Racial and Ethnic Residential Segregation in the United States: 1980-2000

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By
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and
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with
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United States Census 2000

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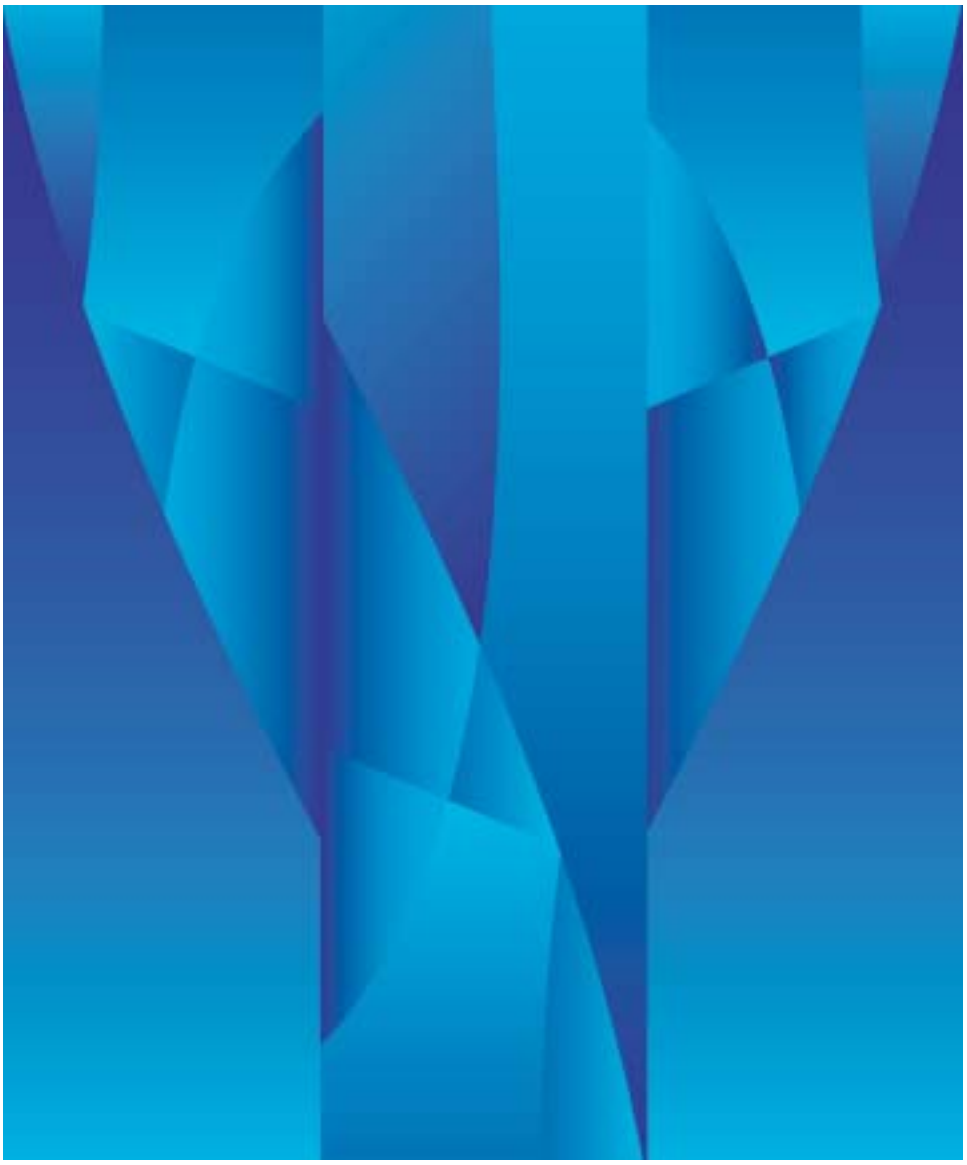
Table of Contents

Text Tables for Asians and Pacific Islanders (API), Asians, and Native Hawaiians and Other Pacific Islanders (NHOPI)

Figures

Maps

Maps



CHAPTER 1

INTRODUCTION AND HIGHLIGHTS

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A. INTRODUCTION

Data recently released from Census 2000 provide an opportunity to examine the extent of changes in racial and ethnic residential segregation in the last 2 decades of the 20th century. Segregation can result from, among other factors, voluntary choices people make about where they want to live or from the involuntary restriction of choices, such as through discrimination in the housing market, or from a lack of information about residential opportunities. This study does not attempt to identify the causes of racial and ethnic residential segregation (or simply "segregation"), nor do we argue that segregation is a more serious problem in one area than another. This report simply describes the extent of, and changes in, segregation over the 1980 to 2000 period. Because segregation is much more of an issue in urban environments, we focused on segregation patterns in metropolitan areas across the United States.

B. RACE AND ETHNICITY

Residential segregation measures are influenced by how race and ethnicity are defined. In 1977, the Office of Management and Budget (OMB) issued Statistical Policy Directive 15, which provided the framework for data collection on race and ethnicity to federal agencies, including the Census Bureau, for the 1980 decennial census.

That directive identified four racial groups:

- White;
- Negro or Black;
- American Indian, Eskimo, or Aleut; and
- Asian or Pacific Islander

— and one ethnicity —

- Spanish/Hispanic origin or descent.

The questions on the 1980 and 1990 censuses asked individuals to self-identify with one of these four racial groups and indicate whether they were Hispanic.[1]

In the 1990s, after much research and public comment, OMB revised the racial classification to include *five* groups:

- White,
- Black or African American,
- American Indian or Alaska Native,
- Asian, and
- Native Hawaiian or Other Pacific Islander (also referred to as Pacific Islanders).

An additional major change was to permit the individuals to report more than one race. Census 2000 figures indicate that 6.8 million people, or 2.4 percent of the population, reported more than one race.[2]

C. SEGREGATION MEASURES

This report examines five dimensions of segregation proposed by Massey and Denton (1988). Within each of these dimensions, several segregation measures are possible. In this report we focus on only one segregation measure from each dimension as follows:

evenness dimension:
dissimilarity index

exposure dimension:
isolation index

concentration dimension:
delta index

centralization dimension:
absolute centralization index

clustering dimension:
spatial proximity index

These dimensions and indexes are discussed in more detail in Chapter 2 and in Appendix B.

D. HIGHLIGHTS

- The trend for Blacks or African Americans is clearest of all — declines in segregation were observed over the 1980 to 2000

[1]The population censuses have a special dispensation from OMB to allow individuals to designate "Some Other Race" rather than one of those specifically listed. The vast majority of individuals choosing that option are Hispanic (Grieco and Cassidy 2001). The decennial census questions also ask about specific Asian and Pacific Islander races (e.g., Chinese).

[2]Many of those who report more than one race list "other" as one of the races. About 1.2 percent of the population selected two races which did not include the "other" race. Another 0.2 percent of the population selected three or more races (indicating that they selected at least two races which were not "other").

period across all dimensions of segregation we considered.

- Despite these declines, residential segregation was still higher for African Americans than for the other groups across all measures. Hispanics or Latinos were generally the next most highly segregated, followed by Asians and Pacific Islanders, and then American Indians and Alaska Natives, across a majority of the measures.
- Asians and Pacific Islanders, as well as Hispanics, tended to experience increases in segregation, though not across all dimensions. Increases were generally larger for Asians and Pacific Islanders than for Hispanics.
- Increases in segregation were apparent for Asians and Pacific Islanders and Hispanics when using the dissimilarity index (evenness), the isolation index (exposure), and the spatial proximity index (clustering). Both groups, however, experienced declines in the absolute centralization index (centralization), and Hispanics also had declines in the delta index (concentration) while Asian and Pacific Islanders showed little change in that measure.
- The story of American Indian and Alaska Native residential segregation was mixed, with declines across some dimensions of segregation and increases in others.
- In terms of trends across the five dimensions of segregation, declines in segregation were most evident in centralization, where all groups experienced declines over the 1980 to 2000 period when all metropolitan areas are considered. Three of the four groups experienced declines in concentration. Trends for the evenness and clustering dimensions were split, with two racial/ethnic groups experiencing increases and two experiencing declines. Finally, exposure (isolation) was the one dimension where increasing segregation was the norm, with only African Americans experiencing declines.

