

Racial Diversity and Segregation: Comparing Principal Cities, Inner-Ring Suburbs, Outlying Suburbs, and the Suburban Fringe



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This article uses 2020 Census data to document recent trends in suburbanization, ethnoracial diversity, and residential segregation in the United States. It considers variation across inner-ring suburbs, outlying suburbs, and exurban areas at the metropolitan (metro) fringe. Suburbanization has recently continued, albeit more slowly than the 1990s and 2000s. Nearly two-thirds of all metro residents now live in the suburbs, fueled by change among ethnoracial minorities. For the first time, a majority of metro Blacks reside in suburbs. America's suburbs, especially inner-ring suburbs, have experienced extraordinary increases in racial diversity. Declines continue in metro segregation, and segregation remains lower in the suburbs than principal cities, especially in outlying and fringe areas. For suburban Asians and Hispanics, however, exposure to Whites has declined since 1990. The suburban fringe remains the least diverse component of metro America. The fringe is less segregated than other metro areas, but has experienced patterns (such as growing Black-White segregation) contrary to national trends.

Keywords: suburbs, exurbs, segregation, diversity, race

America's suburbs are on the frontline of racial and ethnic neighborhood change. Yet suburbs are typically treated as a monolith ("Chocolate Cities, Vanilla Suburbs"), as a safe haven from big city crime, congestion, and urban blight (Farley 2021; Lewis-McCoy et al. 2023). Suburbs symbolize the achievement of the so-called American Dream, a platform for gaining access

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to good schools, affordable housing, and high-earning jobs (Alba and Logan 1991; Lacy 2016; Lung-Amam 2023). Today, the conventional view may no longer apply. Whites are emptying out of diversifying inner-ring suburbs (Kye 2018; Parisi, Lichter, and Taquino 2019). Some have left for big-city neighborhoods, which have rebounded from widespread depopulation, urban blight, racial unrest, and high crime rates during the 1960s and 1970s (Hwang and Lin 2016). Many more have moved even farther from the metropolitan (metro) core, joining affluent, predominantly White neighborhoods and unincorporated developments with family-friendly housing and lower property taxes. All the while, urban growth has spilled over into the metro fringe, incorporating rural people, small towns, and land area. America's changing suburbs are racially differentiated, increasingly fragmented, and unequal.

Our fundamental goal is to evaluate whether growing ethnoracial diversity in metro areas has translated into residential integration or to greater fragmentation across cities and suburbs. We address three specific objectives to provide up-to-date estimates of trends in suburbanization, ethnoracial diversity, and neighborhood segregation in U.S. metro areas. First, we document shifts in the pace of suburbanization between the 1990 and 2020 Censuses. We develop a new typology of racially fragmented suburbs that places the spotlight on inner-ring and outlying suburbs, as well as the suburban fringe—variously called exurbia, urban sprawl, or peri-urban areas. The fringe is where rural and urban populations intersect, racial politics are often contentious, and cultural values collide (Lichter, Brown, and Parisi 2021; Nevarez and Simons 2020). Second, we produce updated national estimates of racial and ethnic diversity, as measured by Simpson's Diversity Index, over the past three decades. We show that unprecedented racial diversity in the nation's largest metro areas is the result of racially heterogeneous population changes in cities and across different types of suburbs. Third, we document post-1990 trends in racial and ethnic segregation within and between the nation's cities and suburbs. Even as diversity has accelerated and segregation has presumably declined in cities and inner-ring suburbs (Frey

2013; Steele et al. 2022), patterns in outlying suburban and fringe areas are both ambiguous and poorly documented. Indeed, we find considerable variation in the pace, and in some cases direction, of racial change and segregation across the metro landscape. Ongoing demographic change and spatial restructuring mean that analyses of suburban segregation require a temporally explicit, spatially granular theoretical and empirical approach. Such is our purpose.

Our study makes several specific contributions. First, we draw on recently released tract-level data from the 2020 Census. Second, we present a new typology of suburban America that recognizes nonmetro-to-metro reclassification as an important but unappreciated engine of suburban growth, racial diversity, and segregation. Third, we make key analytical assumptions, such as regarding weighting and defining the metro and suburban universes, transparent. Last, we supplement our national estimates of suburbanization, diversity, and segregation with local-area estimates contrasting heavily populated or outward expanding metro areas (such as Atlanta) with older post-industrial metro areas (such as St. Louis) that have experienced exceptional racial change and, in some cases, massive depopulation at the core.

BACKGROUND

Much of the current literature on suburbs has been inwardly focused and framed in relationship to the urban core. Yet today only about 30 percent of all Americans—and an even smaller share of White Americans—live in the principal cities of metropolitan statistical areas (MSAs) (Gibson 2010). Cities and suburbs nevertheless represent flip sides of the same metro coin. Many of the nation's major cities—Chicago and St. Louis—have experienced depopulation over the last half century. For example, the population of St. Louis peaked at 857,000 in 1950 and has declined each decade thereafter. The 2020 Census revealed a population of almost three hundred thousand. The broader St. Louis metro area nevertheless continues to grow, its population topping 2.8 million in 2020. It is in suburbia where most metro growth and change has occurred (Frey

2013).¹ The implication is clear: suburbanization, including exurban growth at the fringe, is now driving overall changes in racial residential segregation in metro areas. America is at a demographic transition point, with suburbs leading the way.

Metropolitan Diversity and Suburban Segregation

Douglas Massey and Jonathan Tannen (2018) document the extraordinary suburbanization of the U.S. population over the past half century. They show that the share of the U.S. metro population living in suburban counties increased from 45.2 to 55.4 percent between 1970 and 2010. For the White population, the suburban percentages increased from 49.1 to 63.1 percent and the share of Black metro residents living in the suburbs grew even more rapidly, from 18.2 to 39.9 percent. The growing Black population produced an uptick in racial diversity across America’s “melting pot suburbs” (Frey 2013), which were located mostly in inner-ring settlements around urban cores. Still, nearly 70 percent of America’s suburban population overall remained non-Hispanic White in 2010, albeit down significantly from 92.5 percent in 1970 (Massey and Tannen 2018). However, as we show in this article, averages mask extraordinary variation across cities and different types of suburbs.

Changes in racial residential segregation have also been characterized by spatial heterogeneity within MSAs. In 1970, Black-White residential segregation was substantially higher in metro core counties—those containing principal cities—than in suburban counties. According to Massey and Tannen (2018), Black-White segregation, using the Index of Dissimilarity, in 1970 was 65.1 in the suburbs compared with 77.5 in central cities.² By 2010, Black-White segregation in both the suburbs and principal cities declined and converged (53.4 in the suburbs and 60.4 in central cities). Hispanic-White and Asian-White segregation in both the cities and

suburbs has remained relatively constant between 1970 and 2010. Perhaps even more interesting is that the Hispanic-White Isolation Index increased in the suburbs from 19.3 to 42.8 between 1970 and 2010. This means that Hispanics, on average, lived in suburban neighborhoods that were 42.8 percent Hispanic in 2010, more than twice the average in 1970. Increases in Hispanic-White isolation in the suburbs contrast with the little change or even slight declines in suburban isolation among their Black (40.8 in 1970 to 36.5 in 2010) and Asian counterparts (23.6 to 20.8 from 1970 to 2010). Hispanics are suburbanizing, but seemingly in the form of new ethnoburbs lying outside the metro core. New data from the 2020 Census reveal continuing declines in racial segregation in America’s metro areas (Logan and Stults 2021). However, how these changes have played out across different parts of U.S. metro areas, and how they correspond to changes in diversity, remain open and important questions.

Reevaluating the “American Dream”

Residential segregation is the “linchpin” of America’s stratification system (Krysan and Crowder 2017; Massey 2020). Downward shifts in residential segregation may portend widespread racial residential integration, perhaps even an “end of the segregated century” (Glaeser and Vigdor 2012). However, whether suburbanization today remains a marker of upward social mobility and racial integration is unclear. Suburban segregation has in fact stagnated or drifted upward (Fischer 2008) even as metropolitan segregation overall has declined over recent decades. Whites have increasingly left diversifying inner-ring suburban neighborhoods for predominantly White suburban fringe communities or have returned to neighborhoods in the metro core (Parisi, Lichter, and Taquino 2019; Timberland and Howell 2022). America’s burgeoning suburbs are in demographic flux (Lewis-McCoy et al. 2023).

Indeed, scholars have increasingly debated

1. Perhaps paradoxically, the majority (roughly 54 percent) of all rural people—those living in the open countryside or in small towns—live in metro counties, mostly in newly defined metro counties located in outlying peripheral areas (Lichter, Brown, and Parisi 2021; National Academies of Sciences, Engineering, and Medicine 2016).

2. This means that 65.1 percent of metropolitan Blacks (or Whites) would have to move to another census tract to achieve parity in the distribution of Blacks and Whites across all metropolitan areas.

the conventional wisdom—one that emphasizes increasing spatial integration of racial and ethnic minorities (Hwang and McDaniel 2022). Stephen Menendian and colleagues (2021, 4) claim that conventional approaches “are no longer capable of helping us gauge the extent of segregation in an increasingly diverse and multi-racial society.” Recent studies have focused on, first, the changing spatial scale of racial segregation (Lee et al. 2008; Lichter, Parisi, and Taquino 2015a); second, wide disparities from study to study in the universe of metro regions, counties, and places (Massey and Tannen 2018; Wright et al. 2014); and, third, appropriate weighting of different racial and spatial categories, that is, whether national figures represent averages of metro areas or averages of different metro populations (Iceland and Sharp 2013; Lichter, Parisi, and Taquino 2015b). Each issue poses analytic and interpretative challenges for research on changing patterns of segregation in cities and suburbs.

