite the national trend to the contrary, a range of people from different income groups live in the same area.

We hope this exercise is useful from a number of perspectives. While there have been flashpoints of conflict and violence in areas that remain segregated by race and income, the ability of significant numbers of Americans to live in neighborhoods characterized by high levels of racial/ethnic and economic diversity may provide some insight into both where and how we build a more inclusive nation that promotes more widely shared opportunity.

This report unfolds in six parts. We begin by reciting the many reasons why diversity and inclusion are important to the nation's economic and social well-being. We then define, precisely and statistically, the terms we use in this report to measure racial/ethnic and income diversity. The third and fourth sections of the report, respectively, examine patterns of racial/ethnic diversity and income diversity, nationally, among metropolitan areas and within metropolitan areas. Part five pulls together the several strands of our analysis to identify those neighborhoods with the highest levels of both racial/ethnic and income diversity, the places we describe as America's most diverse mixed income neighborhoods. Part six shows how we mapped the most diverse and mixed income neighborhoods in the nation's largest metropolitan areas.

The report contains two appendices. A technical methodological appendix is provided for readers with an interest in the techniques we used to develop the estimates presented in this report. For those who want to explore particular metropolitan areas in more detail, we also provide an online version of our metro-level findings and maps with this information.

Our analysis of diversity and inclusion looks at the patterns of population distribution in the urbanized portions of the nation's metropolitan areas for the past few years using recent Census data. To mitigate the effects of a technical analytical problem known as the "Modifiable Areal Unit Problem" which

complicates the analysis of diversity comparisons among differently sized geographies, we re-estimate the racial and ethnic composition and income distribution of each of the nation's urbanized census tracts using a uniform, 1200-meter radius.

Essentially, our approach is to compute an area-weighted sum of the population characteristics of an area within a 1200-meter radius of the centroid of each urbanized census tract. For geographically small census tracts, therefore, we average in the characteristics of adjacent census tracts, based on how large an area of the adjacent tract is included in our radius. For geographically large census tracts, (i.e. those which entirely contain the area within a 1200-meter radius of the tract centroid) we report the values for the tract. We examine data only for tracts that have an urban level of population density, which we define as 640 persons per square mile (or about one person per acre). This analysis covers the 52 largest U.S. metropolitan areas (all those with a population of 1 million or more) and encompasses 31,000 tracts with an aggregate population of about 140 million.

This report expands our knowledge of the diversity and inclusiveness in urban neighborhoods in several ways. First, it provides metropolitan and neighborhood level data on both racial and ethnic diversity and income diversity. Second, it shows how close each metropolitan area comes to realizing the diversity potential implicit in its demographic composition. Third, it provides maps showing the geography of the most diverse neighborhoods in each metropolitan area. Fourth, it uses a new technique to mitigate the distortions caused by the modifiable areal unit problem and allows an apples-to-apples comparison of diversity both within and across metropolitan areas. Like all studies of the geography of diversity, this report has important limitations. Our radius-based measurements aim to offset the biases in the variable geographic of census tracts, but the boundaries of our radii, like tract boundaries may not match locally defined neighborhoods.

This report was written by Joe Cortright. Data for this report—as explained in more detail in the appendix—is drawn from the American Community Survey. Opinions expressed and errors committed are solely those of the author.

1. Why diversity and inclusion matter

A growing body of sociological and economic research have demonstrated the high costs associated with racial and income segregation. While a comprehensive review of this literature is beyond the scope of this paper, we highlight here some of the key research findings that bear on the economic consequences of neighborhood diversity. Neighborhoods of concentrated disadvantage are not simply places where many households suffer from their own individual problems. The segregation of poverty (or a marginalized racial group) creates its own additional, collective burden on residents of these communities.

Part of this burden is evident in day-to-day quality of life issues, such as greater exposure to crime. Studies of the “Moving to Opportunity” program, in which families were given assistance to move from low-income to middle-income neighborhoods, showed a marked improvement in self-reported well-being. Moving to a neighborhood whose poverty rate was 13 percentage points lower was associated with an increase in self-reported quality of life equivalent to

an increase of \$13,000 in household income (Ludwig et al., 2012). But perhaps the most serious effects of concentrated disadvantage are the ways in which it acts to reproduce inequality and quash economic opportunity and mobility—the very promise of the American dream.

Economic Opportunity

High-poverty neighborhoods put their residents at a significant and immediate economic disadvantage. They typically have fewer local jobs than other neighborhoods, and often are distant from, or poorly connected to, other major job centers. These communities also often lack social networks that allow residents to find job openings (Bayer, Ross, & Topa, 2004).

For these and other reasons, people who grow up in high-poverty neighborhoods, on average, have worse economic outcomes than people who grow up in other kinds of neighborhoods, even if their family backgrounds are identical. The Equality of

Opportunity Project has shown that inter-generational income mobility is significantly higher in metropolitan areas with lower levels of income segregation (Chetty et al., 2014). The effect is so strong that, for children whose families move from high-segregation to low-segregation metropolitan areas, each additional year spent in the high-segregation region before the move is associated with less income as an adult.

Chetty and Hendren find that across metropolitan areas both income and racial ethnic segregation have a negative effect on children's income as adults (Chetty & Hendren, 2016)

“... our analysis strongly supports the hypothesis that growing up in a more segregated area – that is, in a neighborhood with concentrated poverty – is detrimental for disadvantaged youth.”

But they go on to say that it's not because of their parents' access to jobs, but because of the children's exposure to a different set of peers.

“Areas with less concentrated poverty, less income inequality, better schools, a larger share of two-parent families, and lower crime rates tend to produce better outcomes for children in poor families. Boys' outcomes vary more across areas than girls' outcomes, and boys have especially negative outcomes in highly segregated areas. One-fifth of the black-white income gap can be explained by differences in the counties in which black and white children grow up.”

Other studies have found similar effects. For example, black children who grow up in high-poverty neighborhoods that transition to low levels of poverty have incomes that are 30 to 40 percent higher than black children with similar backgrounds who grow up in neighborhoods that remain at high levels of poverty (Sharkey, 2013). These neighborhood influences on children's future earnings have been estimated at two-thirds as powerful as the influence of the children's own parents (Rothwell & Massey, 2014).

Public Services

A related, and contributing, problem associated with high-poverty neighborhoods is inferior public services. Local governments serving neighborhoods of concentrated poverty have both greater demand for costly public services and a smaller, more vulnerable tax base from which to raise revenue. As a result, these local governments often struggle to provide important services, reducing the quality of life of their constituents and making it more difficult to attract residents or businesses that might contribute to the tax base (Joassart-Marcelli, Musso, & Wolch, 2005).

Not surprisingly, then, regions with greater levels of economic integration have levels of public service that are more evenly distributed across neighborhoods, raising the quality of those services for residents of high-poverty communities (Reardon & Bischoff, 2011).

One of the most important of these public services is schools. Neighborhoods of concentrated poverty usually have a disproportionate share of their region's lowest-performing public schools. That seems to be a result both of less per-pupil funding, as well as peer and neighborhood effects (Jargowsky & El Komi, 2011). Low performing schools are, in turn, key factors in explaining the worse economic outcomes experienced by children growing up in these neighborhoods.

Racial segregation compounds concentrated poverty

While neighborhoods with concentrated poverty face additional burdens regardless of the ethnic background of their residents, economic segregation intersects with race in ways that carry significant consequences for racial equity. Residents of these neighborhoods are very disproportionately people of color, with blacks eight times more likely to live in high-poverty communities than non-Hispanic whites, and Latinos five times more likely, as of 2010.

Moreover, these results cannot be explained by racial differences in earnings. Black households earning between \$55,000 and \$60,000 per year, on average, live in neighborhoods with the same amount of

poverty as non-Hispanic white households earning about \$12,000 per year. All else equal, racially segregated black neighborhoods have also been shown to have an additional negative effect on economic mobility, on top of the effects of concentrated poverty and family characteristics (Chetty et al., 2014). And we know that at the metropolitan level, the earnings gap between blacks and whites is strongly correlated with the degree of segregation: the more segregated a metropolitan area's neighborhoods, the larger the gap between average black earnings and average white earnings (Cutler & Glaeser, 1997).

Even as racial segregation has declined since 1970, income segregation for people of color has increased. In the decades since the Civil Rights Movement, high-income black households have integrated with predominantly white neighborhoods at a faster rate

than low-income black households, increasing separation by economic status (Watson, 2009).

While many colloquial discussions of inequality frame the results as creating winners and losers, the research suggests that segregation by income and race does not produce "winners," in the sense that segregated high-income or non-Hispanic white households see improved outcomes: Segregation makes the excluded worse-off without making those who aren't excluded better off. In metropolitan areas with high levels of income segregation, low-income high schoolers graduate from high school at lower rates, but high-income high schoolers do not graduate at higher rates. Similarly, greater levels of racial segregation are associated with worse educational outcomes for black students, but not with better outcomes for white students (Quillian, 2014).