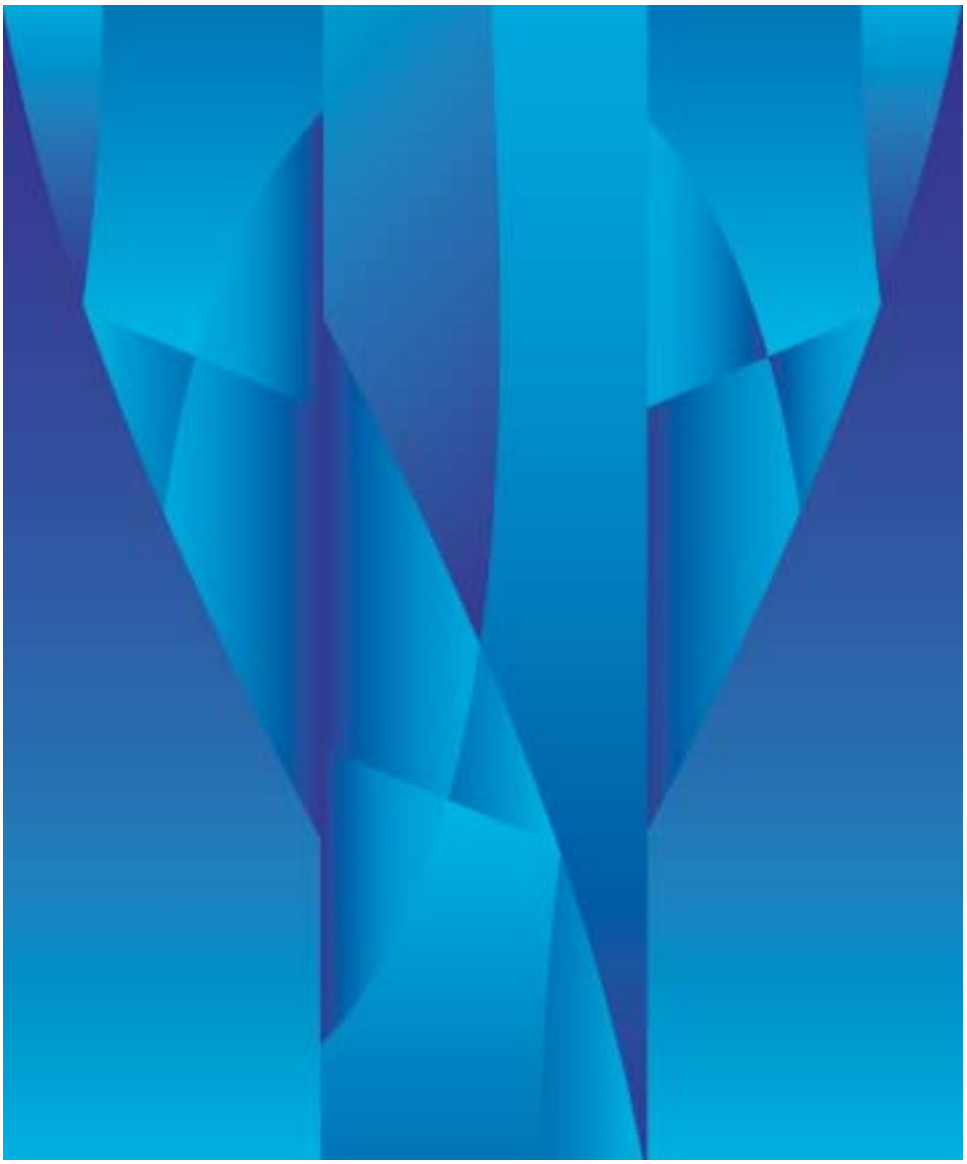
E. PLAN OF THE REPORT

Chapter 2 discusses the data and methods employed in this report. It covers race and ethnicity measurement, geographic areas and units of analysis, residential segregation measurement, the data used, statistical testing, and guidance on how to interpret the findings. Chapters 3 through 6 focus on the 1980 to 2000 residential segregation patterns of four major racial and ethnic groups:

- Chapter 3: American Indians and Alaska Natives
- Chapter 4: Asian and Pacific Islanders, with a special section on its subgroups in 2000 — Asians, and Native Hawaiians and Other Pacific Islanders
- Chapter 5: Blacks or African Americans
- Chapter 6: Hispanics or Latinos

In each case, non-Hispanic Whites serve as the reference (majority) group, even though in some metropolitan areas they are actually in the minority.

Each chapter presents information in the same way using the same table structure. First, descriptive statistics about the five indexes are presented and discussed. Second, changes over time are discussed using the characteristics of the metropolitan areas to understand differences. Third, the magnitudes of changes are examined and any differing patterns are discussed. Fourth, statistics are presented for all large metropolitan areas (1 million people or more) that have at least 20,000 people or three percent of their population in the minority group. Then, the metropolitan areas with the biggest increases and decreases in segregation are discussed. Each chapter includes graphical representations of residential segregation in the form of scatter plots, histograms, and maps. The chapters close with a summary of findings. Finally, Chapter 7 presents some cross-group comparisons and analyses.



CHAPTER 2

DATA AND METHODS

CHAPTER 2

DATA AND METHODS

This report is based on data from the 1980, 1990, and 2000 decennial censuses. The main methodological issues involved in analyzing racial and ethnic residential segregation revolve around the definition of racial and ethnic categories, geographic boundaries, and segregation measures. We begin with a discussion of these issues, and then follow with a more detailed description of the data and notes on statistical testing and the interpretation of findings.

A. RACE AND ETHNICITY MEASUREMENT

One issue that arises when measuring residential segregation is choosing a reference group against which the segregation of other groups can be measured. We chose non-Hispanic Whites as the reference group (Massey and Denton 1988). For 2000 data, when individuals could report more than one race, we chose those who designated White alone as their racial classification, and not Hispanic.

For other groups, we have used definitions that closely approximated 1990 census categories: African American, Asian, American Indian, and Hispanic. So for 2000, the Asian and Native Hawaiian or other Pacific Islander groups have been combined. We computed segregation indexes using anyone designating himself or herself as a member of a particular racial group, e.g., Black or African American alone or in combination with another group (or groups). The alternative was to use only individuals identifying with that group alone. Appendix A shows residential segregation indexes for 2000 calculated both ways.

We decided to use the "alone or in combination" method for two reasons. First, as described in Appendix A, using a different method had little impact on estimates of African American segregation and only a modest effect on those of Asians and Pacific Islanders and American Indians and Alaska Natives. Second, and perhaps more importantly, was that for some racial groups (particularly Native Hawaiians and other Pacific Islanders, but also American Indians and Alaska Natives) so many people chose more than one race that we were concerned that the analysis using only those who identify with one group alone would have excluded too many metro areas to provide reliable results.[1]

B. AREAS AND UNITS OF ANALYSIS

Residential segregation usually describes the distribution of different groups across units within a larger area. Thus, to measure residential segregation, we must define both the appropriate area and its component parts (its units of analysis). While residential segregation can occur at any geographic level, we have chosen to focus on metropolitan areas as reasonable approximations of housing markets. The census-defined "place," which represents a town or city, is often too small. For example, some individuals in Washington, DC, need only move across the street to be in another jurisdiction, such as Prince George's County, Maryland. However, Consolidated Metropolitan Statistical Areas (CMSAs) seem too large; the New York CMSA stretches from Pennsylvania to Connecticut. We present estimates for all independent and primary metropolitan statistical areas (MSAs), referred to hereafter as metropolitan areas.[2]

The second geographic consideration — choosing an appropriate component part or unit of analysis — also presents alternatives. Independent estimates for racial characteristics are available for occupied households, census tabulation blocks, block groups, tracts, places, and counties. Both places and counties seem too large; movement from Park Avenue to Harlem in Manhattan, within the same place (New York City), or from Scarsdale to Yonkers, within the same county (Westchester County, New York) should have some measurable effect on segregation indexes.

[1] For historical analysis, Native Hawaiians and Other Pacific Islanders are combined with Asians in 2000 to calculate indexes comparable to the Asian and Pacific Islander population in 1980 and 1990. The residential segregation of Native Hawaiians and other Pacific Islanders in 2000 is analyzed in Chapter 4.

[2] OMB is introducing a substantially new concept for metropolitan areas to be defined on the basis of results of Census 2000 by June 30, 2003.

Occupied households are at the other end of the spectrum. Movement from one household to another usually occurs because of some life cycle event, and not to mitigate residential segregation.

That leaves blocks, block groups, and tracts. Blocks are created to ease data collection and can often have no residents, especially in commercial or industrial areas. Block groups are created by the Census Bureau as an intermediate geographic level to permit release of tabulated data that cannot be presented at the block level for confidentiality purposes. Arguments can be made that residential segregation indexes ought to be built up from the smallest geographic unit available — the block. Yet we believe it makes less sense to include the residents you may never see (on the opposite edge of a census block as blocks tend not to cross streets) and exclude the residents living across the street (in a different block). Going to larger aggregations of blocks, this problem is mitigated, although it never disappears as all geographies have boundaries.[3] Census tracts, which typically have between 2,500 and 8,000 people, are defined with local input, are intended to represent neighborhoods, and typically do not change much from census to census, except to subdivide. In addition, census tracts were often the unit of analysis chosen by other researchers. Consequently, we have chosen census tracts as our unit of analysis.[4] We will examine the effects of choosing census block groups instead of tracts in future research.

Table 2-1.
Dimensions of Segregation and Indexes Used

Dimension of Segregation	Index Representing the Dimension
Evenness	Dissimilarity Index
Exposure	Isolation Index
Concentration	Delta Index
Centralization	Absolute Centralization Index
Clustering	Spatial Proximity Index

C. RESIDENTIAL SEGREGATION MEASUREMENT

Residential segregation has been studied extensively with a variety of measures for many years (Duncan and Duncan, 1955; Taeuber and Taeuber, 1965; and Lieberson, 1980, 1981). Massey and Denton (1988) compiled, augmented, and compared these measures and used cluster analysis with 1980 census data from 60 metropolitan areas to identify five dimensions of residential segregation: evenness, exposure, concentration, centralization, and clustering. These five dimensions were further broken down into 20 measures of segregation, 19 of which we have calculated.[5]

- *Evenness* involves the differential distribution of the subject population.
- *Exposure* measures potential contact.
- *Concentration* refers to the relative amount of physical space occupied.
- *Centralization* indicates the degree to which a group is located near the center of an urban area.
- *Clustering* measures the degree to which minority group members live disproportionately in contiguous areas.

Appendix B discusses all 19 measures proposed by Massey and Denton in detail. It also presents comparative analysis of the indexes within each dimension. Based on our assessment of the indexes, Massey and Denton's recommendations, and earlier research, we selected the indexes listed in Table 2-1 above to represent the five Massey-Denton dimensions.

The most widely used measure of evenness and the most-widely used measure of residential segregation, in general, is dissimilarity. Conceptually, dissimilarity, which ranges from 0 (complete integration) to 1 (complete segregation), measures the percentage of a group's population that would have to change residence for each neighborhood to have the same percent of that group as the metropolitan area overall.