First, most studies of neighborhood segregation are based on census tracts, but racial residential segregation occurs at many different spatial scales, from regions to census blocks (Parisi, Lichter and Taquino 2011; Wright et al. 2014). Additionally, tracts are usually larger in territorial size in less densely settled suburban areas than central cities, with tracts in formerly nonmetro counties at the suburban fringe typically the largest. These differences matter because residential segregation is inversely associated with the territorial size of spatial units (Hennerdal and Nielsen 2017; Lee et al. 2008). As such, neighborhoods are likely, quite mechanically, to have lower measured levels of racial segregation as urban development radiates outward from the metro core to older suburbs and beyond.³

Second, national-level estimates of metro segregation overall, and especially segregation in more racially homogenous suburban areas,

are influenced by the number and population sizes of the metro areas included in the study. For example, Massey and Tannen (2018) examine 287 “consistently defined” metro areas “for which data on Asians, Hispanics, and African-Americans were available at all dates” (1594). This approach contrasts with John Logan and Brian Stults’ (2021) national estimates from the 2020 Census focused on more than four hundred currently designated metro areas. Another study, based on the 1990, 2000, and 2010 Censuses, provided estimates of segregation based on the largest forty-three MSAs with populations of more than one million (Wright et al. 2014). This approach is quite unlike that of John Iceland and Greg Sharp’s study (2013), which used different numbers of MSAs (between 333 and 366) over the 1980 to 2010 period and for comparisons across racial groups. The implication is that declines in metro segregation may be a methodological artifact, driven in part by adding newer and comparatively smaller and less segregated metro areas to the universe.

Third, national trends in diversity and segregation are affected by different weighting practices, such as whether each metro-specific estimate of segregation is weighted equally to reflect the average experience of America’s metro areas (Menendian, Gailles, and Gambhir 2021) or instead is weighted by the size of the metro population or the ethnoracial group under consideration (Logan and Stults 2021). The latter two approaches have the benefit of highlighting the average experience of metro residents overall or by group rather than the average across metro areas of widely different population sizes.

These interpretive challenges are further compounded by the use of county-based definitions of metro areas, which vary in territorial size and are subject to substantial change over time. Results from some segregation studies

3. In response, recent studies have defined segregation using smaller spatial units (such as blocks) or have adopted multiscale approaches that nest different-sized units of geography, one within another (Lichter, Parisi, and Taquino 2015a; Fowler, Lee, and Matthews 2016). Other studies compare segregation using different scales, based on the number of nearby neighbors or on the distance from specific focal units, such as housing units, blocks, or census tracts (Lee et al. 2008; Östh, Clark, and Malmberg 2015). These measures have their own problems, such as dealing with natural (rivers or mountains) and man-made barriers (highways) that restrict social interaction among different racial groups (Roberto and Korver-Glenn 2021).

are based on a fixed universe of MSAs and constituent metro counties defined at the baseline (see, for example, Rugh and Massey 2014). Estimates of metro segregation, however, may be influenced by the reclassification of rapidly growing nonmetro counties into the metro universe, either as entirely new MSAs or as new suburban fringe areas (Johnson and Lichter 2020). If the universe of metro counties is defined at the beginning of the study period, then newly reclassified metro suburban counties—often predominantly White—are wrongly excluded from the analysis. Alternatively, if metro areas and their underlying counties are defined at the end of the study period, the analysis will include newly reclassified suburban counties defined by the Census Bureau as nonmetro in earlier periods, when they were more rural than urban. Attention to these shifting boundaries is important for all analyses of the metro (and nonmetro) United States, but critical for studies of the suburbs, where much recent reclassification has taken place.⁴

THIS STUDY

Our study, first and foremost, provides up-to-date estimates of suburbanization, ethnoracial diversity, and neighborhood segregation in America's MSAs, including their principal cities and suburbs, since 1990. We show that suburbanization has continued its rapid upward trajectory at the expense of principal cities over the past decade. Racial integration is reflected in the rapid suburbanization of minorities, including Black populations. In the aggregate, residents of inner-ring and outlying suburban counties were, for the first time in 2020, less likely to be exposed to neighbors of the same race than of a different race. Yet, exposure to racial diversity remains highly uneven across America's racial hierarchy, which is revealed in

newly emerging patterns of racial residential isolation and segregation—Asian and Hispanic ethnoburbs—in America's increasingly diverse but racially fragmented suburbs.

DATA AND METHODS

We use tract-level data from the newly released redistricting files from the 2020 Census, along with comparable tabulations from the 1990, 2000, and 2010 Censuses.⁵ We extract summary files using IPUMS-NHGIS (Manson et al. 2021). These data identify 100 percent population counts each decade by race and ethnicity. We use counts of all Hispanics or Latinos, regardless of race. For non-Hispanics, we distinguish among four mutuality exclusive and exhaustive race categories—White, Black, Asian, and all others, including multiracial populations—as defined by the U.S. Office of Management and Budget (OMB).

Our analyses are based on three hundred MSAs identified by the OMB in 1993. We nest our tract-level data within counties, which are the building blocks of all metro areas. MSAs include all territory and population within counties that either contain a core urbanized population of fifty thousand or more or are integrated with core counties by commuting flows. MSAs are excluded if they transitioned back to nonmetro status after 1990 or were newly designated after 1993.⁶

Typology

Our typology of principal cities and suburban areas is constructed on the basis of census tracts, which are viewed as proxies for neighborhoods (Hanlon 2009). We distinguish between census tracts located in principal cities and those located in all other areas (suburban areas) within MSAs. Specifically, we use GIS to overlay the boundaries of principal cities, de-

4. Despite being commonly overlooked or ignored, this issue is not arcane. Kenneth Johnson and Daniel Lichter (2020) show that 753 nonmetro counties were redefined as metro by the Office of Management and Budget between 1960 and 2017. Reclassification shifted nearly seventy million nonmetro residents to the metro side of the demographic ledger, which accounted for virtually all of the increase in the metro share of the U.S. population.

5. For the 2020 Census tabulations, the Census Bureau introduced a new disclosure avoidance technique to protect privacy. Known as differential privacy, this technique injects “noise” into the tabulations for specific areal units (such as individual tracts or racial groups) but seems unlikely to alter estimates of diversity or segregation for highly aggregated metro data such as ours (for a discussion of the issue, see Asquith et al. 2022).

6. These restrictions exclude only 3.3 percent of the 2020 metro population.

fined in 1993, on our tract-level data for each metro area. Constant principal city boundaries ensure that suburban areas and populations cannot be redefined as principal cities during the study period.⁷

Although the universe of MSAs is defined in 1993 (based on 1990 Census results), we use the most recent boundaries of each unit to account for the addition of new counties and constituent census tracts at the metro fringe due to reclassification.⁸ For our analysis, we identify 1,034 consistently defined metro counties based on the 2013 OMB update from the 2010 Census.⁹ Overall, 326 nonmetro counties were newly reclassified as metro counties between 1993 and 2013, 239 of them to become part of existing MSAs. For a summary of the number of MSAs, variously defined, along with the numbers of counties, tracts, and total population, see table A.1.

Our typology of suburban areas includes inner-ring suburbs, outlying suburbs, and fringe suburbs. We define inner-ring suburbs as the census tracts lying outside of principal cities but within counties that contain principal cities (core counties). The inner suburbs represent the built-up areas in close proximity to principal cities. The outlying suburbs are made up of tracts located outside the inner ring and that were defined as metro in 1993 or earlier. These suburbs are “mature” or older but removed spatially from principal cities (Hanlon 2009). Outlying suburbs are distinguished here from suburban fringe neighborhoods. We define the latter as tracts within counties that

were reclassified from nonmetro to metro status after 1990. These newly added exurban neighborhoods are sometimes excluded from previous studies of segregation.

Measurement

Our analyses focus on three sets of outcomes: suburbanization, ethnoracial diversity, and segregation. Suburbanization is measured by the share of the metro population living in suburban tracts outside principal cities (Massey and Tannen 2018). Shares of suburban population are further disaggregated by race, which highlights racial variation in suburbanization since 1990.

Ethnoracial diversity is operationalized using the Simpson’s Diversity Index (*SDI*) (Simpson 1949; see Steele et al. 2022, for discussion of measurement). The *SDI* captures the likelihood that any two randomly selected residents located in the same area (for example, MSA, suburban fringe) will be from different ethnoracial groups. Using the defined five-group ethnoracial typology, *SDI* ranges from 0 to 0.8.¹⁰ If all persons from each of the five groups lived separately in their own racially homogenous tracts, the metro *SDI* index would be 0. An index value of 0.8 indicates maximum diversity, with each tract containing racial population shares that were exactly equal (Johnson and Lichter 2010).

Racial segregation is measured using the Index of Dissimilarity (*D*) and the Exposure Index (*E*). *D* is interpreted as the share of a group (such as the Black population) that would need to change neighborhoods to achieve the same

7. The boundaries of tracts and principal cities only match exactly when the years of the census data and delineations match (for example, when 1993 delineations are matched to 1990 Census data). We reconcile differences in boundaries for other years by defining any tract that falls, in whole or in part, within the boundaries of a principal city as such.

8. Our analyses reveal 302 principal cities in 1990. However, several metro counties without principal cities in 1990 split off from an existing MSA by 2020, and other MSAs were merged together. Coincidentally, the number of MSAs that split into two was identical to the number of metros that merged. Conceptually, new MSAs drawn from other existing MSAs are treated as a type of suburbanization.

9. To evaluate the sensitivity of our results to changes since 1990 in the universe of metro counties, preliminary analyses compared our results to results based on 795 metro counties defined by OMB in 1993 on the basis of the 1990 Census. These results are available on request.

10. Simpson’s Diversity Index is defined as

$$SDI = 1 - \left(\frac{\sum n_i(n_i - 1)}{N(N - 1)} \right)$$

where n_i is the population for racial group i and N is the total population.

distribution as another group (such as Whites) across the spatial unit of interest (such as MSAs, principal cities, or types of suburb).¹¹ For example, John Logan and Brian Stults (2021) report a Black-White D of 55 in 2020 for U.S. MSAs. This figure implies that 55 percent of Black (or White) residents would have to move to another census tract for their populations to be similarly distributed over all census tracts in the MSA.