2. What is a “Diverse, Mixed Income Neighborhood?”

The objective of this report is to identify urban neighborhoods in the United States that are both diverse (having a mix of people from different racial and ethnic groups) and inclusive (composed of people from many different income groups). Various studies have addressed racial and ethnic composition of neighborhoods and income disparities. Even so, there are no set measures or thresholds that are agreed upon to define when a community is “integrated”. Scholars have used different measures (percent non-white, the racial/ethnic diversity index, entropy measures, and surely others) to measure the degree of integration within neighborhoods. Each author has set his or her own thresholds for describing neighborhoods as “diverse”.

Our approach is to identify neighborhoods that are among the highest ranking of all neighborhoods in the US. In essence, we are grading on a curve. This

analysis is a comparative one—it ranks urban neighborhoods relative to all the other urban neighborhoods in major metropolitan areas in the United States. We have not attempted to define an ideal, or establish a threshold for what is “enough”, or what is optimal; just to point out which places have more and which have less.

When it comes to race and ethnicity, we mean “diversity” in the strictest sense of the word: not as a synonym for “people of color” or any non-majority racial/ethnic group. A neighborhood that is composed entirely or predominantly of people from one racial or ethnic group is not “diverse,” whether the majority population is black, white or Latino. Similarly, we define a mixed income neighborhood as one with households from a variety of different income groups.

While the terms “diversity” and “inclusion” are frequently used quite broadly, we want to be clear that this study limits its comparisons to race, ethnicity and income. There are many other possible dimensions for measuring diversity using demographic data: we could look to discern whether there was a diversity of households by age, by household composition (singles, families with children, etc.), by the presence of same-sex couples, or by place of birth. All of these are valid and interesting lenses for characterizing the diversity of population, but they are beyond the scope of this study.

Two Dimensions of Diversity & Integration

This report considers two dimensions of integration: race/ethnicity and income. We classify neighborhoods in the United States both by how diverse are the races and ethnicities of their residents, and how diverse are the economic circumstances of their residents.

Although the two terms are related, diversity and integration actually measure different things, particularly when applied to differing geographies. A city or metropolitan area can be diverse without necessarily being integrated. Conversely, an area can be integrated without being highly diverse. Diversity speaks to the level of variation in the overall population, while integration measures the geographic pattern of locations of different groups within a region. For example, some metro areas have a high level of racial/ethnic diversity at the metropolitan level, but are quite segregated by neighborhood, meaning that the typical resident experiences little diversity where she or he lives. Conversely, other metropolitan areas have lower levels of overall racial/ethnic diversity at the metropolitan level, but are more integrated by neighborhood, so that the experience of diversity may be greater in their local neighborhood.

Nate Silver explored the relationship of diversity and segregation in large U.S. cities computing an integration/segregation index—a measure comparing the diversity within census tracts with the overall diversity of cities (Silver, 2015). Silver’s analysis showed that some cities have much more diversity at the neighborhood level than others,

relative to their overall level of citywide population diversity.

To set the context for our study, we consider the national trends in racial/ethnic and income diversity and integration in the United States. Both topics have been studied extensively and certain trends are evident.

Trends in Racial and Ethnic Diversity

The United States is growing increasingly diverse, as measured by race and ethnicity. We computed the racial and ethnic diversity index for the entire nation, using five major racial/ethnic groupings. This index corresponds to the probability that any two randomly selected persons would be from different racial/ethnic groups. Over the past 30 years, the share of the population in the largest single demographic group—non-Hispanic whites has declined, while the share of the population in other demographic groups, especially Hispanic and Asian has increased, producing an increase in the racial and ethnic diversity index.

Table 1:
Racial and Ethnic Diversity Index, United States

1980	37.9
1990	43.4
2000	52.5
2015	56.4

Computed from (Iceland, 2004), Census Bureau (2015).

Data from Census 2010 show that racial and ethnic diversity continued to increase nationally. But racial and ethnic diversity vary considerably by geography. The nation’s metropolitan areas are more diverse than rural areas, and the most populous metropolitan areas are the most diverse.

Table 2:
Racial and Ethnic Diversity Index, by Metropolitan Status, 2010

Area	
All Metropolitan Areas	57.8
Greater than 5 million	67.7
1 to 4.9 million	55.4
Less than 1 million	48.2
Micropolitan Areas	37.1
Rural Areas	32.2

Computed from (Wilson, Plane, Mackun, Fischetti, & Goworowska, 2012)

Trends in Racial/Ethnic Segregation, 1970 to 2010

Racial and ethnic segregation at the metropolitan level is often summarized using a “dissimilarity” index that examines the differences in geographic distributions of pairs of racial/ethnic groups. For example, a Black/White dissimilarity index measures the differences in locations of the white population and black population of a metropolitan area. The value of the index corresponds to the fraction of the population in each group that would have to move to a different neighborhood (in this case census tract) in order for the composition of each neighborhood to mirror exactly the proportions of each group in the metropolitan area. Higher values correspond to higher levels of segregation; lower values correspond to greater integration. A value of 100 means the two groups live in entirely separate neighborhoods; a value of zero means each group is represented in exactly the same proportions in each neighborhood.

Over the past twenty years, the black/white segregation index has declined in large U.S. metropolitan areas. The median black/white segregation index for the 51 largest metropolitan areas—those with a population of one million or more—declined from 65.5 in 1990 to 64.2 in 2000 and to 61.2 in 2010 (Frey, 2012). All but three of the 51 largest metropolitan areas recorded decreases in measured black/white segregation indices between 1990 and 2010. The only exceptions were Raleigh-Cary, Riverside and Sacramento.

Segregation between non-Hispanic whites and Latinos, and between Asians and whites, is less strong than between whites and blacks. In 2010, the dissimilarity index for non-Hispanic Whites and Latinos was 48, and for whites and Asians was 41, compared to a black white dissimilarity index of 59 (Logan & Stults, 2011). While black-white segregation has been easing, segregation between Latinos and non-Hispanic whites and between Asians and whites has been little changed, with a very slight increase in the past two decades. Nationally, the black-white dissimilarity index declined from 73 to 59 between 1980 and 2010; the Latino-non-Hispanic white dissimilarity index and Asian-white dissimilarity index have changed by no more than 2 points during that period. (Higher values of the dissimilarity index correspond to greater levels of segregation).

Trends in Economic Segregation

As is well known, income inequality has increased in the United States over the past several decades. Incomes have increased faster for households in the top quintile of the income distribution, and even faster than for those in the top one percent. The number of households in the middle class has declined from 50 percent of the population in 1970 to 42 percent today. The share of income going to the top one percent of the population has climbed back to levels not seen since 1929 (Krueger, 2012).

The growth in income inequality is closely related to the growth in income segregation. At the metropolitan level, income segregation is correlated with income inequality: more unequal metropolitan areas have higher levels of economic segregation (Reardon & Bischoff, 2011). There are relatively fewer households in the “middle” and increasingly, rich people live closer to other rich people and poor people live closer to other poor people. Thus, even as racial and ethnic segregation has attenuated, there’s growing evidence that Americans are increasingly segregated by income.

Income segregation at the neighborhood level has increased steadily since 1970: The proportion of families living in high-income and low-income neighborhoods increased from 15 to 33 percent and the share of families living in middle income

neighborhoods declined from 65 percent to 42 percent. Income segregation also has a relation to racial/ethnic segregation. In metropolitan areas, black and Latino families were disproportionately likely to be isolated in low income neighborhoods (Reardon & Bischoff, 2011).

Our own work has shown that within the urbanized portions of large metropolitan areas, the number of low income persons living in neighborhoods of concentrated poverty (defined as a poverty rate of 30 percent or greater) has doubled since 1970. Today more than 39 percent of the urban poor live in high poverty neighborhoods, up from 28 percent four decades ago (Cortright & Mahmoudi, 2014). Using more recent American Community Survey data, Paul Jargowsky has shown that the trend of concentrated poverty has continued to increase in recent years (Jargowsky, 2015).

Considering both Racial Ethnic and Economic Segregation

It's been common for the studies examining segregation to look at racial/ethnic segregation separately from income separately. But we know that the two are closely interrelated. Neighborhoods of concentrated poverty are disproportionately composed of persons of color; 75 percent of residents of urban high poverty neighborhoods were black or Latino (Cortright & Mahmoudi, 2014). As Sean Reardon and his colleagues argue:

... racial and socioeconomic segregation patterns emerge from a complex interplay of

many factors: racial disparities in income and wealth; racial differences in residential preferences, conditional on income; socioeconomic differences in residential preferences, conditional on race; the structure of the housing market; and patterns of racial prejudice and discrimination. In order to fully understand the forces shaping racial and socioeconomic segregation patterns, therefore, it is necessary to consider both together.
(Reardon, Fox, & Townsend, 2014)

One study looked at the incidence of what it labeled "dually-diverse neighborhoods" (Cutsinger, 2011). Using an entropy measure of diversity and looking at six income groups and four racial groups, it identified census tracts with high levels of both income and racial/ethnic diversity and found that incidence of dually diverse neighborhoods has nearly doubled each decade from 1970 to 2000, increasing from two percent of all neighborhoods in the 100 largest metropolitan areas to about 15 percent of all neighborhoods in 2000.