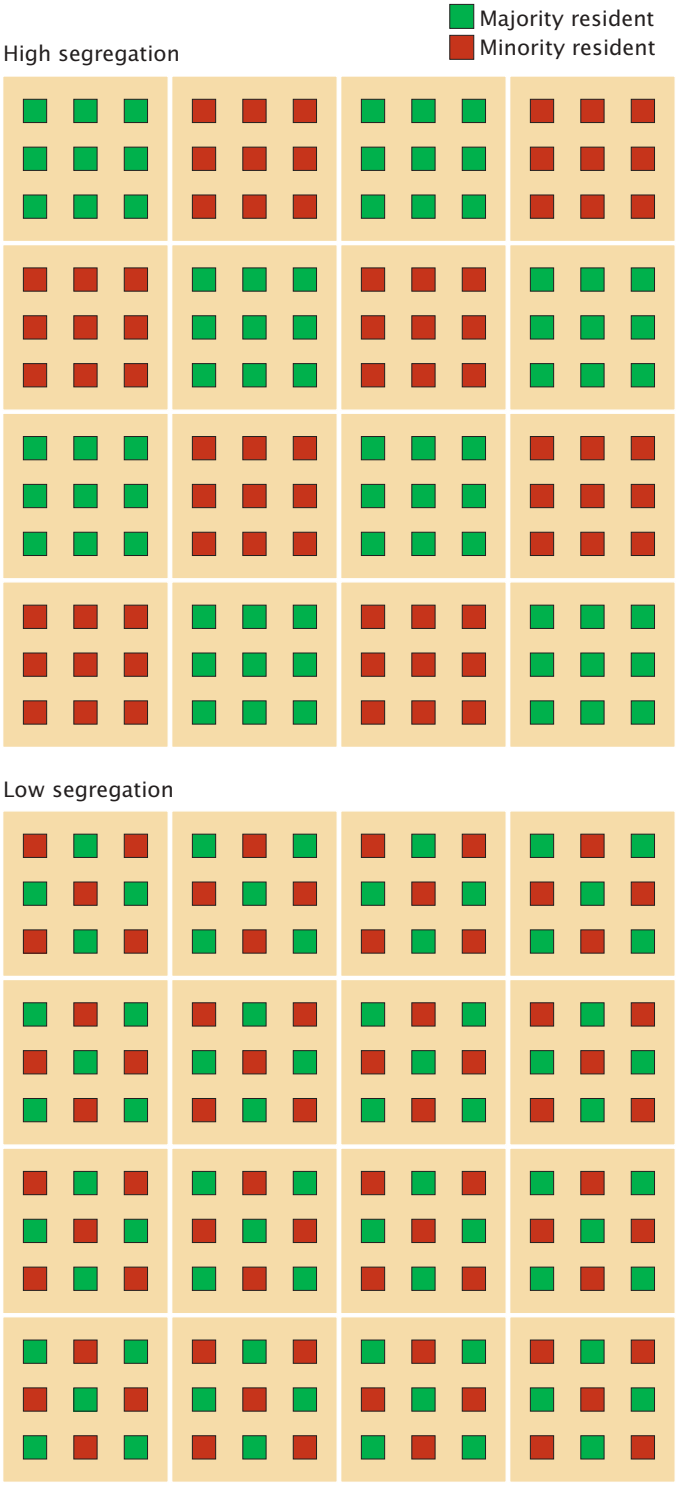
[3] One interesting future possibility is to tabulate data pooled across block faces, though this would take a great deal of work and must await better geographic information systems at the Census Bureau.

[4] We note that tract subdivision can increase measured residential segregation if it creates more homogeneous tracts.

[5] We omit an index which measures the proportion of the minority group residing in the central city of the metropolitan area. Massey and Denton (1988) note that this index, while quite simple to calculate, is a rather poor measure of segregation. We agree.

Figure 2-1a.

Distribution of Households Within One Hypothetical Metropolitan Area With High Segregation and One With Low Segregation:
Dissimilarity Index (Evenness)



Note: Neighborhoods within the metropolitan areas are delineated by the white lines.

The exposure measure, the isolation index, describes "the extent to which minority members are exposed only to one another," (Massey and Denton, 1988, p. 288) and is computed as the minority-weighted average of the minority proportion in each area. It also varies from 0 to 1.

We chose delta as the measure of concentration. This index, which also varies from 0 to 1, measures the proportion of a group's population that would have to move across neighborhoods to achieve a uniform density across a metropolitan area. Massey and Denton's preferred concentration measure, relative concentration, does not conform well to theoretical constraints, having several calculated values below -1.

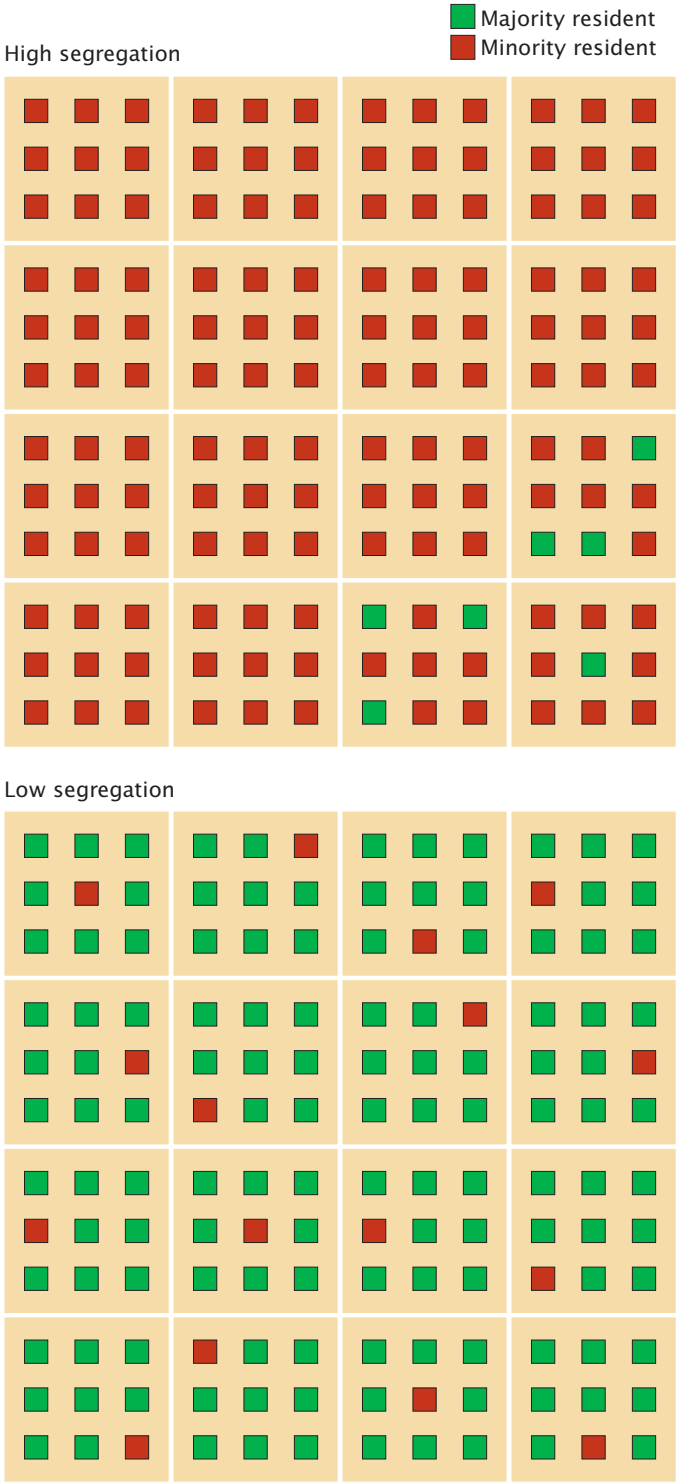
Absolute centralization examines only the distribution of the minority group around the metropolitan area center and varies between -1 and 1. Positive values indicate a tendency for group members to reside close to the center, while negative values indicate a tendency to live in outlying areas as compared with the reference group. A score of 0 means that a group has a uniform distribution throughout the metropolitan area.

Finally, the clustering measure used here, spatial proximity, basically measures the extent to which neighborhoods inhabited by minority members adjoin one another, or cluster, in space. Spatial proximity equals 1 if there is no differential clustering between minority and majority group members. It is greater than 1 when members of each group live nearer to one another than to members of the other group, and it is less than 1 in the rare case

that minority people lived nearer, on average to nonminority people than to members of their own group.

Figure 2-1(a-e) provides illustrations of what high and low segregation look like for all five measures; it shows how the measures capture different dimensions of segregation. Red boxes represent minority residents, while green ones represent majority residents. Each group of boxes represents a neighborhood, and each illustration represents a metropolitan area. Using the dissimilarity index (Figure 2-1a), a metropolitan area with high segregation has very homogeneous neighborhoods, though the location of those neighborhoods within the metropolitan area does not matter. Low segregation is characterized by an even distribution of minority group members across neighborhoods. In contrast, the isolation index, a measure of exposure, segregation (Figure 2-1b) is sensitive to the overall number of minority group members. Thus, the figure illustrating high segregation shows a metropolitan area with relatively few majority group members, and not evenly spread across tracts. Low segregation shows high levels of exposure to majority group members.