We also estimate the Exposure Index (E) to capture the exposure of each ethnoracial group to the White population.¹² For each major minority group considered here, E indicates the average White population share in the neighborhood. For example, a Black-White E of 40 indicates that Black metro residents, on average, live in a neighborhood that is 40 percent White. For comparative purposes, we also estimate the White–non-White E , which indicates the average minority share of the neighborhoods where Whites live.

Our national estimates are weighted to reflect the residential circumstances of the average resident and, for some analyses, the average resident from a specific ethnoracial group or spatial unit (for example, suburbs, central

cities). By definition, more heavily populated MSAs account for a larger share of the U.S. metro population and, as a result, contribute disproportionately to estimates of suburbanization, diversity, and segregation. We also weight race-specific MSA-level estimates by the share of each racial minority's total metro population residing in a particular MSA.¹³ In the case of White segregation from non-Whites, our estimates are weighted by White shares living in each MSA, following the approach of John Iceland and Greg Sharp (2013). A similar weighting scheme is applied when examining differences across principal cities, inner-ring and outlying suburbs, and fringe areas. That is, we weight national sub-MSA-level estimates by the share of the total U.S. population in a given MSA component (such as the U.S. suburban population) that resides in such places within a given MSA (such as the Atlanta suburbs).¹⁴

Finally, we draw on five case studies to illustrate the generality of our empirical approach and findings (figure 1). We compare three of America's most heavily populated metro areas (New York, Chicago, and Houston)¹⁵ and two additional metro areas with histories of extraordinary inner-city racial change and either

11. The Index of Dissimilarity (D) is defined as

$$D = \frac{1}{2} \sum_{i=1}^n \left| \frac{a_i}{A_r} - \frac{b_i}{B_r} \right|$$

where a_i and b_i capture the respective populations of groups a and b in subunit i (for example, tract i) and A_r and B_r capture the total populations of groups a and b in a given unit (such as an MSA).

12. The Exposure Index (E) measures exposure of one racial group to a different racial group defined as

$$E = \sum_{i=1}^n \left(\frac{n_{ia}}{A_r} \right) \left(\frac{n_{ib}}{n_i} \right)$$

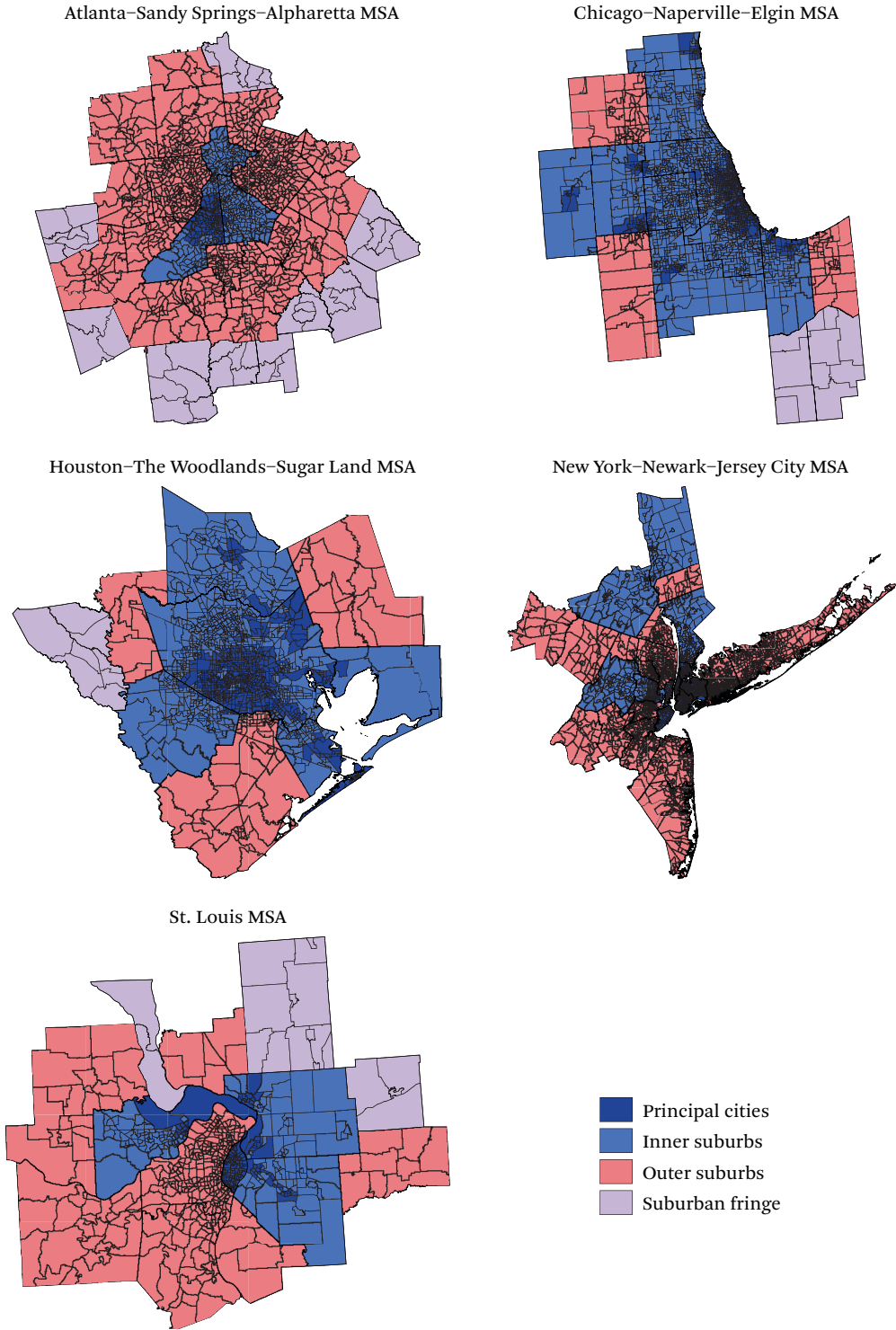
where n_{ia} and n_{ib} respectively capture the populations of groups a and b in a given subunit (such as tract i). A_r captures the total population of group a in the unit of interest (such as an MSA) and n_i captures the total population in a given subunit.

13. Race-specific metro estimates are weighted in proportion to the relative size of each racial group across MSAs. For example, we provide national race-specific estimates of Black-White segregation among the nation's Black population by giving greater weight to MSAs with the largest African American populations (see Logan and Stults 2021).

14. This empirical approach provides national estimates of suburbanization, diversity, and segregation for the nation's principal cities and suburban components, giving greater proportionate weight to components of particular MSAs that are larger in population (or minority population) size. Similarly, we estimate the average experiences of persons of a specific race rather than the average conditions of specific areas (such as principal cities) across the nation's metro areas.

15. We also initially considered Los Angeles as a case study, but its unique makeup of only two counties, and having no outlying or fringe suburbs, made it an outlier. In contrast, Atlanta is made up of more than a dozen much smaller counties, including nine "new" fringe counties added after the 1990 Census enumeration.

Figure 1. Typology of Cities and Suburbs, by MSA and Census Tract



Source: Authors' tabulation.

population decline (St. Louis) or explosive population growth, especially in suburbia and the fringe (Atlanta). The Atlanta MSA's population, for example, increased by 15.2 percent between 2010 and 2020, while the St. Louis MSA's hardly grew at all (that is, less than 2 percent over the past decade). The territorial size, morphology, and functional specialization of these metropolitan areas are very different.

RESULTS

We document the changing trajectories of suburbanization of White and minority populations since 1990. We then turn to issues of growing racial diversity and segregation across America's highly differentiated cities and suburbs, followed by presentation of metro case studies that highlight the generality of national patterns.

Suburbanization

We begin by estimating the changing share of the U.S. metro population, overall and by ethnoracial group, that resides in the suburbs. These estimates are provided in figure 2 (see also table 1 in the online appendix).¹⁶ We find that the suburban population share increased by 6.9 percentage points between 1990 and 2020, from 59.1 to 66.0 percent. Most of these increases occurred between 1990 and 2010, when suburbanization increased by 5.4 percentage points. This change corresponds to a faster decadal rate of increase than the 1.5 percentage points between 2010 and 2020. Suburbanization has noticeably slowed over the past decade.

Although the share of the U.S. metro population living in the suburbs increased substantially between 1990 and 2020, the distribution of the suburban population across the inner ring, outlying suburbs, and the suburban fringe has remained relatively stable. In 1990, 64.3 percent of the suburban population resided in inner-ring suburbs, 31.6 percent in the outlying suburbs and just 4.2 percent in the suburban fringe. Changes through 2020 were only modest, showing a slight shift toward the inner-ring suburbs, where 66.1 percent of the suburban population now resides. The share in the outly-

ing suburbs declined by 1.2 percentage points to 30.4 percent and the share in the suburban fringe declined from 4.2 to 3.5 percent.

We also examine suburbanization among different ethnoracial groups. Nearly three-quarters (73.1 percent) of the non-Hispanic White population lived in suburban areas in 2020. These figures contrast with comparatively low but rapidly increasing rates among ethnoracial minorities, especially among Black metro residents. The Black suburban population exceeded 50 percent (51.1 percent) for the first time in 2020. Although this population was least suburbanized, it experienced a 17.2 percentage point increase in the share suburban, which was the largest of any ethnoracial group. For the Hispanic population, the increase over the study period was 13.7 percentage points (from 44.1 percent to 57.8 percent); and for the Asian population, the share living in suburban tracts increased by 13.2 percentage points, from 49.3 percent in 1990 to 62.5 percent in 2020. The suburbanization of America's racial minorities far exceeded the 7.2 percentage point increase observed for the White population.