Finally, it is likely to be misleading and incomplete to frame racial and ethnic segregation as being separate from economic segregation. Just focusing on racial and ethnic segregation misses both the economic causes and consequences of segregation. Similarly, economic segregation is accentuated by, and significantly worsens the consequences of racial/ethnic segregation.

3. Racial and Ethnic Diversity

The first component of diversity is race and ethnicity. Here we explore which neighborhoods in the United States have the highest levels of racial and ethnic diversity.

Our core measure of racial and ethnic diversity is REDI: the racial and ethnic diversity index. This index measures the degree to which an area's population is made up of people from different racial and ethnic groups. The index is computed as one minus the sum of the squared shares of the number of persons in each defined racial and ethnic group. For the purposes of this analysis, we use five racial/ethnic categories, drawn from Census Bureau definitions, to compute diversity. These are: non-Hispanic white, non-Hispanic Black, non-Hispanic Asian, Hispanic, and all other. The final category includes persons identifying more than one race.

Higher values of REDI correspond to greater levels of diversity—a greater variety of persons from different racial and ethnic categories living in a particular area. The value of REDI ranges between zero and 80. It is zero if all of the persons living in an area belong to the same racial/ethnic category. It is 80 if the population of an area consists of exactly the same fraction (20 percent) of the population. In statistical terms, REDI can be thought of as the probability that any two randomly selected individuals from an area

would be from different racial/ethnic groups. A REDI of zero—corresponding to all persons being from a single group—means the probability of two persons being from different groups is zero. The upper limit of REDI in this instance (80) is directly determined by the division of the population into five different groups.

A key virtue of the REDI index is that we can apply it to a range of different geographies. In this report, we compute the REDI for entire metropolitan areas (to measure overall metropolitan population diversity) and also to individual neighborhoods (to measure the degree of diversity in each neighborhood).

While REDI is a useful device for classifying areas based on the presence of large racial and ethnic groups, it doesn't capture all of the possible dimensions of population diversity. In many conversations, we use "diversity" to describe differences in place of birth, national origin, gender and sexual orientation, but for purposes of this study we look at just race and ethnicity, and income.

Metropolitan Patterns of Racial and Ethnic Diversity

We use REDI to describe the diversity of each metropolitan area at two distinct geographic levels. We look at the overall level of diversity (the diversity

of the entire population) of each metropolitan area and the level of diversity in each neighborhood.

We refer to the overall level of diversity in a metropolitan area as “metropolitan diversity”. The first is to compute the overall diversity of the metropolitan area. We do this by estimating REDI for the entire population of the urbanized portions of the metropolitan area. This statistic describes the overall diversity of a metropolitan area’s population—but says nothing about the pattern of diversity *within* the different neighborhoods that compose the metro area.

We refer to the level of diversity in the typical neighborhood as the “median neighborhood diversity”. This measure tells us the racial and ethnic diversity of the typical middle, or median, neighborhood in a metro area. Using Census data, we computed the racial and ethnic diversity index for each urban density census tract in each of the nation’s 52 largest metropolitan areas. (See appendix for technical details.) We summarized this data for each metropolitan area, as a population-weighted median, which means that half of the population lives in a neighborhood with a higher level of diversity and half of the population lives in a neighborhood with a lower level of diversity.

The difference between the metro-wide REDI and the population-weighted median neighborhood REDI reflects the degree of segregation in a metropolitan area. If every neighborhood had exactly the same racial and ethnic composition as the metropolitan area as a whole—if it were perfectly integrated (at the tract level)—then the metro and neighborhood REDI statistics would be identical. The greater the disparity between the neighborhood median REDI and the metro REDI, the more the metro area is segregated. (And the median neighborhood can’t be more diverse than the metropolitan area as a whole.)

Overall, for urban neighborhoods in the 52 largest metropolitan areas, the population-weighted median value of REDI is 49.0. This means that half of all urban residents live in a neighborhood with a REDI higher than this value and half have a lower value. Table 3 shows the distribution of urbanized neighborhoods in the 52 largest metropolitan areas.

Table 3:
Racial/Ethnic Diversity Index,
Neighborhood Distribution for Large Metro Areas

Percentile	Value
10th	16.1
20th	26.8
33rd	37.5
50th (Median)	49.0
67th	56.9
80th	62.7
90th	67.5

Overall, the average resident of a large U.S. metro area lives in a neighborhood where there is about a 50/50 chance that any two randomly selected neighborhood residents would be from different racial ethnic groups. But there’s a wide dispersion in neighborhood diversity. Ten percent of urban residents live in neighborhood where there’s only a one-in six chance (16.1 percent) that two individuals would be from different racial/ethnic groups. Conversely, about 10 percent of Americans live in the most diverse neighborhoods, where there’s a greater than two-in three chance 67.5 percent, that two randomly chosen individuals would be from different groups.

Table 4 shows the metropolitan and median neighborhood racial and ethnic diversity index for each of the 52 largest metropolitan areas. In addition, we’ve computed the ratio of the REDI score in the median neighborhood to the REDI score for the metropolitan area and have ranked metro areas according to that ratio. REDI scores vary substantially from highest in the 60s and 70s, to lows in the 20s. (Recall that the racial and ethnic diversity index approximates the likelihood that two people drawn randomly from an area would be from different racial/ethnic groups.) In the most diverse areas, one would expect a 60 percent or higher chance that two randomly chosen people would be from different groups; in the least diverse areas, the odds would drop to about 25 percent.

Among large metropolitan areas, those with the greatest neighborhood racial and ethnic diversity are in the West (San Francisco, Las Vegas, Sacramento

and San Jose). Those with the lowest median neighborhood REDI are older cities in the Northeast

and Midwest Cleveland, Buffalo and Pittsburgh and St. Louis.

Table 4: Metropolitan and Median Neighborhood Racial and Ethnic Diversity, by Metropolitan Area

Metro Area	Median	Metro	Ratio
Seattle	53.6	56.6	94.7%
San Antonio	53.1	56.4	94.2%
Portland	42.1	44.8	94.1%
Riverside	56.4	62.5	90.2%
Sacramento	59.9	66.5	90.1%
Las Vegas	61.3	68.1	90.0%
Virginia Beach	54.0	61.2	88.2%
Grand Rapids	44.9	51.5	87.2%
Austin	53.9	62.1	86.7%
Orlando	57.2	66.3	86.3%
San Diego	57.1	66.2	86.3%
Jacksonville	49.9	57.9	86.2%
Raleigh	50.8	59.2	85.8%
San Francisco	61.1	71.8	85.1%
Tampa	46.1	54.3	84.9%
Oklahoma City	49.6	58.8	84.4%
San Jose	59.0	70.1	84.1%
Nashville	46.0	54.7	84.1%
Denver	45.5	54.4	83.6%
Charlotte	52.2	62.5	83.6%
Phoenix	48.1	57.9	83.0%
Washington	58.0	70.7	82.0%
Dallas	55.8	68.3	81.7%
Minneapolis	38.3	46.8	81.7%
Houston	57.0	70.0	81.4%
Salt Lake City	35.5	43.7	81.3%

Metro Area	Median	Metro	Ratio
Atlanta	53.4	66.9	79.9%
Boston	42.4	53.1	79.7%
Columbus	39.3	49.5	79.5%
Los Angeles	53.3	67.5	79.0%
Richmond	47.1	60.3	78.1%
Hartford	45.1	59.2	76.2%
Miami	49.0	64.4	76.1%
Indianapolis	38.6	51.3	75.2%
Kansas City	36.7	49.8	73.7%
Louisville	34.0	46.2	73.6%
Providence	34.6	47.0	73.5%
Baltimore	43.6	61.2	71.3%
New York	49.6	69.9	71.0%
New Orleans	42.3	61.7	68.5%
Pittsburgh	23.1	34.0	67.9%
Philadelphia	39.7	58.5	67.8%
Chicago	43.6	65.6	66.5%
Memphis	37.0	57.7	64.1%
Rochester	31.7	49.5	64.1%
Cincinnati	25.2	40.1	62.8%
Milwaukee	34.1	57.7	59.0%
Birmingham	32.7	57.2	57.2%
St. Louis	27.4	48.1	56.9%
Detroit	29.0	53.5	54.1%
Buffalo	24.1	44.8	53.6%
Cleveland	26.0	51.3	50.8%

The gap between the metro-wide REDI and the REDI of the median neighborhood reflects the degree of segregation within metropolitan areas—how closely the lived experience of the typical neighborhood resident comes to matching the diversity of the metropolitan area. In some cities, the diversity of the typical neighborhood is quite similar to that of the

region as a whole (the typical neighborhood in San Antonio, Seattle, Portland and Sacramento, for example, is about 90 to 95 percent as diverse as the region as a whole). In other metropolitan areas, the typical neighborhood resident experiences a level of diversity that is only about half as great as in the

metro area as a whole (Cleveland, Buffalo, Pittsburgh and Detroit).