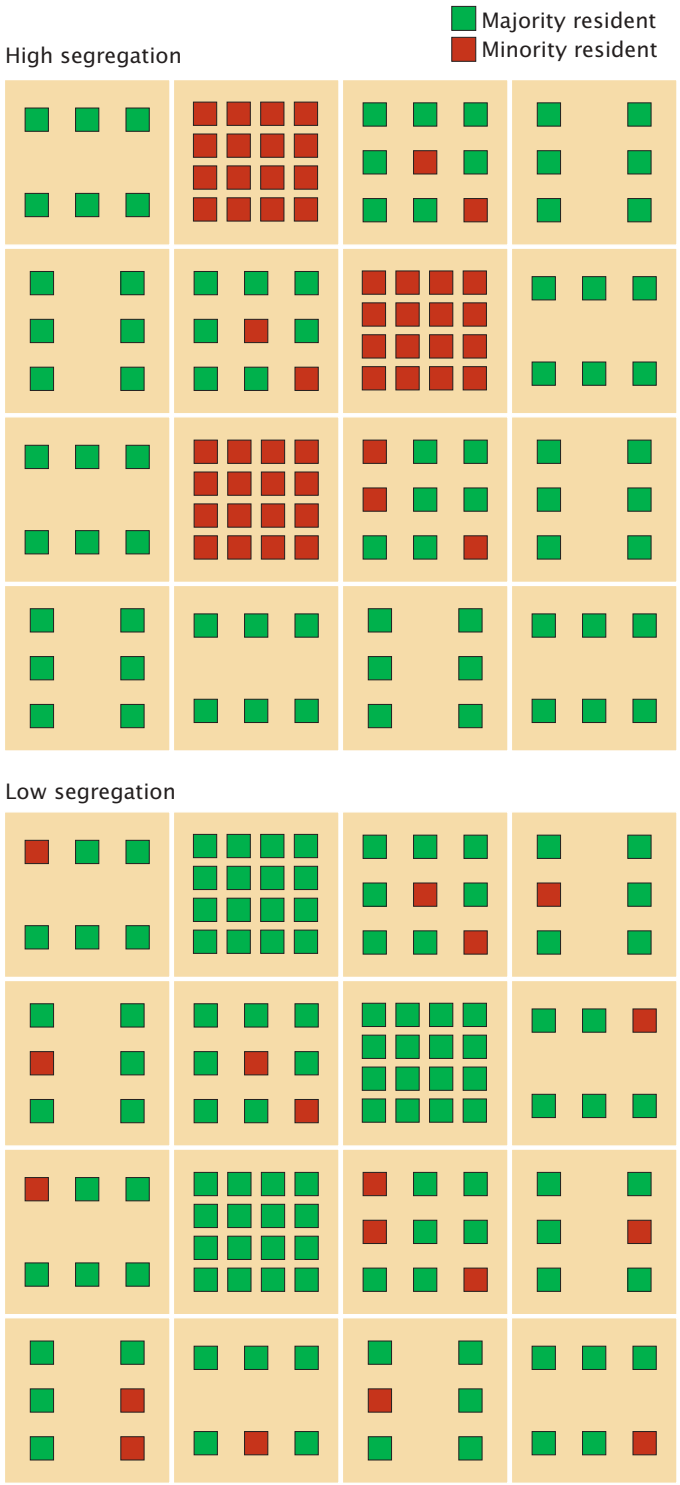
Figure 2-1b.
Distribution of Households Within One Hypothetical Metropolitan Area With High Segregation and One With Low Segregation:
Isolation Index (Exposure)



Note: Neighborhoods within the metropolitan areas are delineated by the white lines.

Figure 2-1c.

Distribution of Households Within One Hypothetical Metropolitan Area With High Segregation and One With Low Segregation:
Delta Index (Concentration)



Note: Neighborhoods within the metropolitan areas are delineated by the white lines.

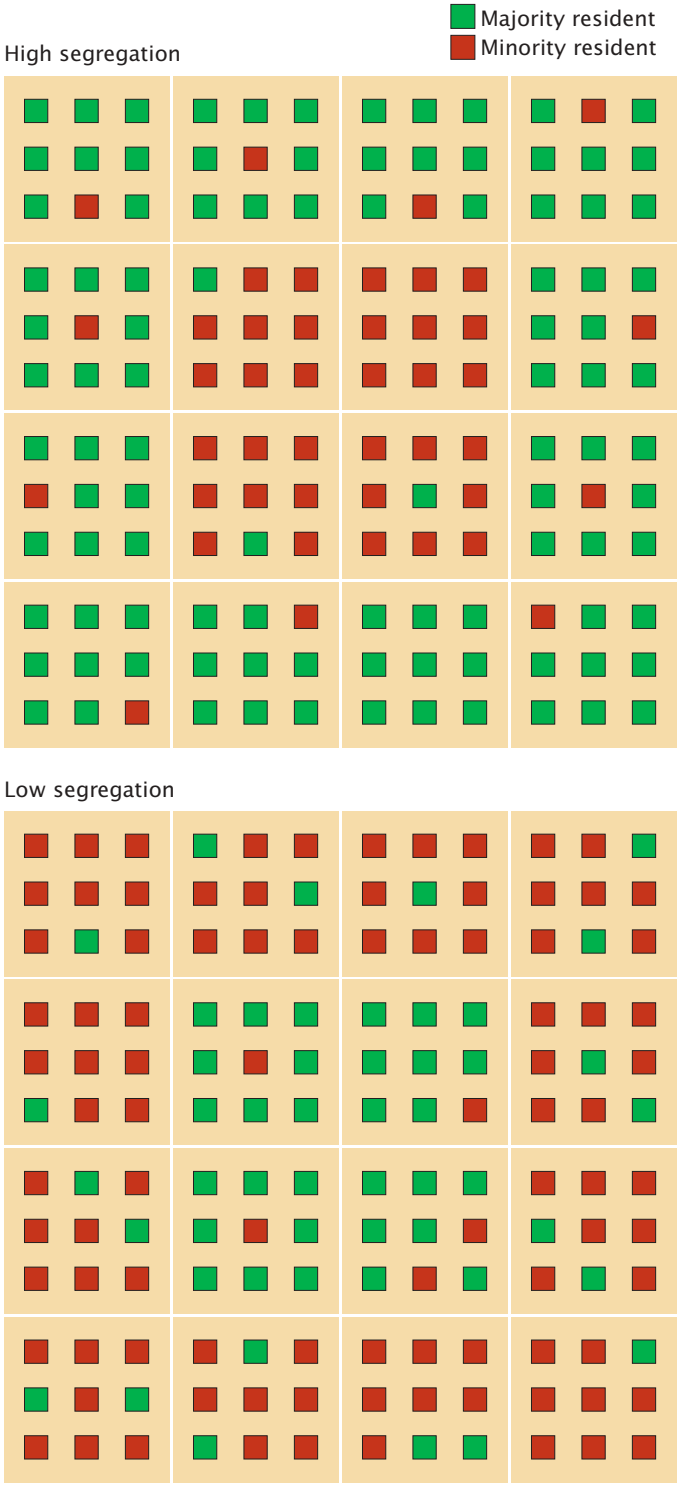
Metropolitan areas with high levels of concentration (Figure 2-1c), as measured by the delta index, are ones where minority members are densely packed in certain neighborhoods, while the low concentration illustration shows minority group members less densely packed in physical space than majority group members.

Figure 2-1d illustrates high centralization (the absolute centralization index), which measures the degree minority members are disproportionately in neighborhoods at the center of the metropolitan area, while low centralization indicates that minority group members are more toward the periphery of the metropolitan area.

Finally, clustering (Figure 2-1e), as measured by the spatial proximity index, is sensitive to the proximity of tracts to one another, regardless of how close to the metropolitan area center they are (centralization) or their density (concentration). So the illustration of high clustering shows that tracts with many minority group members are adjacent to each other, while the illustration of low clustering shows them further apart.

Because our choice in this report, to focus on five specific indexes, has subjective elements, the Internet materials accompanying this report have information on all 19 indexes, not just the five chosen. We note that the dissimilarity index is the one most often chosen by researchers calculating only one index.

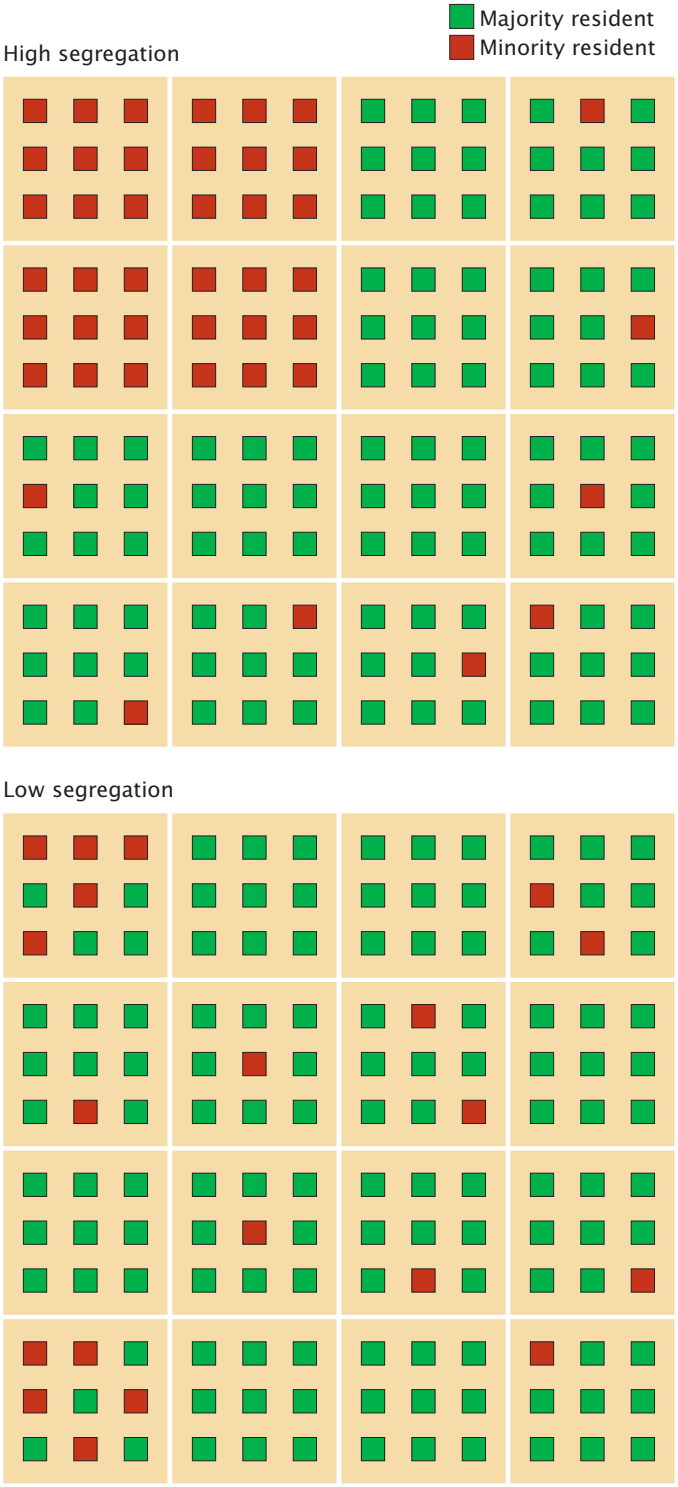
Figure 2-1d.
Distribution of Households Within One Hypothetical Metropolitan Area With High Segregation and One With Low Segregation:
Absolute Centralization Index (Centralization)



Note: Neighborhoods within the metropolitan areas are delineated by the white lines.