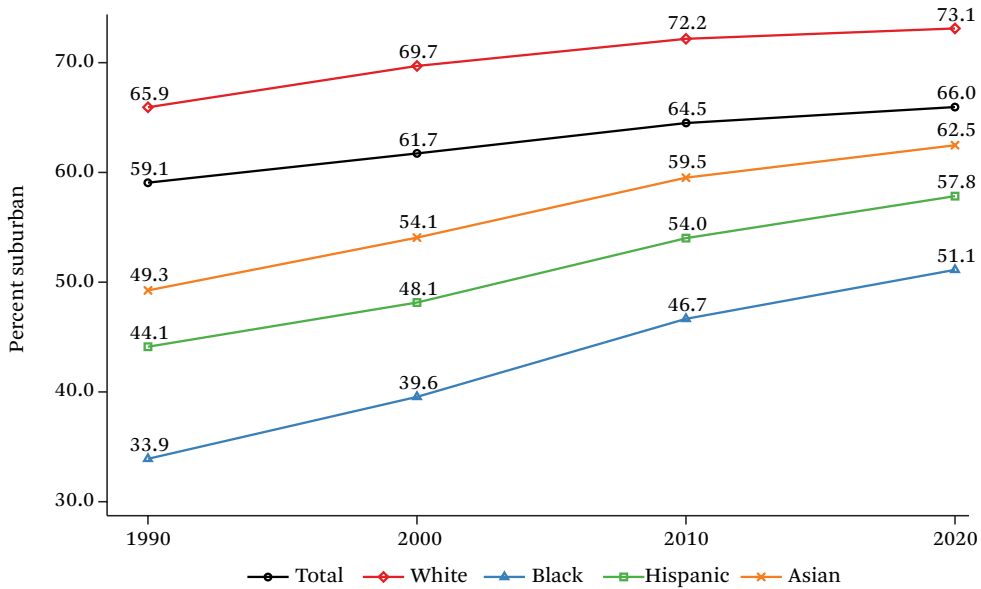
Ethnoracial Diversity

That the suburbanization of racial minorities is transforming America's suburbs is confirmed in figure 3 (for complete results, see online appendix table 2). We find clear evidence of growing diversity in MSAs, albeit with notable differences in the pace of change within the different components of MSAs considered here. The overall population-weighted average of *SDIs* across the three hundred MSAs in our analytic sample increased from 38.8 in 1990 to 57.2 in 2020. By 2020, the average metro resident—of any race and in any part of an MSA—lived in an MSA where the majority of coresidents were from a race or ethnicity other than their own. These increases represent a nearly 50 percent uptick from 1990, a remarkable change in just three decades. The 2020 Census clearly indicates that the so-called diversity explosion has continued apace over the past decade (Frey 2013).

Growing racial diversity in America's sub-

16. For the online appendix, see <https://www.rsfjournal.org/content/9/1/26/tab-supplemental>.

Figure 2. Percentage of MSA Residents in Suburban Tracts, by Race



Source: Authors' tabulation.

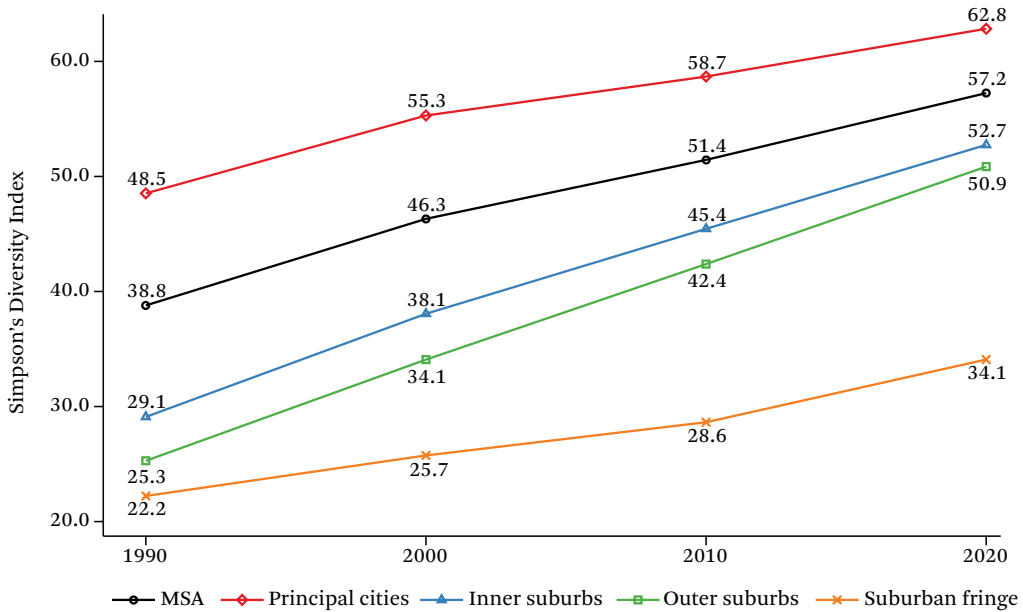
Note: Estimates weighted by the share of each group's metropolitan population in each MSA.

urbs seems self-evident, yet exposure to diversity is much lower among Whites than minority populations. Our analysis (table A.2) shows that, overall, the Asian metro population is most exposed to diversity: Asian metro residents lived in MSAs with, on average, an *SDI* of 63.5 in 2020, up approximately 28.5 percent from 49.4 in 1990. The Hispanic metro population is exposed to the second-highest levels of diversity, with an *SDI* of 61.1 in 2020 (up from 51.0 in 1990); followed by the Black metro population, whose average member lives in an MSA with an *SDI* of 60.2 (up from 43.7 in 1990). White metro residents are least exposed to multiracial diversity. The *SDI* of the average White metro resident's MSA in 2020 was 54.3. Still, this figure is substantially higher—by almost 52 percent—in 2020 than in 1990, when it was just 35.8.

Figure 3 further disaggregates these trends across the different spatial components of metro areas. Today, principal cities are home to America's most diverse populations, with an *SDI* of 62.8 in 2020. If social interactions were random in principal cities, the 62.8 reported here means that nearly two-thirds of principal city residents are likely to interact with some-

one of a different race. The high level of racial diversity in principal cities was followed, in order, by successively lower diversity in inner-ring suburbs (52.7), outlying suburbs (50.9), and the suburban fringe (34.1); the population-weighted average across all suburban tracts was 51.9. In 2020, suburban fringe populations were markedly less diverse than those in the core areas of U.S. metro areas, which raises questions about whether White populations are fleeing diversifying metro areas for outlying areas. Alternatively, these data are also consistent with the emergence of racially homogenous ethnoburbs, especially if minority populations in principal cities are now being displaced by White gentrification or commercial development.

Each component of America's MSAs—principal city, inner-ring and outlying suburbs, and suburban fringe—experienced meaningful increases in ethnoracial diversity between 1990 and 2020. Large absolute and relative gains, however, were most pronounced in the suburbs. The *SDI* increased by 25.6 points in the outlying suburbs and 23.6 points in the inner-ring suburbs between 1990 and 2020, which

Figure 3. Average Simpson's Diversity Index, by Residence

Source: Authors' tabulation.

Note: Estimates weighted by the share of the U.S. metropolitan population in each MSA (MSA-wide estimates) or the U.S. MSA-component population (such as suburban fringe) in each component (component-level estimates).

represented percentage increases of approximately 101 and 81 percent over baseline levels, respectively. A smaller but still nontrivial increase occurred in principal cities, where the *SDI* increased from 48.5 to 62.8 (14.3 points, or 29.5 percent). The smallest absolute increases occurred in the suburban fringe, where there was an 11.9-point increase in the *SDI*, from 22.2 to 34.1. This modest absolute increase nevertheless represents relative growth of 53.6 percent over 1990 levels.

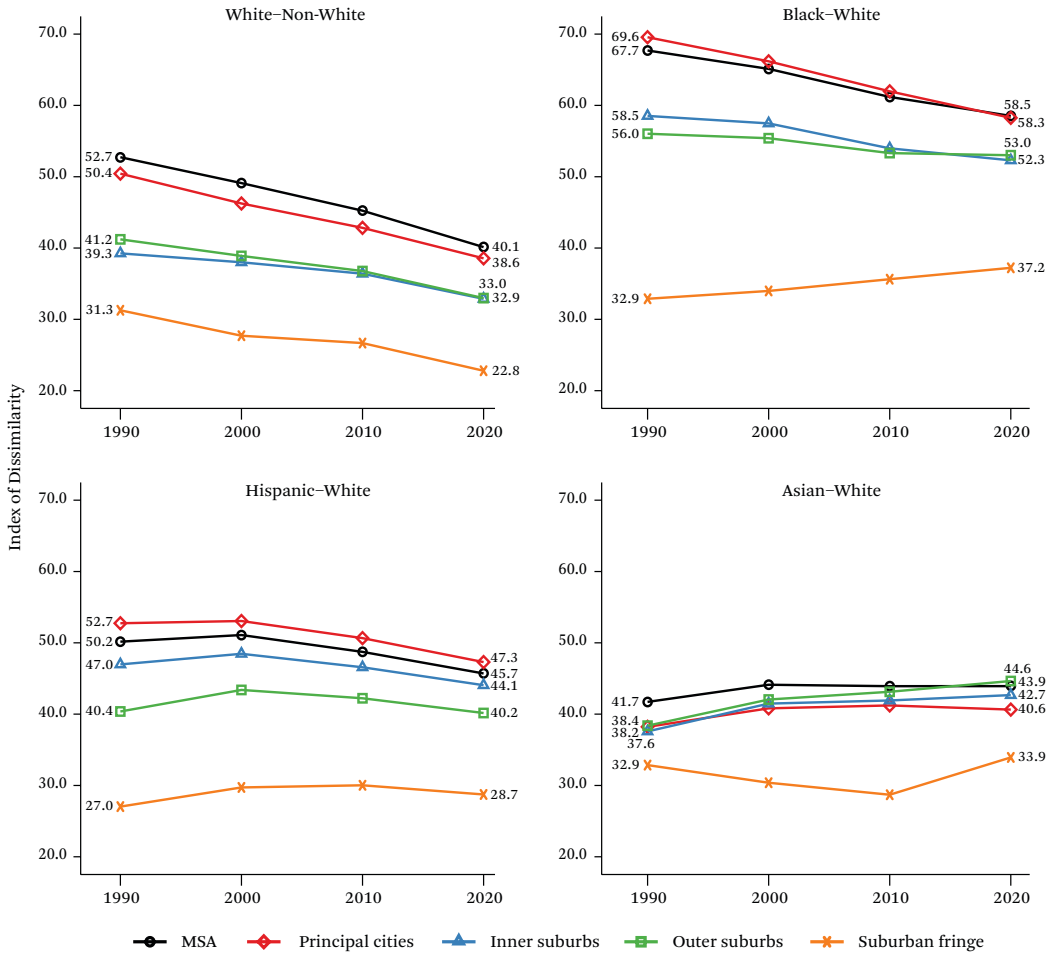
Suburban minority populations are most exposed to racial diversity, and this is true across all types of suburban neighborhoods (see online appendix table 2). For example, in the inner-ring suburbs, the population-weighted average *SDI* was 60.5 for the Asian population, 59.2 for the Hispanic population, 58.0 for the Black population, and 48.6 for the White population. Exposure to diversity was qualitatively and quantitatively similar in the outlying suburbs. The Black and Hispanic pop-

ulations were also exposed to relatively high levels of diversity in the suburban fringe, having average *SDIs* of 48.3 and 42.6, respectively, with Asian (36.1) and White (31.3) populations in the fringe living in less diverse areas. Although suburban White residents continue to live in the least diverse areas of the groups considered here, those places are nevertheless more diverse today than in the past. The *SDI* for the average White suburban resident overall increased from 25.1 in 1990 to 48.0 in 2020, an increase of nearly 23 points, or 91.2 percent.