We can divide the median neighborhood level of diversity by the metropolitan level of diversity to calculate how close a region comes to realizing its potential neighborhood diversity given its racial and ethnic composition. For example, in San Antonio, the metropolitan area has a REDI of 56.4 and the typical resident lives in a neighborhood with a REDI of 53.1, which means the typical neighborhood is about 94 percent as diverse ($53.1/56.4 = .94$) as the entire metropolitan area. In contrast, Cleveland has a metropolitan REDI of 51.3, but the resident of a typical neighborhood lives in an area with a REDI of 26.0, meaning it is only 51 percent as diverse as the metropolitan area. Although the two cities have similar overall levels of diversity, San Antonio is much more racially and ethnically integrated than is Cleveland.

Some metropolitan areas have high levels of diversity at a metropolitan level, but low levels of diversity in a typical neighborhood. Consider Minneapolis-St. Paul and Milwaukee. Metropolitan Minneapolis is less diverse, with a REDI of 46.8, compared to 57.7 in Milwaukee. But the typical Minneapolis-area resident lives in a more diverse neighborhood (REDI of 38.3) than a typical Milwaukeean (REDI of 34.1). Because of segregation, higher metropolitan level diversity in Milwaukee doesn't translate into neighborhood level diversity.

High Racial and Ethnic Diversity Neighborhoods

Another way to quantify the extent of racial and ethnic diversity in different metropolitan areas is to look at the number of people who live in neighborhoods with the highest levels of racial and ethnic diversity. We use a national standard to identify the most diverse neighborhoods in the United States. Our national standard is benchmarked to the distribution of the population within the 52 metropolitan areas we examined and identifies the neighborhoods that are in the 80th percentile or higher according to our measure of racial/ethnic segregation. The most racially and ethnically diverse neighborhoods meeting this standard have a REDI score of at least 62.7 meaning that the probability that two randomly selected persons from this area

would have a 63 percent chance of being from different racial and ethnic groups. Table 5 shows what fraction of the total metropolitan population in each metropolitan area lives in one of the nation's most racially and ethnically diverse neighborhoods.

Table 5: Percent of Population in Neighborhoods with High Levels of Racial and Ethnic Diversity

Metro	Population	Percent	Metro	Population	Percent
Las Vegas	829,025	44.2%	San Antonio	274,820	15.5%
Sacramento	800,822	44.2%	Minneapolis	341,087	14.7%
San Francisco	1,747,842	43.0%	New Orleans	121,986	13.4%
Washington	1,790,313	37.2%	Denver	289,659	12.6%
Orlando	597,133	33.6%	Chicago	1,029,224	12.6%
Houston	1,745,112	33.6%	Rochester	73,097	11.9%
San Jose	594,754	33.5%	Richmond	97,606	11.7%
Dallas	1,620,693	29.9%	Philadelphia	545,294	11.4%
Riverside	1,054,138	29.3%	Providence	115,133	10.8%
Seattle	785,658	27.5%	Indianapolis	124,890	10.1%
Atlanta	1,043,027	27.1%	Phoenix	369,973	10.1%
San Diego	766,406	26.6%	Grand Rapids	38,967	9.3%
Charlotte	311,573	24.8%	Buffalo	67,870	9.0%
Los Angeles	2,854,895	22.8%	Kansas City	107,073	7.5%
Oklahoma City	181,074	20.8%	Salt Lake City	70,928	7.0%
New York	3,444,635	19.8%	Columbus	88,944	6.6%
Austin	261,708	19.6%	Cleveland	101,664	6.6%
Jacksonville	186,792	19.0%	Portland	113,878	6.3%
Miami	811,779	18.8%	Louisville	39,616	4.9%
Nashville	163,622	18.4%	Birmingham	24,312	4.6%
Raleigh	131,143	18.0%	Milwaukee	40,601	3.5%
Virginia Beach	230,320	17.9%	Memphis	28,329	3.2%
Baltimore	359,601	17.2%	St. Louis	58,308	3.1%
Hartford	123,645	17.0%	Detroit	87,076	2.5%
Boston	548,368	16.8%	Cincinnati	20,456	1.4%
Tampa	399,700	16.7%	Pittsburgh	6,786	0.5%

In three metropolitan areas—Sacramento, San Francisco and Las Vegas—more than a 40 percent of the region’s population lives in neighborhoods with high racial/ethnic diversity. Six metropolitan areas have less than 4 percent of their population living in neighborhoods with high levels of racial and ethnic diversity, as measured by our national standard.

The fraction of a region’s population living in neighborhoods that meet our national standard for high racial/ethnic diversity is determined in part by the diversity of the population of the metropolitan area in which it is located. A metropolitan area with a highly diverse population can mathematically have more diverse, integrated neighborhoods than a population with a lower overall level of diversity.

4. Income Diversity

The second dimension of diversity we consider is the diversity of incomes within neighborhoods. Which urban neighborhoods have the highest levels of income diversity? We use an “income diversity index”—a statistical measure of the variation or range of household incomes within a small geographic area to measure income diversity. The diversity index measures whether a neighborhood is composed disproportionately of households in just a few income categories, or whether a wide range of different incomes are represented. In high-income-diversity neighborhoods, a mix of high income, middle income and low-income households are represented. In low-income-diversity neighborhoods, the population is disproportionately dominated by households in just one income group. Our measure makes no distinction between income levels; a low diversity area can either be disproportionately high income or disproportionately low income or disproportionately middle income.

The income diversity index is computed in a similar fashion to the racial and ethnic diversity index, with the population divided into five different groups according to the household income categories used for tabulation by the Census Bureau. The income diversity index is computed by taking the sum of the squared shares of the households in each income group, subtracting that number from one and then

multiplying the result by 100. Higher values of the income diversity index correspond to higher levels of income diversity within a geographic area.

Nationally, for the population living in the urbanized portion of the 52 largest metropolitan areas, the distribution of household incomes for 2011-15, according to the American Community Survey, looked like this:

Table 6: Income Distribution of the United States Urban Population.

Income Group	Percent of Population
Less than \$20,000	17.0%
\$20,000 to \$39,999	18.9%
\$40,000 to \$74,999	25.7%
\$75,000 to \$149,999	26.2%
More than \$150,000	12.3%

The values of the income diversity index differ from those of the racial and ethnic diversity index. In part this is because the income groups that we have chosen are more nearly balanced in size (between 12 percent and 26 percent of the U.S. population).

The income diversity index for the urbanized population of these metropolitan areas as a group is

78.6. For the 32,000 neighborhoods analyzed in this report, the income diversity index was distributed as follows:

Table 7: Income Diversity Index, National Percentiles for Tracts in Large Metro Areas

Percentile	Value
10th	66.0
20th	69.7
33rd	72.0
50th (Median)	73.7
67th	75.1
80th	76.2
90th	77.3

Income Diversity in Metropolitan Areas

For each metropolitan area we compute the level of income diversity in the median neighborhood, using a population-weighted median. The median IDI reflects the income diversity of the typical neighborhood in each metropolitan area, meaning that half of the households in the metropolitan area live in neighborhoods with income diversity higher than this level and half live in neighborhoods with income diversity below this level. It represents the typical lived experience of diversity in the typical neighborhood.

Table 8 shows the median neighborhood income diversity for each of the nation’s 52 largest metropolitan areas. Metropolitan income diversity ranges from 71.4 to 75.3. The places with the highest levels of income diversity include Boston, New Orleans, Portland and Providence. In these metro areas, high, middle and lower income households are more likely to live in the same neighborhoods. The metro areas with the lowest levels of income diversity include Memphis, San Antonio, Washington and Phoenix. In these metro areas, neighborhoods are more likely to be composed of households with similar income levels.

The percentile (right hand) column in Table 8 shows where the median neighborhood in each metropolitan area ranked compared to all urban neighborhoods in the United States in income diversity. For example, the resident of the median neighborhood in Boston lived in a neighborhood that was more income diverse than 68 percent of all urban neighborhoods in the 52 largest metro areas. Conversely, the resident of the median neighborhood in Memphis lived in a neighborhood that was more income diverse than only 28 percent of all urban neighborhoods.

Table 8: Income Diversity Index for Median Neighborhood

Metro	IDI	Percentile	Metro	IDI	Percentile
Boston	75.30	68	Riverside	73.65	48
New Orleans	74.98	63	Milwaukee	73.58	47
Portland	74.85	62	Louisville	73.53	47
Providence	74.77	61	Cleveland	73.42	45
New York	74.66	59	Baltimore	73.37	45
Los Angeles	74.56	58	Las Vegas	73.28	44
San Diego	74.33	55	Grand Rapids	73.16	43
Minneapolis	74.27	55	Houston	73.14	43
Pittsburgh	74.25	55	Charlotte	73.13	43
San Francisco	74.25	55	Detroit	73.11	42
Seattle	74.23	54	Denver	73.06	42
Chicago	74.13	53	Austin	72.99	41
Sacramento	74.11	53	Nashville	72.95	41
Jacksonville	74.08	53	Richmond	72.89	41
Atlanta	74.04	52	Virginia Beach	72.78	40
Cincinnati	74.04	52	Kansas City	72.76	39
Philadelphia	74.04	52	Columbus	72.58	38
Hartford	74.00	52	Indianapolis	72.56	37
Miami	73.99	52	Salt Lake City	72.53	37
Tampa	73.98	52	Birmingham	72.51	37
Buffalo	73.89	50	Oklahoma City	72.49	37
St. Louis	73.87	50	Dallas	72.48	37
Orlando	73.86	50	Phoenix	72.41	36
San Jose	73.76	49	San Antonio	72.17	34
Raleigh	73.71	49	Washington	71.55	29
Rochester	73.66	48	Memphis	71.43	28

High Income Diversity Neighborhoods

To identify the neighborhoods with the highest levels of income diversity, we define a high-income diversity neighborhood using the 80th percentile of the distribution of urbanized neighborhoods

nationally and identify all areas with an IDI of 76.2 or greater. (While Table 8 contains data for the median neighborhood in each metro area, this analysis identifies and tabulates the population of all persons living in urban neighborhoods with the highest levels of income diversity.