Figure 2-1e.

Distribution of Households Within One Hypothetical Metropolitan Area With High Segregation and One With Low Segregation:
Spatial Proximity Index (Clustering)



Note: Neighborhoods within the metropolitan areas are delineated by the white lines.

D. DATA

The data for this analysis were drawn from Census Bureau files (Census 1980, 1990, and 2000 Summary File 1) giving population counts for all racial groups and for Hispanics by census tract in all metropolitan areas. Data are presented for independent MSAs and Primary MSAs, not Consolidated MSAs. Town and city-based MSAs are used in New England. For 1980, 1990, and 2000 comparisons, the boundaries of metropolitan areas as defined on June 30, 1999 are used to ensure comparability.[6]

While this analysis uses constant metropolitan area boundaries, it does not use constant tract boundaries. The latter would require a considerable amount of mapping beyond the scope of this project. Tracts are sometimes added, split, or combined between censuses. Newly constructed tracts may tend to have greater racial or ethnic homogeneity than others, given that tracts are designed to represent relatively homogenous neighborhoods, and race may be one factor in their construction. The magnitude and effect of tract redefinition on computed segregation scores is not well understood.

Some estimates are presented at the aggregate summary level of "all U.S. metropolitan areas." Most estimates are for MSAs with a minority population of at least 20,000, or 3 percent of the 1980 total population.[7] We have imposed these restrictions because segregation indexes for metropolitan areas with small minority populations are less reliable than those with

[6] Counts may differ from official counts as tracts representing Crews of Vessels have been eliminated.

[7] MSAs must also have at least 10 census tracts.

larger ones. Random factors and geocoding errors are more likely to play a role in determining the settlement pattern of group members when fewer members are present, causing these indexes to contain greater variability. We note that Farley and Frey (1996) used these same cutoffs in their analysis. When averages across MSAs are presented, they are weighted by the minority group population in the MSA.

As a visual supplement to the segregation indexes, we created maps displaying the spatial distribution of racial and ethnic population groups in the most and least segregated large metropolitan areas for each group, as well as Los Angeles, which has an exceptionally diverse population. These maps are intended to convey a general impression of the racial and ethnic population distribution of these metropolitan areas, rather than showing exact numbers or locations. The map elements are scaled to a size that works well in the "typical" census tract. Consequently, in the largest and smallest census tracts, these maps do not always accurately display the true location and size of the underlying population.

When interpreting the maps, it is important to keep in mind that the underlying data consist of population counts in each census tract. The maps display dots of uniform size, each of which represents 200 or 400 people of a particular racial or ethnic group. Dots are placed arbitrarily within census tracts. This scheme works best in medium-sized census tracts. In large, sparsely populated census tracts, dots are not necessarily placed on the true population centers, and may be placed in nonresidential areas, such as uninhabited mountains, airports, or industrial facilities. Other census tracts are too small and densely populated to fit enough dots, causing dots to overlay one another. When there is not enough space in a census tract to display dots representing both non-Hispanic Whites and the minority group, the minority group dots overlay and cover up dots representing non-Hispanic Whites.

Table 2-2.
Estimated Net Percent Undercount From Demographic Analysis: 1990-2000

	1990	2000
Total	1.65	0.12
Non-Black	1.08	-0.29
Black	5.52	2.78

Note: The non-Black category in that year refers more specifically to those who were not Black or non-Black Hispanic.

Source: Estimates are from demographic analysis (Robinson 2001, Table A).

E. STATISTICAL TESTING

Because the base data are from the decennial census, they have no sampling error and conventional tests of significance do not apply. Any criteria adopted to discern substantive, rather than statistical, differences in segregation scores is inevitably somewhat arbitrary. We designate substantively noteworthy index differences as those that are more than 1 percent of the range of the index estimates for metropolitan areas meeting the minimum size criteria. For example, in 2000, the dissimilarity index for American Indians and Alaska Natives ranged from 0.213 to 0.607, a range of 0.394. Thus, differences of 0.004 (1 percent of 0.394) are considered substantively notable for this index for comparisons across MAs within this time period. For changes across time, the average of the 3 years' index range is used.[8]

Changes are shown in terms of percentage change in various tables. We present data in this way in order to make comparable statements across indexes whose ranges differ. It should be noted, however, that the small base of some index scores (i.e., those close to zero), may result in large percentage increases or decreases, even while the point change is small. Readers can refer to mean scores in the different years shown in various tables (or actual scores of different metropolitan areas as shown on the Internet) to compute change in different ways.

In some tables, we rank metropolitan areas according to their level of segregation, and we also average ranks across the five measures of segregation. We consider differences of less than 1 in the average rank to be basically tied. This cutoff, 1, was not derived based on any specific statistical procedure.

[8] There was little difference in this range among the years.

Apart from the issue of statistical testing, it should be noted that these data also have nonsampling error. Estimates of net undercoverage (underenumeration) of the total population are 1.65 percent for 1990, and 0.12 percent for 2000. This relatively low level of undercount masks differential undercount — a higher undercount of minority populations than nonminority ones. Table 2-2 shows estimated undercounts for the total population, Blacks, and non-Blacks in 1990 and 2000.

How this differential undercount affects residential segregation indexes is not known. If the people who were missed are distributed geographically like the people who were enumerated, then there may be little impact. Also, because of their complexity, segregation indexes are particularly subject to programming error. Appendix C discusses how the indexes calculated in this study compare with others.

F. INTERPRETING THE FINDINGS

We think it critically important to note that the values and ranks we report for metropolitan statistical areas on the several indexes can readily be misinterpreted as indicating that residential segregation is a more serious problem in some metropolitan areas, and a less serious problem in others. We strongly emphasize that the reported measures cannot necessarily sustain such inferences or interpretations. In particular, we do not speculate about how racial discrimination, free choices, or any of several other underlying processes (e.g., the growth or contraction of housing of varying costs relative to the growth or contraction of populations of varying incomes and stages of household formation; the relationship of such housing and population to jobs, schools, shopping and other amenities) might have contributed to the patterns observed. Similarly, the measures tell us nothing about consequences of an observed residential distribution (e.g., differential access to educational or job opportunities, a group's ability to maintain culturally distinctive institutions or practices) that might assist in identifying either problems or benefits associated with the pattern.

For these reasons, the measures reported here should be viewed as representing a starting point for research on contemporary patterns of residential segregation in the United States. To facilitate such work, as we noted above, the values for all 19 indexes for all metropolitan areas for each of the years and groups examined are available on the Internet.

CHAPTER 3

THE RESIDENTIAL SEGREGATION OF AMERICAN INDIANS AND ALASKA NATIVES: 1980-2000

CHAPTER 3

THE RESIDENTIAL SEGREGATION OF AMERICAN INDIANS AND ALASKA NATIVES: 1980-2000

Discussing the metropolitan residential segregation of American Indians and Alaska Natives is difficult because of the group's relatively small population and the fact that many still live on rural American Indian reservations and in Alaska Native villages. Of the 4.1 million American Indians and Alaska Natives (1.5 percent of the total population) counted in Census 2000, 1.4 million, or 34 percent, lived outside metropolitan areas.[1] Another challenge arose with the Census 2000 method of measuring race that allowed people to identify themselves as being of more than one race. In this chapter we focus on people identified as American Indian or Alaska Native alone or in combination with another race group. Appendix A shows residential segregation indexes for 2000 for those who just identified as being of this group alone.

Because of the relatively small total metropolitan population of American Indians and Alaska Natives, only 13 metropolitan areas qualified for our analysis (MAs that have at least 3 percent or 20,000 or more American Indian and Alaska Native population in 1980, as discussed in chapter 2).[2] The ten metropolitan areas that had at least 3 percent or more American Indian and Alaska Native population in 1980, in decreasing percentage order, using 2000 percentages, were: Tulsa, OK (10.7 percent); Anchorage, AK (10.4 percent); Rapid City, SD (9.9 percent); Fort Smith, AR-OK (8.0 percent); Lawton, OK (7.0 percent); Albuquerque, NM (6.6 percent); Great Falls, MT (5.7 percent); Yakima, WA (5.6 percent); Bellingham, WA (3.8 percent); and Yuma, AZ (2.2 percent in 2000, though 3.6 percent in 1980). The other three metropolitan areas included in this analysis were Oklahoma City, OK (6.6 percent in 2000, though 2.9 percent in 1980); Phoenix-Mesa, AZ (2.8 percent in 2000); and Los Angeles-Long Beach, CA (1.5 percent in 2000).

Table 3-1 illustrates the extent of residential segregation of American Indians and Alaska Natives in 1980, 1990, and 2000. It has the weighted average of American Indian and Alaska Native segregation in all metropolitan areas and in the 13 "selected" areas that meet the population criteria described above. These 13 metropolitan areas accounted for only 12.7 percent of all U.S. American Indian and Alaska Natives and only 19.4 percent of metropolitan American Indian and Alaska Natives.