Neighborhood Segregation and Exposure

Whether growing suburban diversity ultimately promotes spatial integration—less residential segregation and more exposure between racial groups—is an empirical question. Here we provide estimates of *D* (figure 4) and *E* (figure 5) for each racial pair of interest, within MSAs and their spatial components (for detailed results, see online appendix tables 3 and 4).

Figure 4. Average Index of Dissimilarity, by Residence and Race



Source: Authors' tabulation.

Note: Estimates weighted by the share of the reference group's metropolitan population in each MSA (MSA-wide estimates) or the reference group's MSA-component population (such as suburban fringe) in each component (component-level estimates). Reference groups are listed first in each pair.

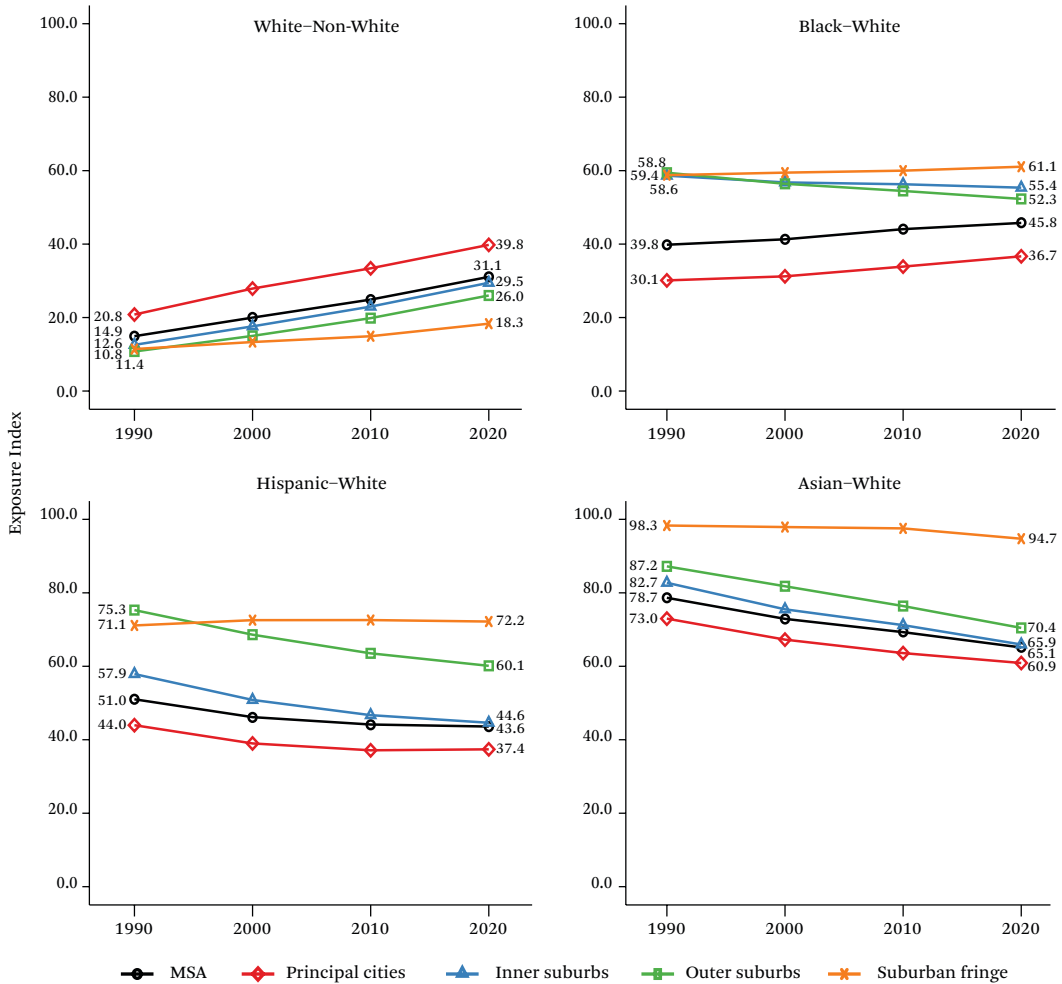
Segregation Index

Estimates of *D* are reported in figure 4 and yield four main conclusions. First, Black-White segregation was highest among our estimates of MSA-level segregation. In 2020, Black-White segregation was 58.5, which tallies with Logan and Stults's recent estimate of 55 for all MSAs, including those added after 1990. Black-White segregation was significantly higher than the 45.7 observed for Hispanic-White segregation, 43.9 for Asian-White segregation, and 40.1 for

White-non-White segregation. The exceptional levels of Black-White segregation are consistent across all four data points in our study.

Second, Black-White segregation was also highest within each of the MSA components examined here, but the levels of segregation and contrast with other groups vary by suburb type. In 2020, for example, Black-White segregation in the suburbs overall was 53.1 (online appendix table 3), only slightly lower than the

Figure 5. Average Exposure Index, by Residence and Race



Source: Authors' tabulation.

Note: Estimates weighted by the share of the reference group's metropolitan population in each MSA (MSA-wide estimates) or the reference group's MSA-component population (such as suburban fringe) in each component (component-level estimates). Reference groups are listed first in each pair.

metro-wide average of 58.5. Of course, variation was substantial by race and suburban type (figure 4). Black-White segregation in inner suburbs, for example, was 52.3, relative to 44.1 for Hispanic-White segregation and 42.7 for Asian-White segregation. White-non-White segregation was 32.9. In contrast, segregation was lowest in the suburban fringe but remained higher when comparing the residential circumstances of Black and White populations (37.2 in 2020) than any other group. In the suburban fringe, Asian-White segregation was 33.9 in 2020, fol-

lowed by Hispanic-White segregation (28.7) and White-non-White (22.8) segregation.

Third, racial residential segregation declined, on average, between 1990 and 2020 for most groups. At the MSA level, declines were largest for White-non-White segregation, which fell by 12.6 points (or 23.9 percent) from a high of 52.7 in 1990 to 40.1 in 2020. This decline was nearly matched in absolute terms by reductions in Black-White segregation of 9.2 points (13.5 percent of baseline) and a more modest reduction of 4.5 points (9.0 percent) for

Hispanic-White segregation. In contrast, Asian-White segregation increased by 2.2 points (41.7 to 43.9), or 5.3 percent over 1990 levels.

Fourth, declining patterns of segregation within MSAs as a whole since 1990 were generally also observed across the suburbs. In the inner-ring suburbs, for example, White-non-White segregation decreased by 6.4 points (16.3 percent) between 1990 and 2020, which was comparable to the 6.2-point (10.6 percent) decline in Black-White segregation during this period. Hispanic-White segregation declined by 2.9 points (6.2 percent) in the inner-ring suburbs, and Asian-White segregation increased by 5.1 points (13.6 percent). Declines in White-non-White segregation were larger in the outlying suburbs than the inner ring, at 8.2 points or 20.0 percent of 1990 levels. In contrast, declines in Black-White (3.0 points, 5.4 percent) and Hispanic-White (0.2 points, 0.5 percent) segregation were muted, and Asian-White segregation increased (6.2 points, 16.1 percent).

Changes in segregation at the suburban fringe contrasted with the changes in the more traditional inner-ring and outlying suburbs. The fringe saw increases in all but White-non-White segregation between 1990 and 2020. Indeed, Black-White segregation at the fringe increased by 4.3 points (13.1 percent), Hispanic-White segregation increased by 1.7 points (6.3 percent), and Asian-White segregation increased by 1.0 point (3.0 percent). Only White-non-White segregation declined between 1990 and 2020—and substantially at that, from 31.3 to 22.8 points (or 27.2 percent of 1990 levels). Although segregation remains lower in the fringe than other parts of MSAs, it has ticked upward among racial minorities over the past three decades.

Exposure Index

Figure 5 illustrates population-weighted estimates of the Exposure Index, which summarizes each ethnoracial group's neighborhood exposure to Whites, or to the non-White population when the White population is the reference group. Complete numerical estimates are also reported in online table 4. We again highlight four main findings. First, at the MSA level, Asian-White exposure has typically been highest among the four groups of interest. On aver-

age, Asian metro residents lived in neighborhoods that were 65.1 percent White in 2020, more than 20 points higher than for the Hispanic (43.6 in 2020) and Black (45.8) metro populations. White-non-White neighborhood exposure was only 31.1, far below the exposure to White populations among any ethnoracial minority population.