Table 9 ranks metropolitan areas by the fraction of the metropolitan area population living in neighborhoods with high levels of income diversity

Table 9: Population and Share of Population Living in High Income Diversity Areas

Metro	Population	Percent	Metro	Population	Percent
Boston	1,132,750	34.7%	Denver	382,383	16.7%
New York	5,201,643	29.9%	Baltimore	342,678	16.3%
Providence	309,661	29.0%	Oklahoma City	141,015	16.2%
San Francisco	1,120,416	27.6%	Charlotte	202,029	16.1%
Los Angeles	3,410,739	27.2%	St. Louis	296,570	16.0%
San Jose	477,092	26.8%	Nashville	136,608	15.4%
New Orleans	239,217	26.3%	Houston	766,931	14.8%
Portland	474,174	26.1%	Austin	190,400	14.2%
Seattle	695,068	24.3%	Raleigh	102,214	14.0%
San Diego	668,417	23.2%	Detroit	459,784	13.4%
Sacramento	417,810	23.1%	Washington	613,039	12.7%
Buffalo	169,894	22.5%	Riverside	451,295	12.6%
Tampa	534,632	22.3%	Grand Rapids	52,683	12.5%
Chicago	1,782,663	21.8%	Dallas	658,247	12.1%
Miami	932,894	21.6%	Kansas City	173,633	12.1%
Pittsburgh	285,973	21.1%	Cleveland	185,063	11.9%
Minneapolis	479,740	20.7%	San Antonio	203,399	11.4%
Orlando	362,943	20.4%	Phoenix	416,337	11.3%
Cincinnati	290,618	19.8%	Indianapolis	136,628	11.1%
Philadelphia	931,129	19.5%	Salt Lake City	107,280	10.6%
Jacksonville	191,426	19.4%	Richmond	87,565	10.5%
Atlanta	742,752	19.3%	Columbus	139,170	10.3%
Hartford	139,996	19.2%	Virginia Beach	132,568	10.3%
Rochester	110,036	18.0%	Las Vegas	184,704	9.8%
Birmingham	88,986	16.8%	Louisville	74,025	9.2%
Milwaukee	193,754	16.7%	Memphis	81,476	9.1%

5. America's most diverse, mixed income neighborhoods

We can combine our data on racial and ethnic diversity and on income diversity to identify those neighborhoods that are in the top quintile (top 20 percent) of all U.S. neighborhoods on both of these metrics. These are neighborhoods that are in the top twenty percent for racial and ethnic diversity and also in the top twenty percent of all neighborhoods for income diversity.

In the 52 largest metropolitan areas, a total of about 6.7 million people live in these most diverse and mixed income neighborhoods. Together, this represents slightly less than 10 percent of the total urbanized population of these large metropolitan areas. The population of diverse, mixed income neighborhoods is highly concentrated: just three metropolitan areas (New York, Los Angeles and San Francisco) account for about half (more than 3.3

million) of the persons living in diverse mixed income neighborhoods.

Which metropolitan areas have the most diverse, mixed income neighborhoods? To answer this question, we count the number of persons living in a diverse, mixed income neighborhood (defined as in the top 20 percent nationally in both racial and economic diversity and income diversity).

Table 10 shows the fraction of the population in each metropolitan area that lives in one of the nation's most diverse, mixed income neighborhoods. There is wide variation among metropolitan areas; 14 percent of the San Francisco Bay area's population—which

includes San Francisco as well as Oakland and the East Bay—lives in neighborhoods that are the nation’s most diverse and inclusive. About one in nine in San Jose live in these neighborhoods, and about one in ten New Yorkers live in such a neighborhood. Los Angeles, Boston and Sacramento are strong performers, as well. At the other end of the spectrum, ten metropolitan areas have no

neighborhoods that rank among the nation’s most diverse and inclusive. But as we shall explore further in a moment, these simple raw rankings are in large part shaped by the overall level of metropolitan diversity, rather than the pattern of integration within each metropolitan area.

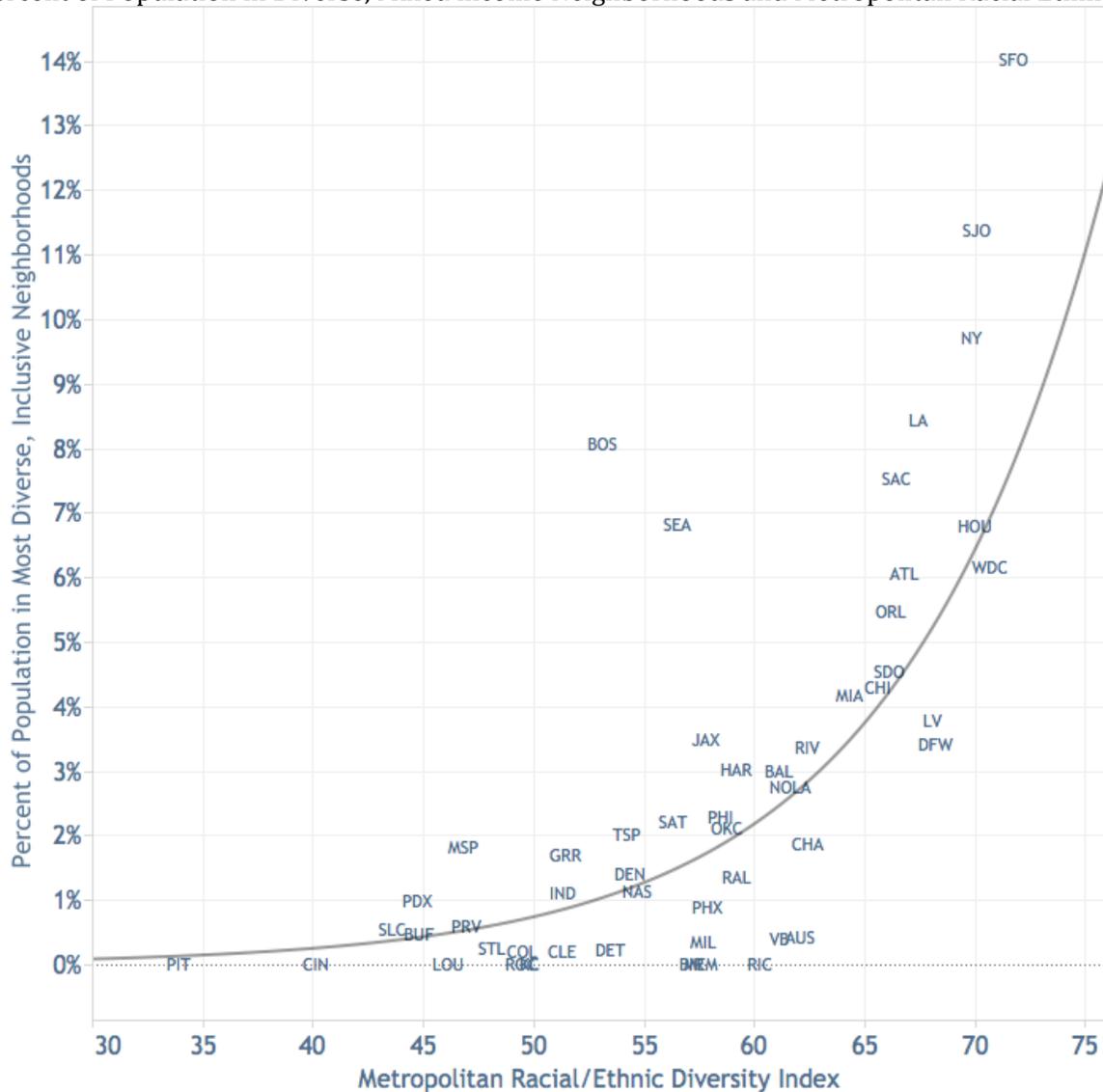
Table 10: Population and Share of Population Metropolitan Area Population Living in America’s Most Diverse, Mixed Income Neighborhoods