The most widely used measure of residential segregation, dissimilarity, indicates a reduction in American Indian and Alaska Native segregation in both decades — for all metropolitan areas and selected metropolitan areas.[3] The overall 1980-2000 reduction was 11 percent for all metropolitan areas and 6 percent for the selected metropolitan areas. In all metropolitan areas, the reduction in dissimilarity was larger in the 1990s than the 1980s, while for the selected metropolitan areas, the reduction was more even.[4]

The measure of clustering, spatial proximity, also showed a reduction of 10.0 percent for all metropolitan areas and 15.4 percent for selected metropolitan areas over the 1980 to

[1] The 2000 American Indian and Alaska Native population figure includes all people who identified as American Indian or Alaska Native alone or in combination with another race. The number of people who identified as American Indian or Alaska Native alone in 2000 was 2.5 million. Forty-nine (48.7) and 44.8 percent lived in nonmetropolitan areas in 1980 and 1990, respectively, when using 2000 MA boundaries.

[2] In 1980 and 1990, this population was called American Indians, Eskimos, and Aleuts.

[3] Using the approach described in Chapter 2 to determine substantive changes as 1 percent of the index range, the following critical values are used: dissimilarity, 0.004; isolation, 0.004; delta, 0.005; absolute centralization, 0.008; spatial proximity, 0.015.

[4] Appendix A shows that dissimilarity for American Indians and Alaska Natives is the one index that shows a different trend for those identifying themselves as American Indian and Alaska Native alone versus in combination with another racial group — those identifying as American Indian and Alaska Native alone are more residentially segregated in metropolitan areas than indicated above for the alone or in combination group.

Table 3-1.
Descriptive Statistics for Residential Segregation Indexes for American Indians and Alaska Natives: 1980, 1990, and 2000

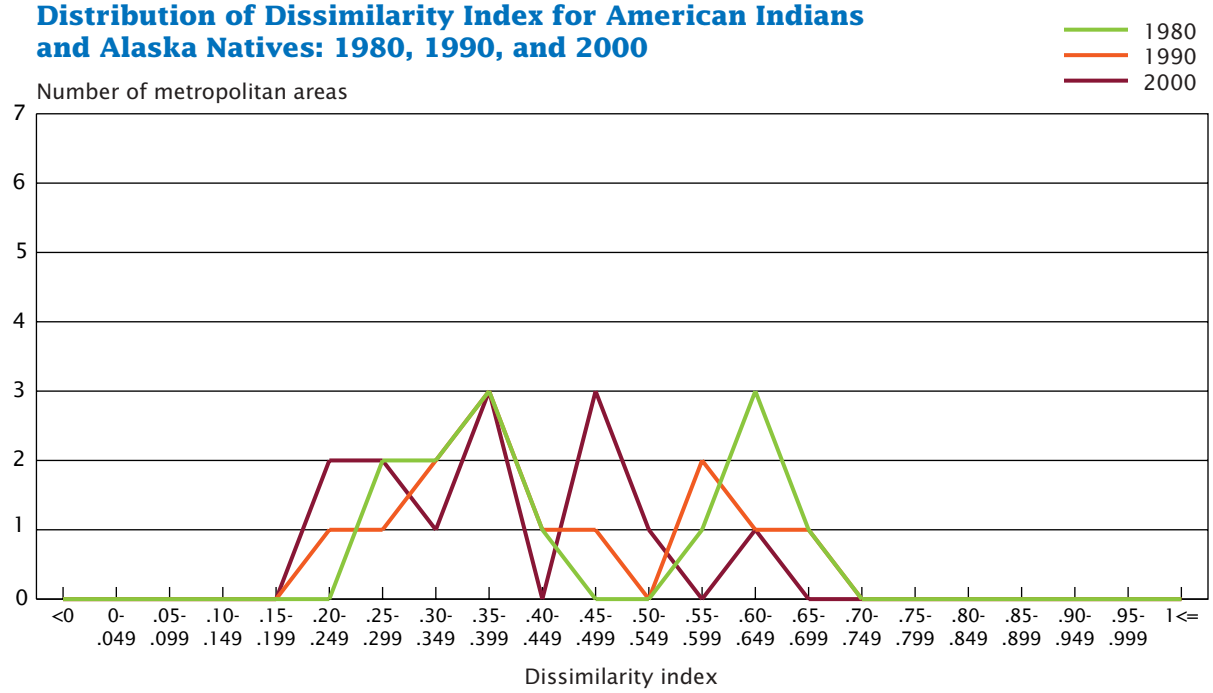
Index, year, and percent change	All metropolitan areas (weighted average)	Selected metropolitan areas					
		Weighted average	Minimum	25th percentile	Median	75th percentile	Maximum
Dissimilarity Index							
1980	0.373	0.414	0.252	0.257	0.351	0.602	0.655
1990	0.368	0.404	0.228	0.270	0.390	0.562	0.667
2000	0.333	0.390	0.213	0.237	0.472	0.474	0.607
Percent change							
1980-1990	–1.4	–2.5	–9.3	5.2	10.8	–6.7	1.8
1990-2000	–9.5	–3.6	–6.8	–12.2	21.3	–15.7	–9.0
1980-2000	–10.8	–6.0	–15.5	–7.6	34.4	–21.3	–7.4
Isolation Index							
1980	0.082	0.177	0.037	0.054	0.080	0.401	0.505
1990	0.102	0.188	0.050	0.079	0.107	0.349	0.463
2000	0.103	0.205	0.092	0.161	0.172	0.261	0.416
Percent change							
1980-1990	24.0	5.9	35.4	46.2	33.0	–13.0	–8.3
1990-2000	0.8	9.3	85.0	105.0	61.0	–25.2	–10.2
1980-2000	25.0	15.8	150.6	199.8	114.3	–34.9	–17.7
Delta Index							
1980	0.695	0.673	0.454	0.561	0.711	0.788	0.924
1990	0.685	0.674	0.442	0.552	0.658	0.808	0.918
2000	0.676	0.699	0.451	0.642	0.716	0.813	0.892
Percent change							
1980-1990	–1.4	0.2	–2.6	–1.5	–7.5	2.5	–0.7
1990-2000	–1.4	3.7	2.1	16.3	8.8	0.6	–2.8
1980-2000	–2.8	3.8	–0.5	14.6	0.6	3.1	–3.5
Absolute Centralization Index							
1980	0.622	0.627	0.039	0.560	0.665	0.783	0.908
1990	0.619	0.646	0.059	0.583	0.603	0.828	0.904
2000	0.611	0.658	0.152	0.578	0.643	0.817	0.882
Percent change							
1980-1990	–0.5	3.0	50.7	4.2	–9.3	5.8	–0.5
1990-2000	–1.2	1.8	159.5	–0.8	6.7	–1.3	–2.4
1980-2000	–1.7	4.9	291.3	3.3	–3.3	4.4	–2.9
Spatial Proximity Index							
1980	1.197	1.376	1.005	1.014	1.031	1.925	2.785
1990	1.244	1.466	1.006	1.016	1.054	2.089	3.049
2000	1.077	1.164	1.017	1.031	1.051	1.356	1.666
Percent change							
1980-1990	4.0	6.5	0.1	0.2	2.2	8.5	9.5
1990-2000	–13.5	–20.6	1.1	1.4	–0.3	–35.1	–45.4
1980-2000	–10.0	–15.4	1.2	1.6	1.9	–29.6	–40.2

Note: Selected Metropolitan Areas (13 of 330) are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic. Segregation estimates are weighted by the size of the American Indian and Alaska Native population.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Figure 3-1a.

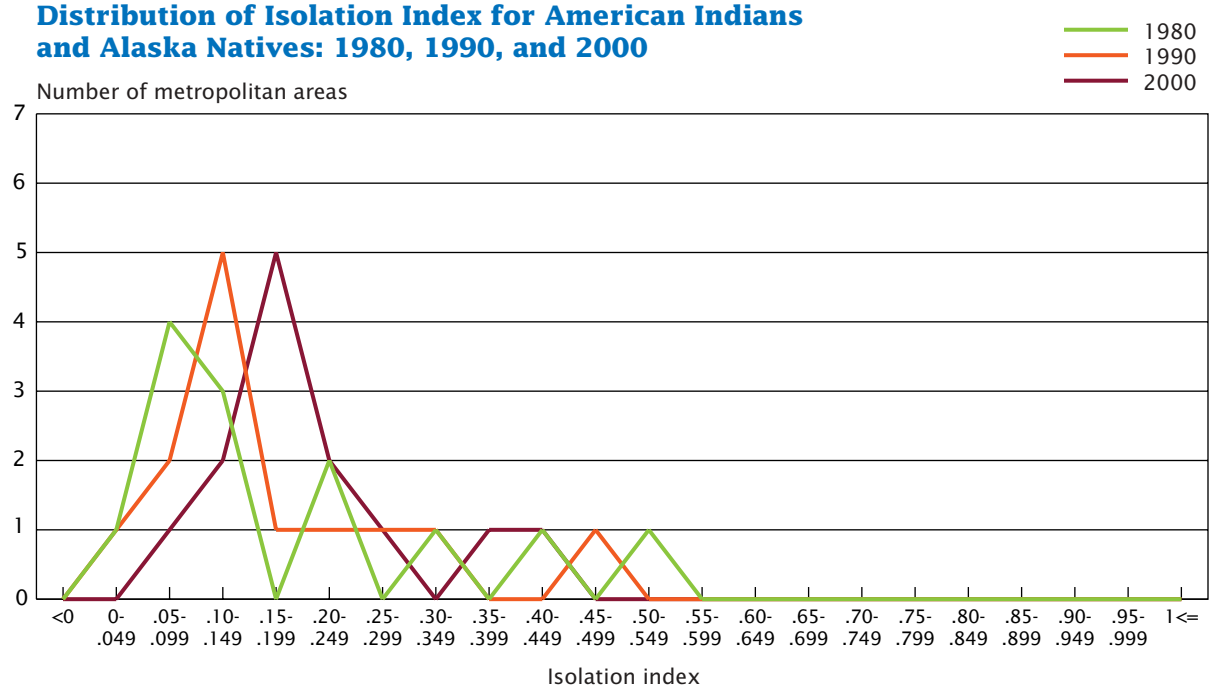
Distribution of Dissimilarity Index for American Indians and Alaska Natives: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 3-1b.