Significantly—our second main finding—changes in exposure at the MSA level have been highly uneven across racial groups. For example, Asian-White exposure unexpectedly declined by 13.6 points (17.3 percent of baseline) since 1990 and Hispanic-White exposure declined by 7.4 points (14.5 percent). As America's Hispanic and Asian populations have increased (both from new immigration and the second-order effects of fertility), their neighborhood exposure to Whites has declined. In contrast, exposure of White metro residents to the non-White population increased by a remarkable 16.2 points, more than doubling (108.7 percent) during the same period. Black-White exposure also increased since 1990, but by only 6.0 points or 15.1 percent of 1990 levels. MSA-level Black-White exposure in 2020 was, for the first time, slightly higher than Hispanic-White exposure (45.8 versus 43.6 in 2020).

Third, the spatial “gradient” in minority-White exposure varied, as expected, across MSA components. Although Asian-White exposure was highest across all areas, on average, Black-White exposure was higher than Hispanic-White exposure in the inner-ring suburbs but lower in all other components. White-non-White exposure in principal cities in 2020 (39.8) was comparable to Hispanic-White (37.4) and Black-White (36.7) exposure there but dramatically lower in the suburbs and suburban fringe. In the fringe, for example, White-non-White exposure was only 18.3 in 2020. This compares to a Black-White E of 61.1, a Hispanic-White E of 72.2, and an Asian-White E of 94.7. For White metro residents, this simply means that these outer and suburban fringe areas have exceptionally large shares of Whites vis-à-vis other racial and ethnic minorities.

Fourth, and finally, changes in E have varied widely across components of metro areas and ethnoracial groups. For example, Black-White exposure increased in principal cities (by 6.6

points, 21.9 percent) and the suburban fringe (by 2.3 points, 3.9 percent), but decreased in inner-ring suburbs (by 3.2 points, 5.5 percent) and outlying suburbs (by 7.1 points, 12.0 percent). The Black population is largely being redistributed over time to disproportionately Black neighborhoods in established or older suburbs. Hispanic exposure to the White metro population decreased in principal cities (by 6.6 points, 15.0 percent), inner-ring suburbs (by 13.3 points, 22.9 percent), and outlying suburbs (by 15.2 points, 20.2 percent), increasing only slightly (by 1.1 points, 1.5 percent) in the suburban fringe. These results contrast markedly from those observed among the White population: White–non-White exposure increased, on average, across all types of suburbs and in principal cities. Among the Asian population, however, exposure to Whites decreased throughout all parts of America’s metro regions, declines ranging from 3.6 points (3.7 percent) in the fringe to 16.8 points in both the inner-ring and outlying suburbs (20.3 percent and 19.3 percent of baseline levels, respectively). Still, Asian Americans’ exposure to Whites exceeds that of any other racial minority group.

Metro Case Studies: A Coda to National Trends

As a final goal, we consider the generality of patterns of suburbanization, diversity, and segregation for a subset of MSAs: Atlanta, Chicago, Houston, New York City, and St. Louis. A summary of MSA-specific trends is shown in figures A.1 through A.4 (for detailed estimates by metro area, race, and suburban type, see online appendix tables 5 through 10).

Trends in overall suburbanization have generally slowed over time, even as large but declining racial disparities in suburbanization have unfolded across these metro areas (figure A.1). In general, the White and Asian populations had the largest shares of suburban population in 2020 in each of these MSAs and have generally exhibited slower percentage point increases in suburbanization since 1990. White suburbanization has slowed or even declined since 2000 in some MSAs, presumably a result both of urban neighborhood renewal, including White gentrification, and the movement

away from diversifying suburbs. As in national estimates, each of these MSAs reveals high levels of suburbanization among the Asian and White populations, and the lowest suburbanization among Black metro residents. In the case of the Black population, suburbanization in these five MSAs has increased rapidly since 1990. Suburbs also account for comparatively small Black shares in densely populated, older, and racially segregated metro areas (such as New York and Chicago).

We also calculated estimates of racial diversity (*SDI*) for each MSA over time (figure A.2). The overall pattern is clear. Since 1990, ethnoraacial diversity in these metro areas, their principal cities, and in inner-ring and outlying suburbs has increased substantially, regardless of population size, region, or recent growth patterns. Like national patterns, the suburban fringe of Atlanta, Chicago, Houston, and St. Louis is considerably less racially diverse than other parts of their respective metro areas, especially in comparison with principal cities. Interestingly, there are two MSAs (Atlanta and Houston) where inner ring suburbs are estimated to be more diverse than their corresponding principal city—an important departure from national trends.

We also document trends in residential segregation (figure A.3) and exposure (figure A.4). The metro segregation indices (based on *D*) reveal declines in White–non-White neighborhood segregation. Declining metro segregation is seemingly the result of increasing suburbanization and diversity as metro minority populations relocate from highly segregated principal cities to less segregated inner-ring and outlying suburbs. Moreover, in every case (except Atlanta), overall declines in metro segregation were larger than declines in principal cities. The overall picture, then, is one of declining residential segregation across metro areas and their suburbs, which largely mimics national patterns.

The only exception is Houston, where White–non-White segregation levels were largely unchanged between 1990 and 2020. However, there remain very large differences in segregation from Whites among the different minority populations considered here. In Houston, for

example, Black-White segregation in the outlying suburbs was 47.5 in 2020, which compares with a Hispanic-White D of 27.1 (see online appendix table 8). Among Asian residents living in Houston's outer suburbs, the D was much larger—62.1 in 2020, up from 40.2 in 1990. This suggests the presence of newly emerging Asian ethnoburbs in outlying suburban areas. Documenting national trends in racial residential segregation is useful, but also risks obfuscating diverging racial patterns at the local level.

Last, we estimate White–non-White exposure for each of these five metro areas (figure A.4). The growing exposure of White metro residents to racial minority populations is evident across different parts of these MSAs. In most cases, White exposure to non-Whites is greatest in principal cities and lowest at the suburban fringe. In 2020, Atlanta was unique in having more White exposure to minorities in both inner-ring and outlying suburbs than in principal cities. It also is unique in experiencing little if any decadal increase in White–non-White exposure at the suburban fringe. One implication, which requires additional study, is that White exurbanization is driven by growing diversity in other metro suburban areas.

DISCUSSION AND CONCLUSION

Findings from the 2020 Census have revealed that America's suburban population has continued to grow at the expense of rural areas, expanding outward as new metro counties are added at the periphery (the suburban fringe). Our article is unusual in tracking diversity and segregation in metro areas and principal cities as well as America's rapidly changing suburbs: inner-ring suburbs, outlying suburbs, and the newly reclassified suburban fringe. We combined georeferenced data on current and historical boundaries of principal cities and MSAs in order to describe the demographic and residential characteristics of the nation's metro regions, placing the spotlight on spatial and racial heterogeneity within the suburbs. MSA-level estimates reveal slowly declining levels of Black-White segregation and little change among Asians and Hispanics. Black-White metro segregation continued to decline, that is,

D s declined from 67.7 to 58.5 (online appendix table 3) over the past decade. However, America's suburbs—our emphasis here—have experienced uneven patterns of racial change nationally and from one MSA to another.

This article provides several general conclusions. Today, nearly two-thirds of all people living in metro America live in the suburbs. Significantly, the addition of newly reclassified metro counties at the periphery made little difference to estimates, which suggests that much of the growth of suburban areas (and suburbanization of metro areas) is endogenous rather than due to administrative reclassification. Indeed, additional analyses (results not shown) revealed population growth of 13.5 million (12.6 percent) within the inner-ring suburbs between 2010 and 2020, relative to 4.7 million (9.5 percent) in the outlying suburbs, and just 205,173 (3.3 percent) in the suburban fringe. Still, suburbanization slowed overall during the 2010s compared with earlier decades; this is true even among the previously rapidly suburbanizing Black and Hispanic populations. The White and Asian populations remain disproportionately concentrated in America's suburbs. Nevertheless, for the first time ever in 2020, the majority of America's metro Black population lived in suburban areas.

A second conclusion is that the extraordinary increases in Black, Hispanic, and Asian suburbanization since 1990 have changed the racial makeup of suburbia overall. Multiracial diversity is suffusing America's suburbs as never before. We showed, for example, that there is a 53 percent probability today that any two people randomly drawn from inner-ring suburban areas would be from different ethnoracial groups. Not surprisingly, the least diverse part of suburbia is its fringe—formerly rural—counties, where the average likelihood of drawing two people of different races is only 34 percent overall. This finding is consistent with the hypothesis, untested empirically, that the exurbs may be providing “refuge” for suburban Whites fleeing growing racial diversity (for discussion, see Parisi et al. 2019). As reported in this issue, suburbs are likely to be infused with racial politics over the foreseeable

future (Rastogi and Jones-Correa 2023). School boards and local communities are increasingly divided on issues of inclusion and exclusion, on the racial gerrymandering of municipal and school district boundaries (Frankenberg et al. 2023; Owens and Rich 2023), and on restrictive zoning laws on housing and commercial activities (Wyndham-Douds 2023; Girouard 2023, this issue). The suburbs are arguably at the frontline of America’s “diversity explosion” (Frey 2013), where economic integration and cultural assimilation occur or are contested (Zapatka and Tran 2023, this issue).

Third, our results suggest that metro segregation (*D*) remains high among the Black population, although continuing to decline (slowly). The idea of “melting-pot suburbs” (Frey 2013), which signals residential integration, hardly seems apt. To be sure, the largest declines in Black-White segregation over the past decade were found in the suburbs. But any optimism from this result is countered by declines over the last decade in the Exposure Index between the Black and White populations in both inner-ring and outlying suburbs. That is, Black individuals are no more likely to be living with White neighbors today than in the past. In fact, Black exposure to Whites in the suburbs seems to have declined, at least in those parts of the suburbs where most of the metro Black population lives. One implication is that the suburban Black population is growing most rapidly in neighborhoods where Whites are declining in population size. The statistical paradox is that declines in Black-White segregation occurred even as Blacks have become less exposed to Whites. There is historical precedent for such trends, such as in Detroit, where Black exposure to Whites changed little over the past half century even as *D* declined (Logan and Stults 2021). This is because Whites for decades fled Detroit’s inner-city neighborhoods for mostly White suburbs. Recent declines in Black exposure to Whites in the suburbs may portend a similar demographic process, but one rooted mostly in White depopulation rather than White flight since 2010.