Metro	Population	Percent	Metro	Population	Percent
San Francisco	568,808	14.0%	Minneapolis	41,572	1.8%
San Jose	201,664	11.3%	Grand Rapids	7,059	1.7%
New York	1,686,921	9.7%	Denver	31,709	1.4%
Los Angeles	1,052,921	8.4%	Raleigh	9,781	1.3%
Boston	262,758	8.0%	Nashville	9,995	1.1%
Sacramento	136,063	7.5%	Indianapolis	13,327	1.1%
Seattle	194,366	6.8%	Portland	17,426	1.0%
Houston	351,972	6.8%	Phoenix	31,850	0.9%
Washington	295,747	6.1%	Providence	6,015	0.6%
Atlanta	232,875	6.0%	Salt Lake City	5,247	0.5%
Orlando	96,922	5.5%	Buffalo	3,389	0.4%
San Diego	130,078	4.5%	Austin	5,436	0.4%
Chicago	350,559	4.3%	Virginia Beach	4,956	0.4%
Miami	179,438	4.2%	Milwaukee	3,718	0.3%
Las Vegas	70,408	3.8%	St. Louis	4,481	0.2%
Jacksonville	34,062	3.5%	Detroit	7,324	0.2%
Dallas	183,546	3.4%	Cleveland	2,789	0.2%
Riverside	120,279	3.3%	Columbus	2,418	0.2%
Hartford	21,762	3.0%	Birmingham	-	0.0%
Baltimore	62,299	3.0%	Cincinnati	-	0.0%
New Orleans	24,919	2.7%	Kansas City	-	0.0%
Philadelphia	108,111	2.3%	Louisville	-	0.0%
San Antonio	38,876	2.2%	Memphis	-	0.0%
Oklahoma City	18,204	2.1%	Pittsburgh	-	0.0%
Tampa	47,964	2.0%	Richmond	-	0.0%
Charlotte	23,321	1.9%	Rochester	-	0.0%

Which metropolitan areas perform the best in achieving diversity and inclusion, based on their racial and economic composition? A key factor influencing the share of any metropolitan area's population that live in a diverse, mixed income neighborhood is the overall diversity of the metropolitan population. Metro areas that have little diversity overall will mathematically have fewer diverse neighborhoods.

Figure 1 shows the statistical relationship between overall metropolitan racial/ethnic diversity and the number of diverse, mixed income neighborhoods in each metropolitan area. As one would expect, the most diverse cities (San Francisco, New York) have a larger share of their population's living in diverse, mixed income neighborhoods, and less diverse metro areas (Cincinnati, Pittsburgh) have a smaller share of their population in diverse mixed income neighborhoods.

Figure 1: Percent of Population in Diverse, Mixed income Neighborhoods and Metropolitan Racial Ethnic Diversity



Overall, the relationship between metro level racial and economic diversity and the share of the population living in diverse, mixed income neighborhoods is non-linear: the population living in diverse, mixed income neighborhoods is proportionately larger in more diverse metros than in less diverse ones. This statistical relationship is illustrated by the curve fitted to the data in Figure 2. We can use this overall relationship between metropolitan diversity and diverse, mixed income neighborhoods to look to see which metropolitan areas have more such neighborhoods than one would expect and which have fewer. For each metropolitan area, we use the statistical relationship for all metro areas to predict the percent of the metro population that would live in diverse mixed income neighborhoods if that metro area's performance mirrored the "typical" metropolitan area. We can then compute a residual to show whether the metro area outperformed the typical pattern (had a bigger share of its population living in diverse, mixed income neighborhoods than one would expect given the metro area's overall diversity) or whether it under-performed the typical pattern (had a smaller fraction of its population living in diverse, mixed income neighborhoods than one would expect given the typical pattern).

These results are shown in Table 11. The columns in this table identify the metropolitan area, the predicted percentage of its population that would be expected to live in diverse mixed income neighborhoods based on its overall metro diversity, the actual or observed share of the population that lives in such neighborhoods and the difference. The table ranks metropolitan areas by the difference between the expected and actual share of the population living in diverse neighborhoods, with the best performing neighborhoods ranked first.

Table 11: Predicted vs. Actual Percent of Population in Diverse, Mixed income Neighborhoods Based on Metropolitan Racial Diversity

Metro	Actual	Pred.	Diff.	Metro	Actual	Pred.	Diff
Boston	8.0%	1.0%	7.0%	New Orleans	2.7%	2.6%	0.1%
San Francisco	14.0%	7.8%	6.2%	Salt Lake City	0.5%	0.4%	0.1%
Seattle	6.8%	1.5%	5.3%	Buffalo	0.4%	0.4%	0.0%
San Jose	11.3%	6.5%	4.9%	Providence	0.6%	0.5%	0.0%
Los Angeles	8.4%	4.9%	3.5%	Nashville	1.1%	1.2%	-0.1%
New York	9.7%	6.3%	3.3%	Pittsburgh	0.0%	0.1%	-0.1%
Sacramento	7.5%	4.4%	3.1%	Cincinnati	0.0%	0.3%	-0.3%
Jacksonville	3.5%	1.7%	1.7%	St. Louis	0.2%	0.6%	-0.4%
Atlanta	6.0%	4.6%	1.5%	Columbus	0.2%	0.7%	-0.5%
Minneapolis	1.8%	0.5%	1.3%	Louisville	0.0%	0.5%	-0.5%
Orlando	5.5%	4.3%	1.2%	Cleveland	0.2%	0.8%	-0.7%
Hartford	3.0%	2.0%	1.0%	Kansas City	0.0%	0.7%	-0.7%
Grand Rapids	1.7%	0.9%	0.8%	Raleigh	1.3%	2.0%	-0.7%
Tampa	2.0%	1.2%	0.8%	Rochester	0.0%	0.7%	-0.7%
Miami	4.2%	3.5%	0.7%	Washington	6.1%	6.9%	-0.8%
San Antonio	2.2%	1.5%	0.7%	Detroit	0.2%	1.1%	-0.9%
Baltimore	3.0%	2.5%	0.5%	Phoenix	0.9%	1.7%	-0.9%
Portland	1.0%	0.4%	0.5%	Charlotte	1.9%	2.8%	-1.0%
Riverside	3.3%	2.8%	0.5%	Milwaukee	0.3%	1.7%	-1.4%
Philadelphia	2.3%	1.8%	0.4%	Las Vegas	3.8%	5.2%	-1.5%
Chicago	4.3%	4.0%	0.3%	Birmingham	0.0%	1.6%	-1.6%
Houston	6.8%	6.4%	0.3%	Memphis	0.0%	1.7%	-1.7%
San Diego	4.5%	4.2%	0.3%	Dallas	3.4%	5.3%	-1.9%
Denver	1.4%	1.2%	0.2%	Virginia Beach	0.4%	2.5%	-2.1%
Indianapolis	1.1%	0.8%	0.2%	Austin	0.4%	2.7%	-2.3%
Oklahoma City	2.1%	1.9%	0.2%	Richmond	0.0%	2.3%	-2.3%

This table shows that Boston, San Francisco, Seattle, San Jose, and Los Angeles substantially outperform expectations given their racial and ethnic diversity—a larger share of their population lives in one of the nation’s most diverse, mixed income neighborhoods than one would expect simply knowing the overall diversity of the metropolitan area. Conversely,

Richmond, Austin, Milwaukee, Memphis, and Birmingham underperform—they have fewer people living in diverse, mixed income neighborhoods than one would expect given the diversity of the metropolitan area.

6. The geography of diverse, mixed income neighborhoods

Our analytical strategy allows us to map our results by metropolitan area. This section of our report describes the maps we've prepared for metropolitan areas and summarizes some of the key geographic patterns we've observed across and within metropolitan areas.

Most metropolitan areas have historically developed outwards from their urban core or central business district. Older and more diverse housing types tend to be found in the center; newer and lower density (single family) housing is more likely to be found on the periphery. One of the drivers of suburban growth, particularly in the 1950s and 1960s, was white flight from urban areas (Boustan, 2007). In recent decades, the racial and ethnic diversity of suburbs has

increased, and there has been some increase in the white population in city centers (Frey, 2015).