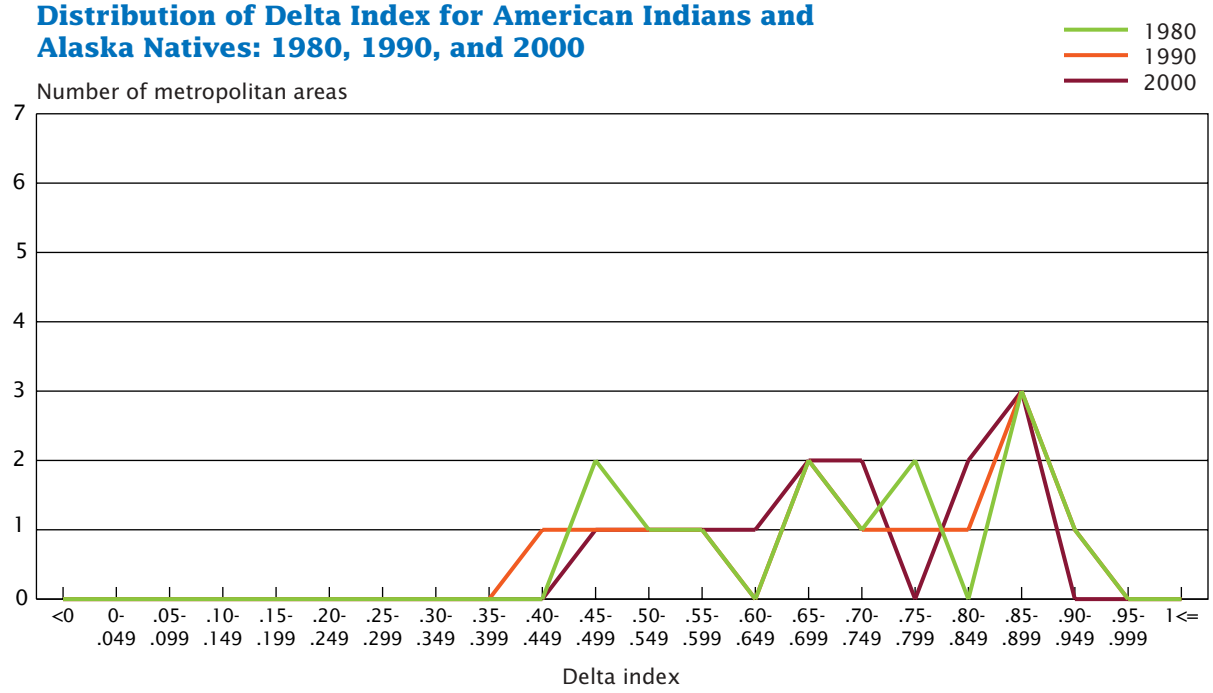
Distribution of Isolation Index for American Indians and Alaska Natives: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 3-1c.

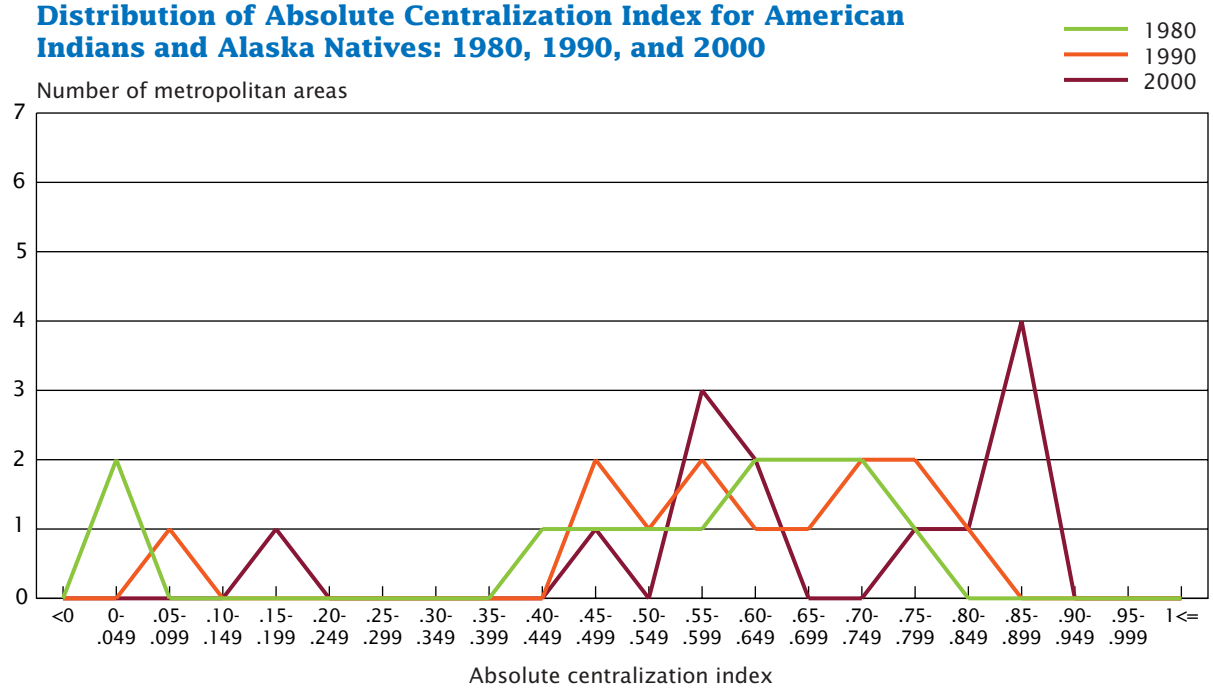
Distribution of Delta Index for American Indians and Alaska Natives: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 3-1d.

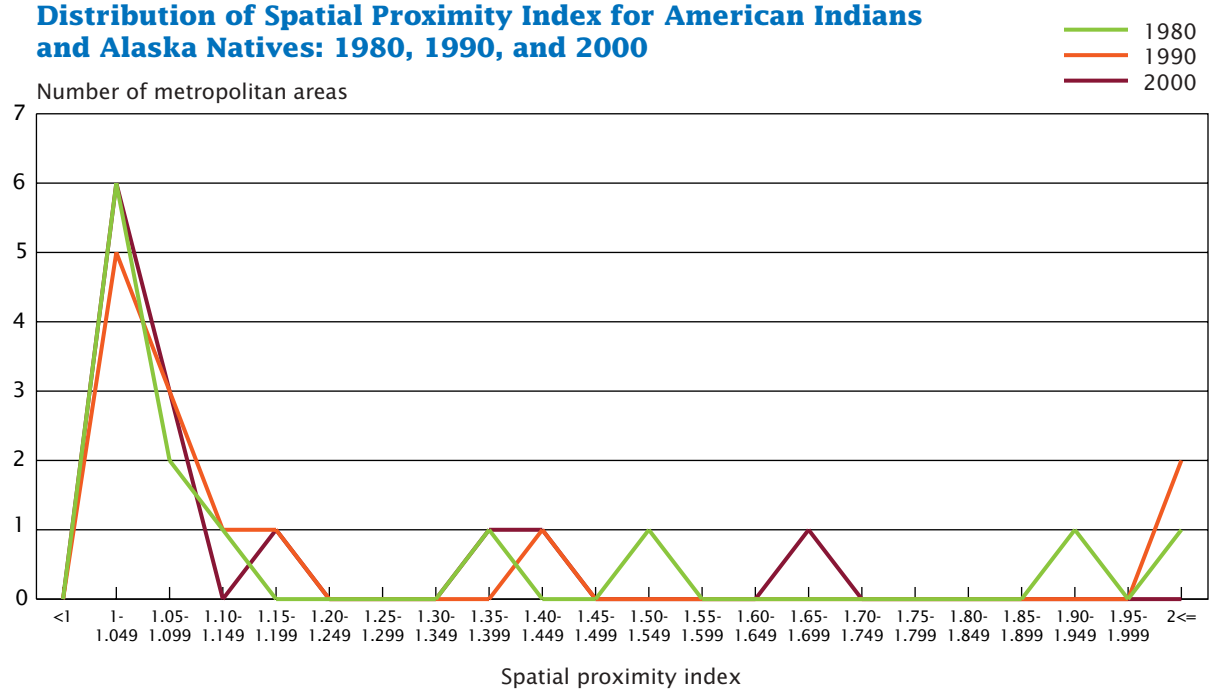
Distribution of Absolute Centralization Index for American Indians and Alaska Natives: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 3-1e.

Distribution of Spatial Proximity Index for American Indians and Alaska Natives: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

2000 period, with large declines in the 1990 to 2000 period overwhelming small increases in the 1980s. Isolation is the one measure which showed increases among both all and selected metropolitan areas between 1980 and 2000. Delta and absolute centralization showed mixed results, with declines among all metropolitan areas, but increases when only the selected MAs were considered.[5]

This mixed story seems to take place throughout the distribution of segregation, though different indexes display different patterns. The fact that there are only 13 selected metropolitan areas contributes to the skewed distributions shown in Figures 3-1a through 3-1e.

Table 3-2 shows how trends in segregation vary by metropolitan area characteristics. The middle-sized metropolitan areas (500,000 to 999,999 population) had lower residential segregation than larger or smaller ones across all five indexes, with the sole exception of the absolute centralization index in 1980. In all years, the four metropolitan areas in Oklahoma (in the South region) had substantially lower levels of residential segregation for all five indexes than the eight in the West.