A fourth and related general conclusion is that previously observed declines in suburban segregation among Hispanics and Asians seem

to have stagnated, or even reversed, over the past decade. Because these are America’s two most rapidly growing ethnoracial groups, this finding is potentially significant because it raises prospects of growing suburban fragmentation and spatial inequality (Wyndham-Douds 2021; Rastogi and Jones-Correa 2023). Suburbs may be less likely than in the past to connote entry into mainstream society or social mobility. Our findings suggest the formation of new ethnoburbs among the Asian and Hispanic populations—perhaps especially among first- and second-generation immigrants. Indeed, declines in Asian and Hispanic exposure to Whites in mature suburbs (those outside the principal city) suggest this possibility. Older suburbs may be undergoing a process of invasion-succession, especially if Whites are increasingly leaving for fringe or exurban housing developments or moving back to cities.

Finally, our study provides some potentially important methodological lessons. On the one hand, observed patterns of diversity and segregation seem to be remarkably robust to alternative universes of MSAs or to the metro counties they comprise (but see Logan and Stults 2021). Our initial concern was that the failure to include mostly White, newly reclassified metro counties would bias measures of diversity and segregation, wrongly suggesting a more positive picture of racial residential integration. However, whether the universe of metro counties was defined at the beginning or end of the study period did not materially affect our substantive conclusions. On the other hand, any sensitivity to alternative but conventional empirical approaches seems to merit additional study. This is reinforced by our case studies of heavily populated metro areas with very different demographic histories of inner-city neighborhood change and suburban growth of Whites and racial minorities. Counties at the fringe are, by definition, growing and becoming more spatially and economically integrated with the metro core. Whites are increasingly moving to exurbia and limiting their exposure to non-White minorities. Yet this demographic fact is not often illuminated using conventional approaches, where results are heavily weighted (and influenced) by demographic

change in principal cities and their inner-ring suburbs. This suggests the need for case studies that acknowledge qualitative and quantitative differences in the social, political, demographic, and economic makeup of each metro area and its neighborhoods.

Our descriptive results based on the 2020 Census enumeration are a first step to a more complete understanding of racial dynamics in America's suburbs. Future research will require other, less conventional empirical approaches, including decomposing changes in metro segregation into their city-suburb components. Our findings also raise a number of related questions. For example, is the apparent slowdown of ongoing declines in segregation, say between the Black and White populations, due to offsetting changes in segregation within different parts of MSAs? It will also be important to develop new measures of multiracial segregation rather than rely on pair-wise comparisons based on *D* or *E*. Menendian and his colleagues (2021) in fact claim that racial residential segregation actually has increased since 1990 when all racial groups are considered simultaneously rather than separately. As

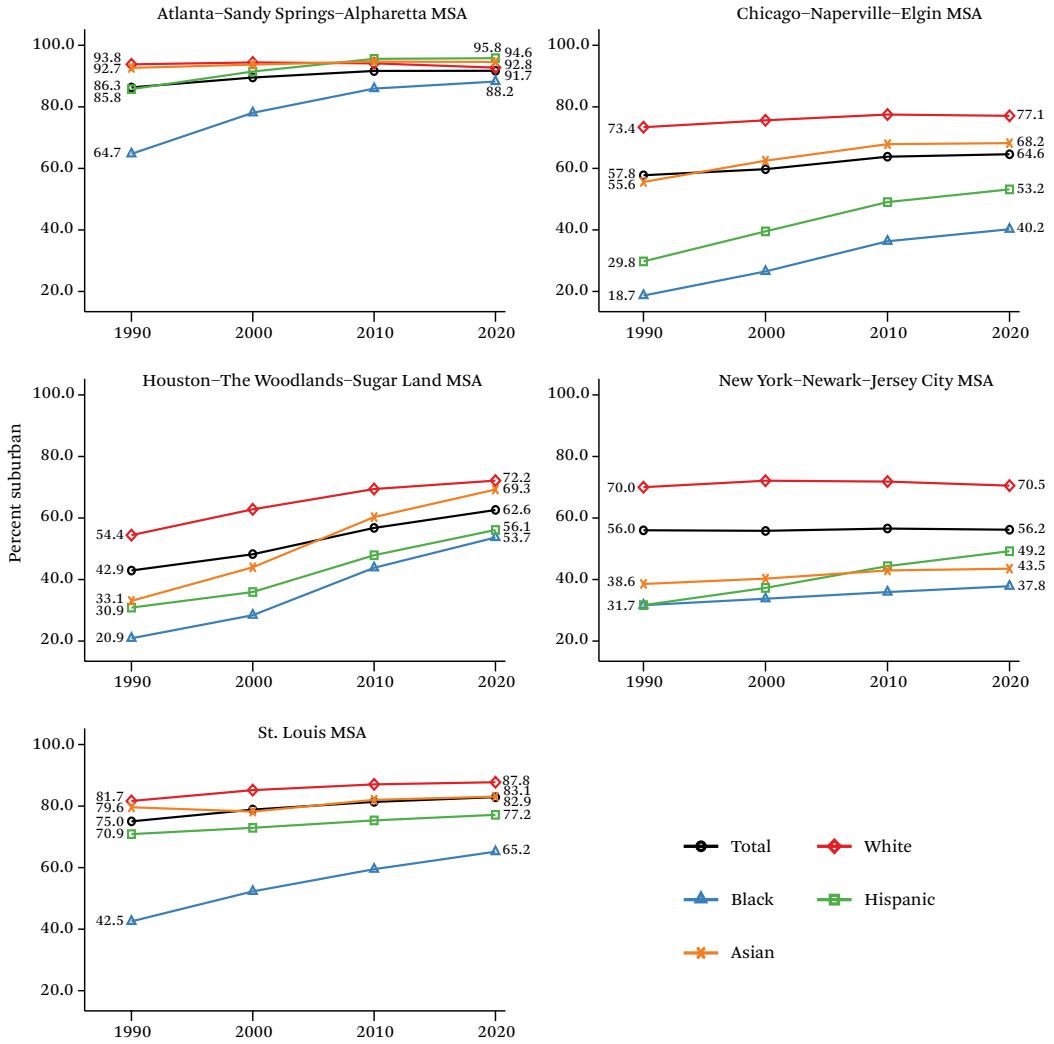
the White and Black populations become smaller shares of the U.S. population, it will be increasingly important to focus attention on rapidly growing groups—the Asian and Hispanic populations—whose experiences are fundamentally shifting the usual story of continuing declines in segregation from Whites. Even in America's suburbs, we have shown that members of these two groups have generally become less spatially integrated over time with White populations. For the Asian population—America's most affluent racial group (if measured by income or earnings)—increases in suburban segregation from Whites may be rooted mostly in socioeconomic status as they separate themselves from less affluent groups, including working-class and poor Whites. For Hispanics, evidence of declining exposure to Whites, even in the suburbs, may also be rooted largely in economics (such as moving into older suburbs with affordable housing). A full assessment of competing expectations requires attention to the spatial heterogeneity of the suburbs, which vary dramatically from older, inner-ring suburban neighborhoods to the suburban fringe.

Table A.1. Summary of Administrative Units in the Analysis

Year	1990 Delineations			2010 Delineations		
	1990	2000	2010	2000	2010	2020
MSAs			303			300
Metro counties			795			1,034
Metro area						
Tracts	45,808	50,532	57,050	65,669	58,488	67,409
Population	194,746,736	222,058,320	246,075,136	268,136,112	252,185,408	274,432,384
Principal city						
Tracts	21,035	22,021	23,024	25,150	23,024	25,150
Population	81,782,776	87,123,864	89,509,024	93,403,848	89,509,024	93,403,848
Inner suburb						
Tracts	16,355	19,343	23,168	27,709	23,168	27,709
Population	75,738,136	90,981,456	106,261,480	119,673,184	106,261,480	119,673,184
Outer suburb						
Tracts	8,418	9,168	10,858	12,810	10,858	12,810
Population	37,225,828	43,953,004	50,304,628	55,059,080	50,304,628	55,059,080
Suburban fringe						
Tracts	–	–	–	–	1,438	1,740
Population	–	–	–	–	4,902,714	5,110,279
					5,657,107	6,296,282