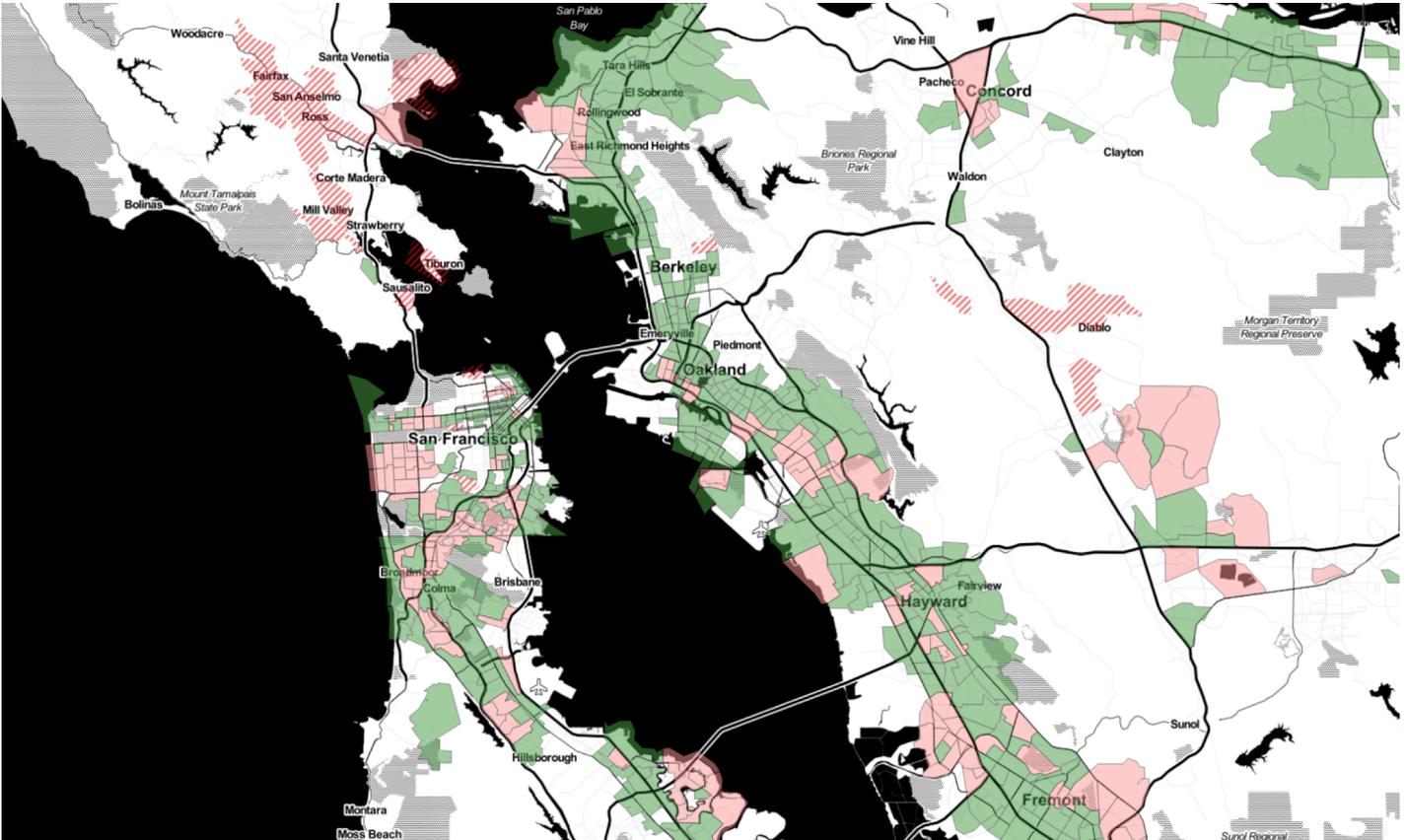
Geographic Patterns of Racial and Ethnic Diversity

We computed the racial and ethnic diversity index of each urbanized census tract in each of the metropolitan areas in our study. In addition, for each metropolitan area, we examined the distribution of census tracts according to the racial and ethnic diversity index. We then mapped the location of those census tracts that were among the ten percent most racially and ethnically diverse and ten percent least racially and ethnically diverse. The following map shows the location of the most and least

racially/ethnically diverse neighborhoods in a

sample metropolitan area: San Francisco-Oakland.

Figure 2: Neighborhoods with the Highest and Lowest Levels of Racial and Ethnic Diversity
San Francisco-Oakland Metro Area



Green areas represent neighborhoods in the top fifth of all neighborhoods in racial, ethnic diversity; pink areas represent neighborhoods in the lowest fifth of all neighborhoods in racial and economic diversity in the nation.

The city of San Francisco has both high diversity and low diversity neighborhoods. The most racially and ethnically diverse neighborhoods are found in Oakland and other East Bay suburbs. The area with the least racial/ethnic diversity is Marin County.

Geographic Patterns of Income Diversity

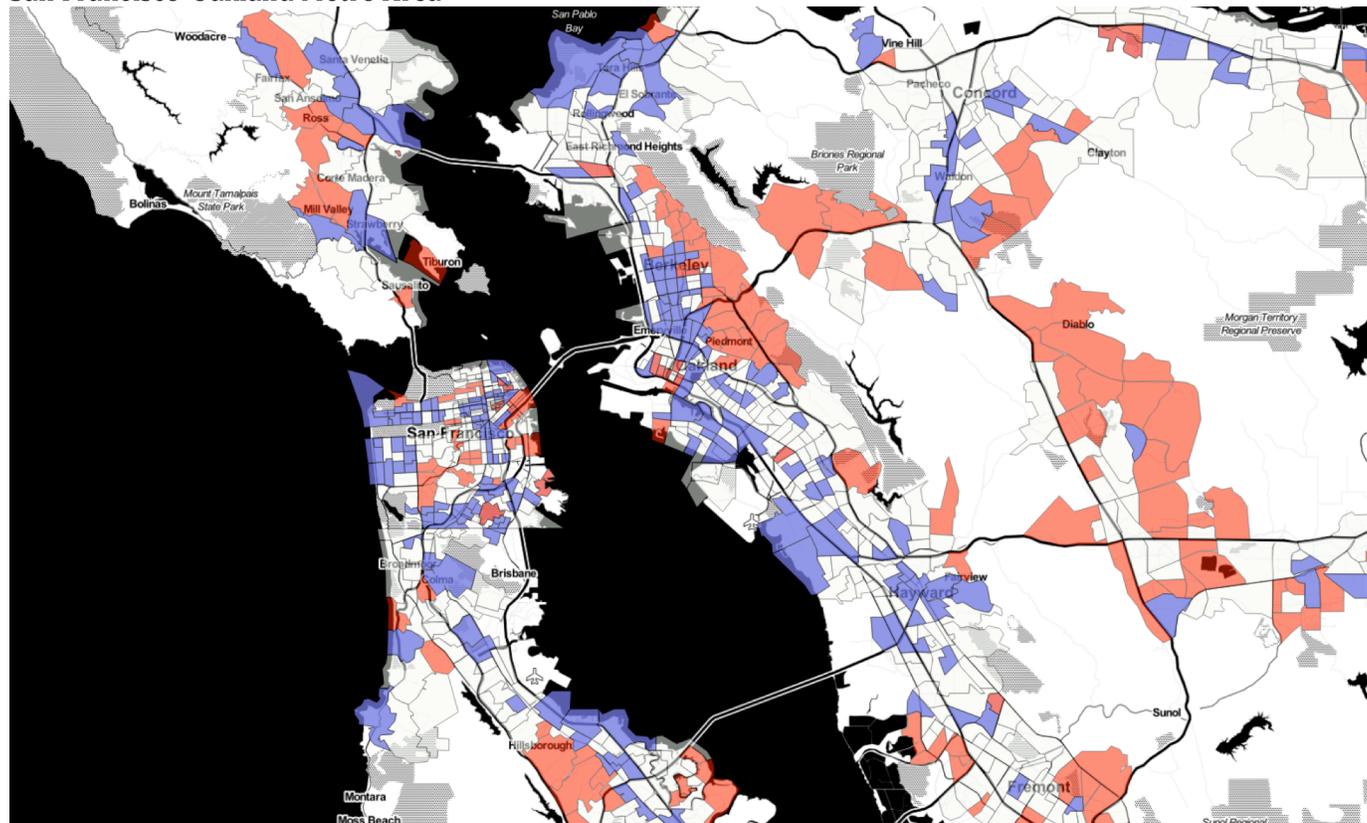
Similarly, we looked at the patterns of income diversity in metropolitan areas using the same technique. We used our data on income diversity to

identify the neighborhoods with highest and lowest levels of income diversity.

It is helpful to remember that while high-diversity neighborhoods have a diverse mix of representation, low-diversity neighborhoods can be either low-income neighborhoods or high-income neighborhoods. Clusters of high-income neighborhoods often represent what some real estate professionals call the “favored quarter.” At the other end of the spectrum are neighborhoods of concentrated poverty, where a large fraction of households lives below the poverty line.

The following map (Figure 3) shows the neighborhoods with the highest and lowest levels of income diversity in the San Francisco-Oakland metropolitan area. The areas with the highest income diversity are shaded blue; the areas with the lowest

Figure 3: Neighborhoods with Highest and Lowest Levels of Income Diversity, San Francisco-Oakland Metro Area



income diversity are shaded red. High- and low-diversity neighborhoods are widely scattered in the region; low-diversity neighborhoods are predominantly higher income neighborhoods on the Peninsula and in the East Bay.

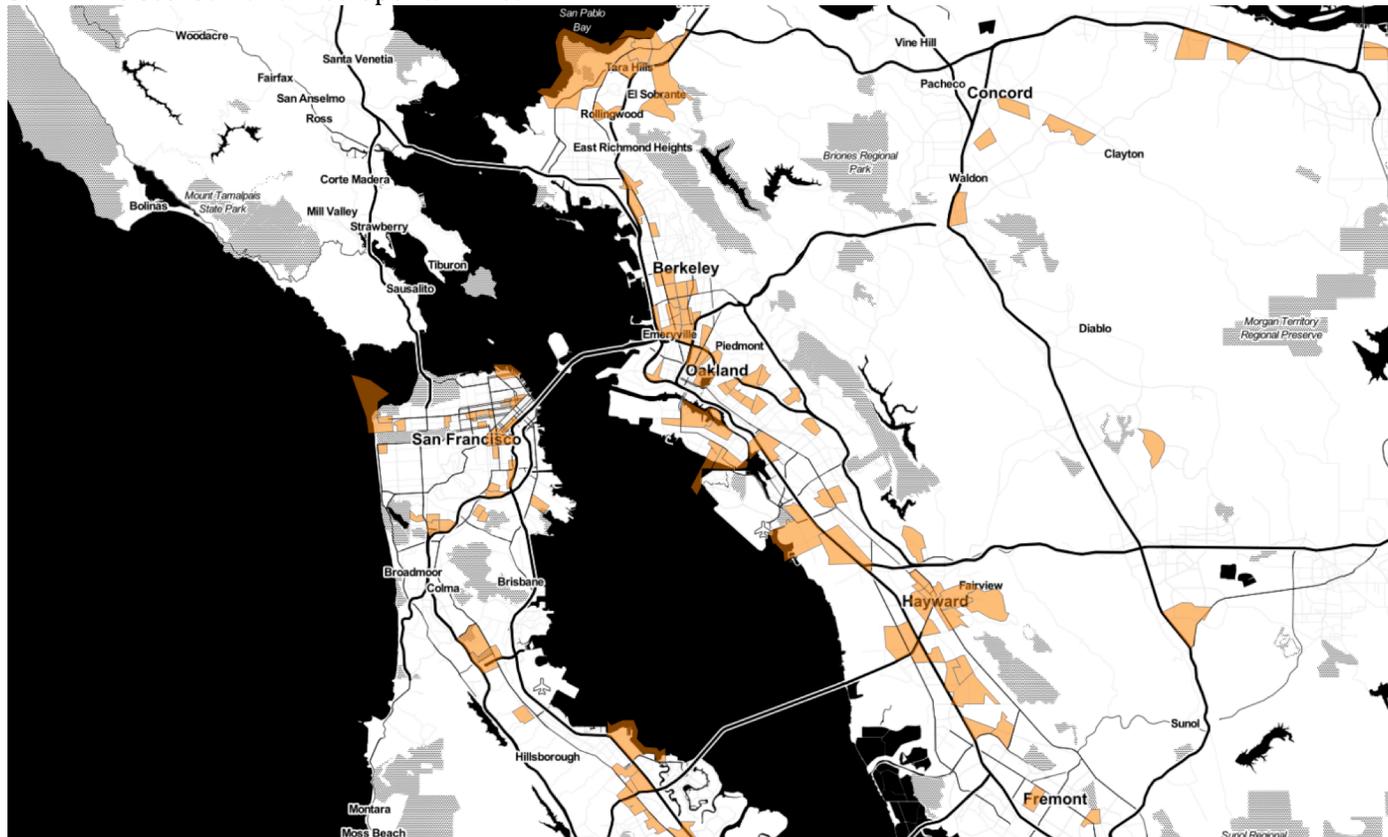
Geographic Patterns of Diverse, Mixed income Neighborhoods

We combine our data on racial/ethnic diversity and income diversity to identify the most diverse, inclusive neighborhoods in each metropolitan area. Highly diverse neighborhoods are those that are in the top 20 percent of all neighborhoods in nation for both racial/ethnic diversity and also for income diversity.

Figure 4 shows a map of the most diverse, mixed income neighborhoods in the San Francisco-Oakland metropolitan area. These areas are shaded orange in the map. The most diverse, mixed income neighborhoods are found throughout the region, both in close in urban neighborhoods in San Francisco and Oakland, in first tier suburbs like Hayward and Richmond, and in some more distant suburbs like Concord. Only Marin County seems to have almost no nationally diverse, mixed income neighborhoods.

All of the tracts shaded in Figure 4 have both a REDI score and an IDI score in the top 20 percent of all areas in United States.

Figure 4: Neighborhoods with Highest and Lowest Levels of Income Diversity and Racial and Ethnic Diversity, San Francisco-Oakland Metropolitan Area



We have prepared similar maps for each of the 52 largest metropolitan areas in the United States. They

are available at www.CityObservatory.org/maps/ADMIN.

Conclusion

This report explores the geography of diversity in U.S. metropolitan areas in two key dimensions: race/ethnicity and income. We show that about 7 million Americans now live in urban neighborhoods with nationally high levels of racial/ethnic and income diversity.

The share of diverse, mixed income neighborhoods varies widely among U.S. metropolitan areas. The best performers have a seventh of their population in such neighborhoods. Only a few metropolitan areas have no diverse mixed income neighborhoods.

Three large metropolitan areas—New York, Los Angeles, and San Francisco—account for a majority of all the diverse, mixed income neighborhoods in U.S. metropolitan areas. Roughly half (3.3 million of 6.7 million total) of urban Americans living in the most diverse, mixed income neighborhoods live in these three metros.

The overall race and ethnicity of a metropolitan area is a key determinant of what fraction of the metropolitan area's population lives in a diverse, mixed income neighborhood. Metropolitan areas with limited racial and ethnic diversity can't have

many diverse, mixed income neighborhoods. Controlling for this factor, some metropolitan areas perform much better than others – that is, have higher fractions of their population living in more diverse neighborhoods than one would expect, given the composition of the regional population. Local patterns of development and segregation play key roles in determining whether the lived experience of diversity in the typical neighborhood reflects the overall diversity of the metropolitan area.

Some cities are high performers, with levels of diversity in their typical neighborhoods that closely resemble the overall diversity of the metropolitan area. San Francisco, New York, San Jose and Los Angeles have high levels of neighborhood diversity, relative to their metropolitan diversity. In other cities, the lived experience in the typical neighborhood is far less diverse than one would expect given the typical relationship between metropolitan and neighborhood diversity. Among the lowest performers, relative to their metropolitan diversity are Las Vegas, Richmond and Memphis.

Technical Appendix

Data for this report is drawn from the Census Bureau's American Community Survey. We use the most geographically detailed data available: Census tract tabulations created by aggregating data from five years of surveys covering the years 2011 through 2015.

Our analysis focuses on the 52 most populous metropolitan areas in the United States, all those with a 2010 population of 1 million or more. Within these metropolitan areas, we examine only those areas with a population density of more than 640 persons per square mile, which we regard as a minimum threshold for urbanization. Our analysis excludes from consideration those portions of metropolitan areas with lower levels of density.

Lee and co-authors have investigated the effects of using different scales and boundaries to compute segregation indices (Lee, 2016).

One of our research objectives was to minimize the effect of the modifiable areal unit problem on our estimation of segregation. The modifiable areal unit problem (MAUP) notes that making geographic comparisons with arbitrary and variably sized geographic units (like census tracts) produces results that are influenced by the size of units and

boundaries chosen. The main message from MAUP is that segregation measures that rely on racial population counts for geographic sub-areas will be sensitive to how subarea boundaries are drawn. Levels of segregation are likely to vary with subarea size (e.g. tracts versus block groups), and they may be responsive to boundary shifts, even if the number and size of sub-areas are held constant.

In the case of segregation measures, like the dissimilarity index, which is routinely calculated using census tract data, the index implicitly equates the degree of interaction within very small geographies in urban centers to the degree of interaction within much larger geographies in suburbs.

To ameliorate this problem, we employ a different technique for estimating the racial/ethnic and income composition that characterizes interactions in small census tracts. We look to see whether a 1200-meter radius drawn from the center of a census tract intersects with any other adjacent census tracts. (For reference, 1200 meters is about three-quarters of a mile, the distance that a typical adult can walk in about 15 minutes). If it does, we re-estimate the average racial/ethnic and income composition of the tract in question to reflect the area-weighted sum of

the composition of the tracts included within the 1200-meter radius.

This technique has the effect of averaging values for small census tracts with their near geographic neighbors and has no effect on large census tracts. If adjacent census tracts have a similar racial/ethnic or income composition as the census tract we are studying, this adjustment does not affect its estimated composition. Our adjustment only affects estimated values for small tracts that are adjacent to other tracts with a markedly different racial/ethnic or income composition. From the standpoint of determining whether an area is relatively diverse, compared to the geography of larger census tracts, this is exactly the adjustment we want to make.

While the use of census tracts as *de facto* boundaries for neighborhood-level analysis is widespread, we think it is especially problematic for making within-

metro-area comparisons of diversity. Relying on census tract boundaries necessarily implies that the relevant physical size of neighborhoods is much smaller in cities than it is in suburbs—that the physical area we use to treat two persons or households as neighbors should be very small in cities and very much larger in suburbs. In a dense urban area, a census tract might consist of just a few blocks, whereas in a suburban area, a census tract might consist of five or 10 square miles. We use equal-sized areas for all of our comparisons. The choice of 1.75 square miles as our size of analysis is arbitrary, but within the range of the size and density of census tracts when averaged across a metropolitan area. As a result, our radius encompasses all or parts of two to five census tracts in dense urban areas, but might only encompass one-half or one-third of a census tract in a more suburban area.

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