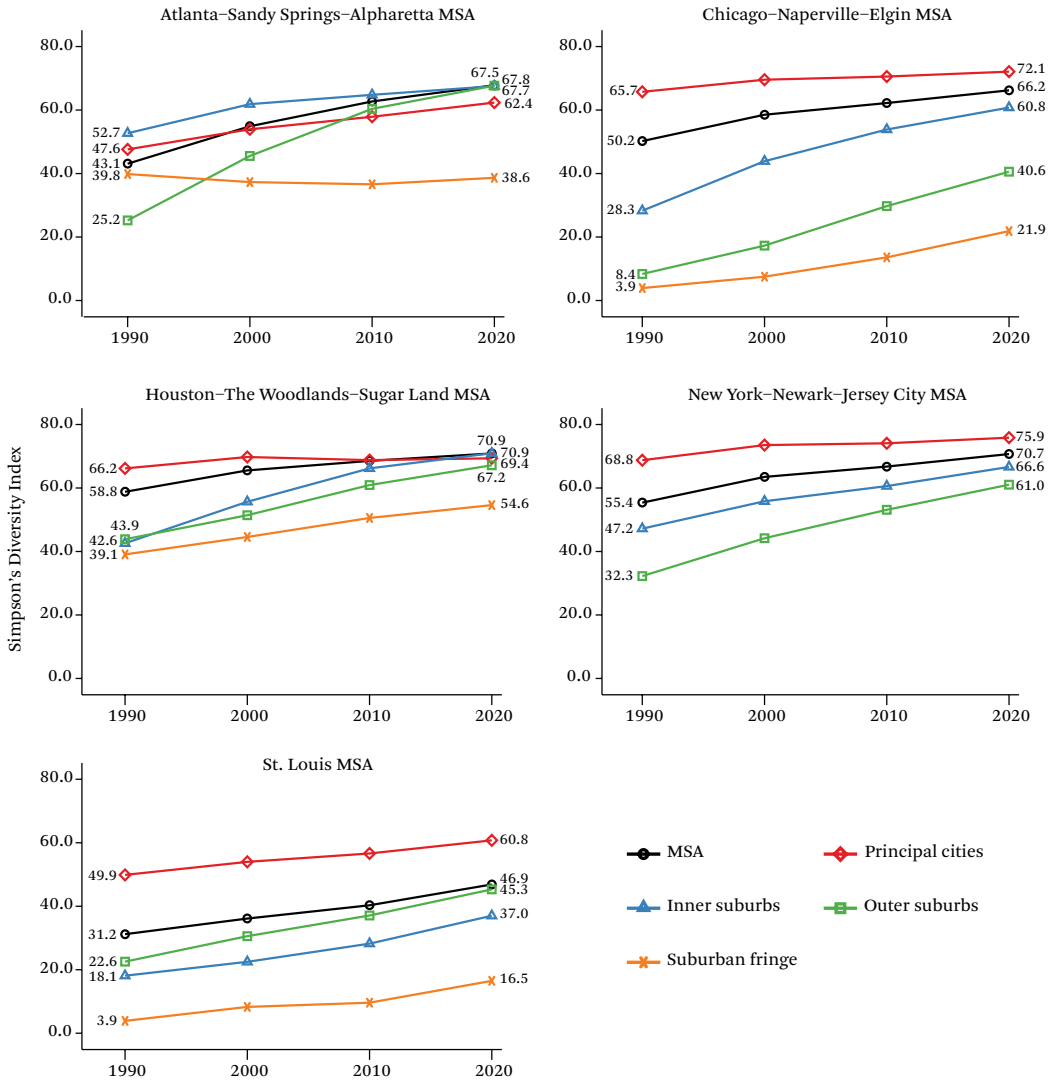
Source: Authors' tabulation.

Figure A.1. Percentage Living in Suburban Tracts, by Selected MSA and Race



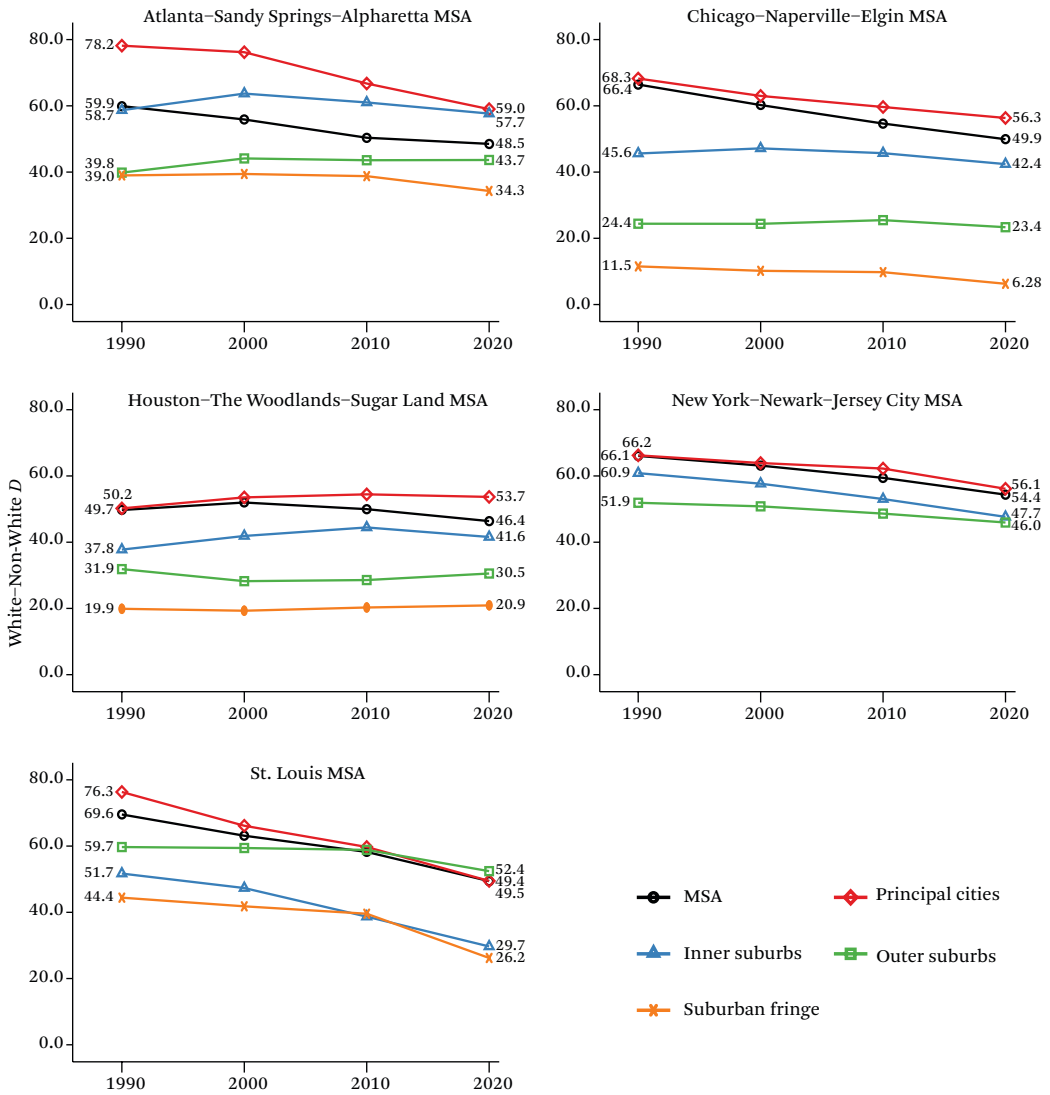
Source: Authors' tabulation.

Figure A.2. Average Simpson's Diversity Index, by Selected MSA and Residence



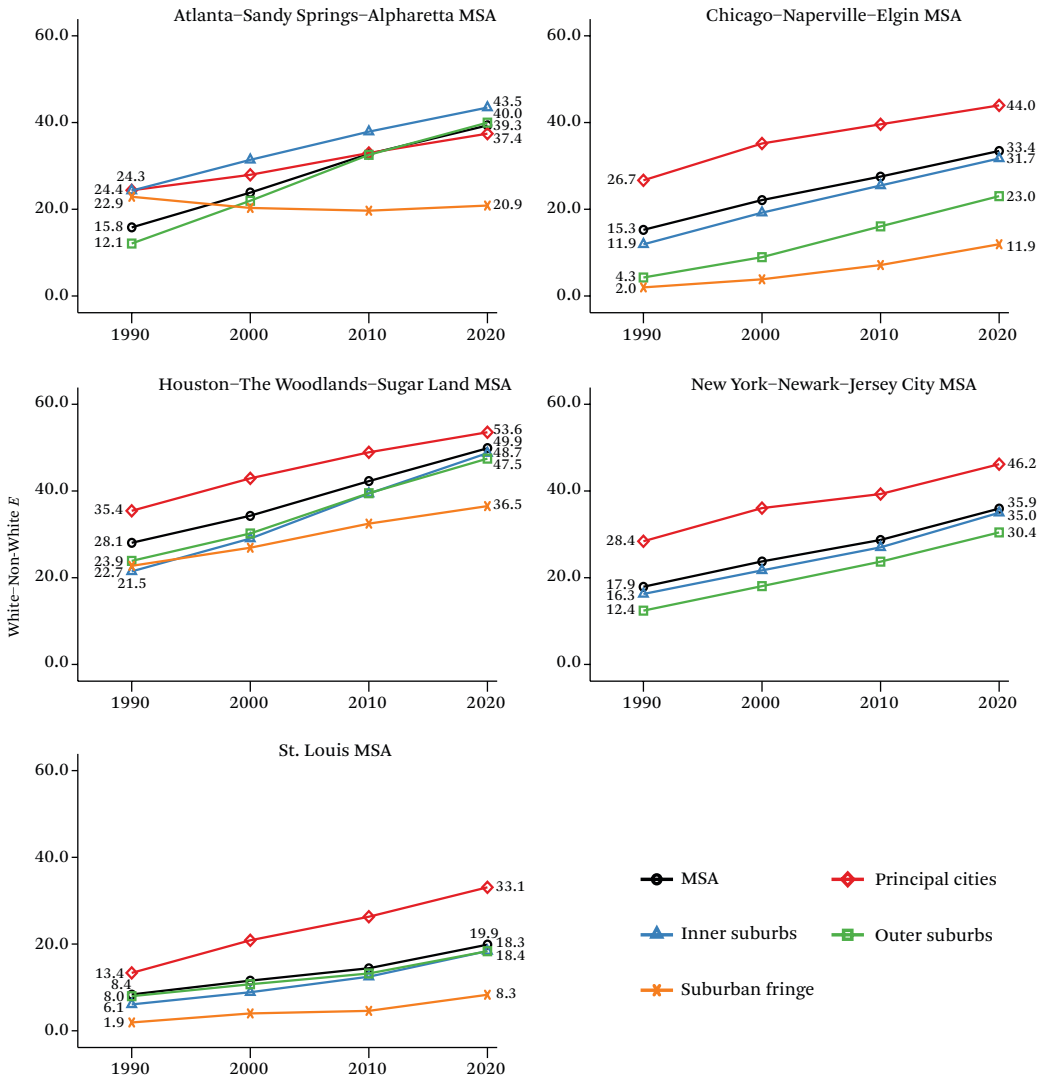
Source: Authors' tabulation.

Figure A.3. Average Index of Dissimilarity Between White–Non-White Populations, by Selected MSA and Residence



Source: Authors' tabulation.

Figure A.4. Average Exposure Index Between White-Non-White Populations, by Selected MSA and Residence



Source: Authors' tabulation.

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