There is no clear pattern between segregation and quartiles of percent American Indian/Alaska Native in the metropolitan area. American Indians and Alaska Natives were more likely to be evenly spread (dissimilarity index) but more likely to be centralized (absolute centralization index) in metropolitan areas with a low percentage (under 3 percent) or a higher percentage (over 4.4 percent) of American Indians and Alaska Natives. As the percentage of the group increases, they are less likely to share common neighborhoods (isolation index) with non-Hispanic Whites, but when

[5] As noted in Appendix A, American Indians and Alaska Natives are the one group for whom it matters, albeit modestly, as to whether group population counts include only those reporting being of that group "alone," vs. "alone or in combination" with another group. Whereas declines in segregation from 1980 to 2000 are registered across four of the five indexes for this group when the "alone or in combination" scheme is used, and all metropolitan areas are considered, this number falls to 3 when the "alone" category is used.

Table 3-2.
Residential Segregation Indexes for American Indians and Alaska Natives by Characteristics of Selected Metropolitan Areas: 1980, 1990, and 2000

(Weighted averages)

Characteristic	Number of metropolitan areas	Dissimilarity index			Isolation index			Delta index			Absolute centralization index			Spatial proximity index		
		1980	1990	2000	1980	1990	2000	1980	1990	2000	1980	1990	2000	1980	1990	2000
Selected metropolitan areas	13	0.414	0.404	0.390	0.177	0.188	0.205	0.673	0.674	0.699	0.627	0.646	0.658	1.376	1.466	1.164
Region																
Northeast	0	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
Midwest	1	0.398	0.399	0.384	0.110	0.132	0.177	0.924	0.918	0.885	0.908	0.899	0.871	1.049	1.053	1.050
South	4	0.286	0.283	0.253	0.076	0.101	0.144	0.584	0.587	0.587	0.530	0.542	0.561	1.036	1.051	1.053
West	8	0.487	0.488	0.465	0.236	0.250	0.239	0.715	0.726	0.755	0.673	0.709	0.706	1.574	1.769	1.228
Population Size																
1 Million or more	2	0.461	0.481	0.483	0.181	0.205	0.208	0.742	0.757	0.754	0.715	0.738	0.712	1.368	1.567	1.160
500,000-999,999	2	0.254	0.250	0.226	0.069	0.093	0.137	0.607	0.603	0.605	0.590	0.593	0.608	1.025	1.035	1.038
Under 500,000	9	0.510	0.493	0.422	0.278	0.277	0.281	0.647	0.660	0.714	0.549	0.601	0.625	1.728	1.843	1.318
Percent American Indian/Alaska Native (Quartiles)																
Under 3 percent	4	0.413	0.400	0.418	0.153	0.165	0.184	0.726	0.726	0.728	0.681	0.690	0.682	1.278	1.379	1.125
3-3.8 percent	3	0.526	0.539	0.456	0.171	0.151	0.187	0.664	0.624	0.584	0.224	0.323	0.389	1.208	1.127	1.139
3.8-4.4 percent	2	0.526	0.534	0.469	0.170	0.226	0.275	0.579	0.584	0.600	0.585	0.613	0.547	1.264	1.314	1.286
Over 4.4 percent	4	0.379	0.374	0.319	0.218	0.220	0.237	0.606	0.618	0.674	0.621	0.631	0.668	1.580	1.660	1.223
Percent Change (1980-2000) American Indian/Alaska Native (Quartiles)																
Under 88.7 percent	4	0.517	0.502	0.431	0.187	0.194	0.231	0.684	0.658	0.672	0.524	0.673	0.638	1.278	1.242	1.213
88.7-139.8 percent	2	0.580	0.549	0.461	0.469	0.435	0.392	0.554	0.562	0.701	0.519	0.527	0.603	2.558	2.818	1.597
139.8-188.3 percent	4	0.288	0.287	0.260	0.076	0.102	0.146	0.610	0.611	0.604	0.557	0.565	0.579	1.034	1.048	1.053
Over 188.3 percent	3	0.447	0.459	0.463	0.173	0.195	0.205	0.753	0.775	0.769	0.732	0.760	0.728	1.333	1.496	1.147

X Not applicable.

Note: Includes 13 Metropolitan Areas with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic. Characteristics of metropolitan areas as of 1980. Segregation estimates are weighted by the size of the American Indian and Alaska Native population.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

using other measures, patterns are more mixed.

No obvious pattern was observed between segregation and quartiles of the percent change in the American Indian and Alaska Native population from 1980 to 2000. For example, metropolitan areas with the greatest increase in the American Indian and Alaska Native population (over 188.3 percent) experienced increases in three of the five indexes, and metropolitan areas with the lowest growth experienced increases in two.

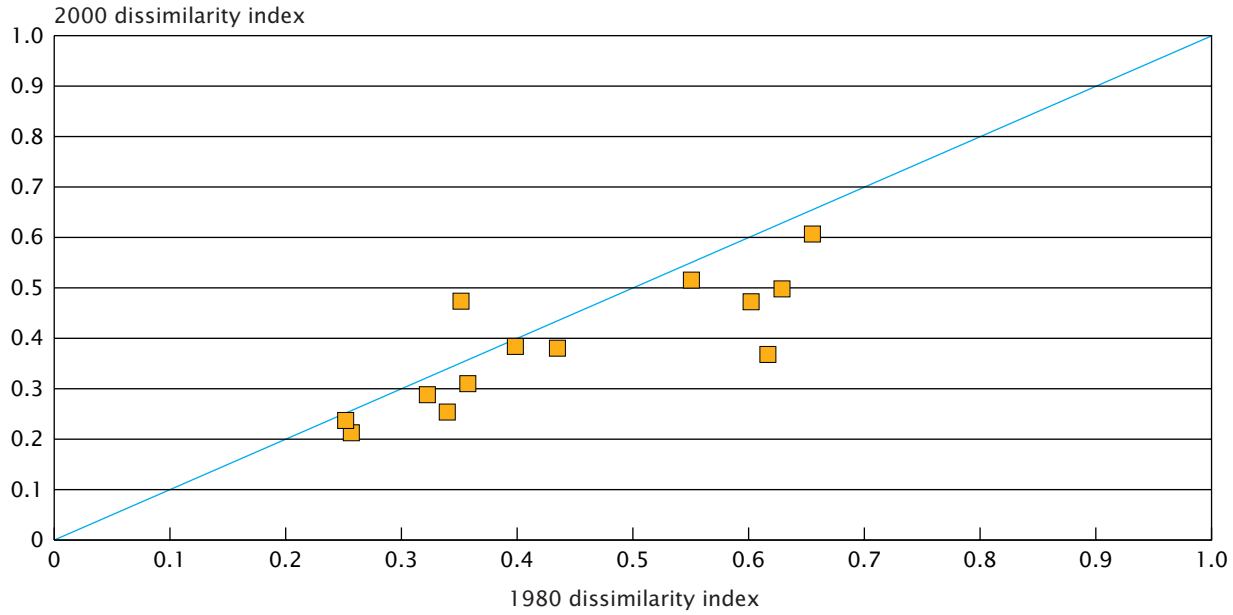
Figures 3-2a through 3-2e show two-decade changes for the individual metropolitan areas. The metropolitan areas near the upper right of the figures are those with higher levels of segregation. Those above the 45-degree line experienced increases in segregation between 1980 and 2000, and those below the line are those that experienced decreases over that period. The figures show that a great majority of metropolitan areas show only a small change (are clustered near the 45-degree line).[6] Only the dissimilarity index shows unmistakable signs of declining residential segregation.

Table 3-3 shows the distribution of the percentage change — the proportion of metropolitan areas with

[6] The analogous figures for 1980 versus 1990 and 1990 versus 2000 are presented in Appendix D.

Figure 3-2a.

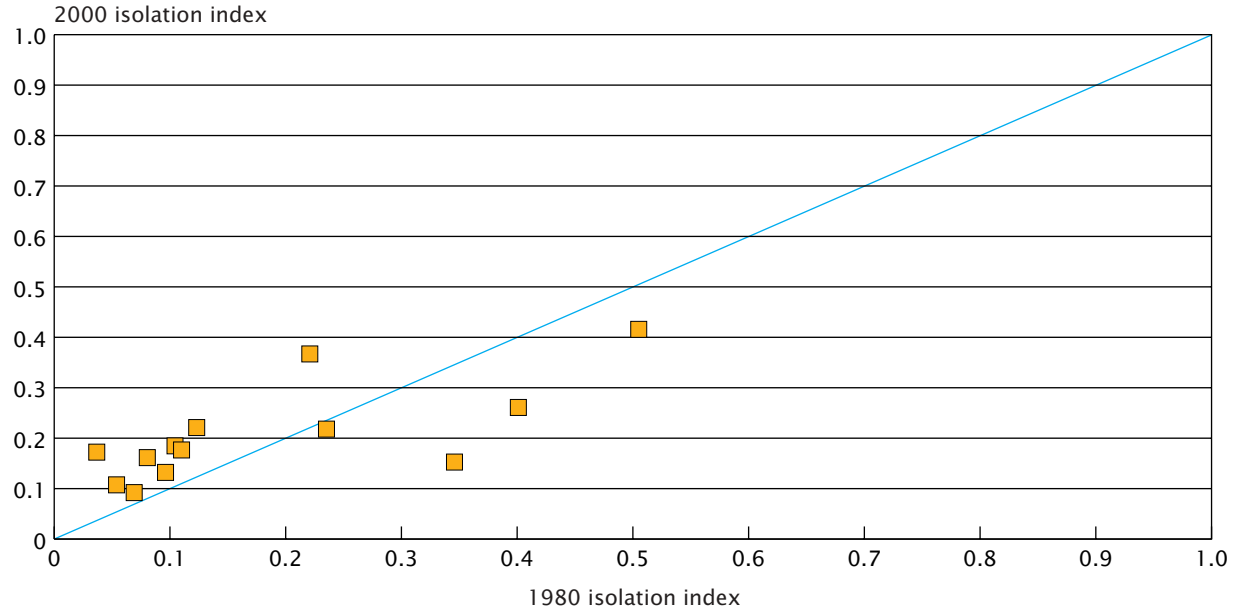
Dissimilarity Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 3-2b.

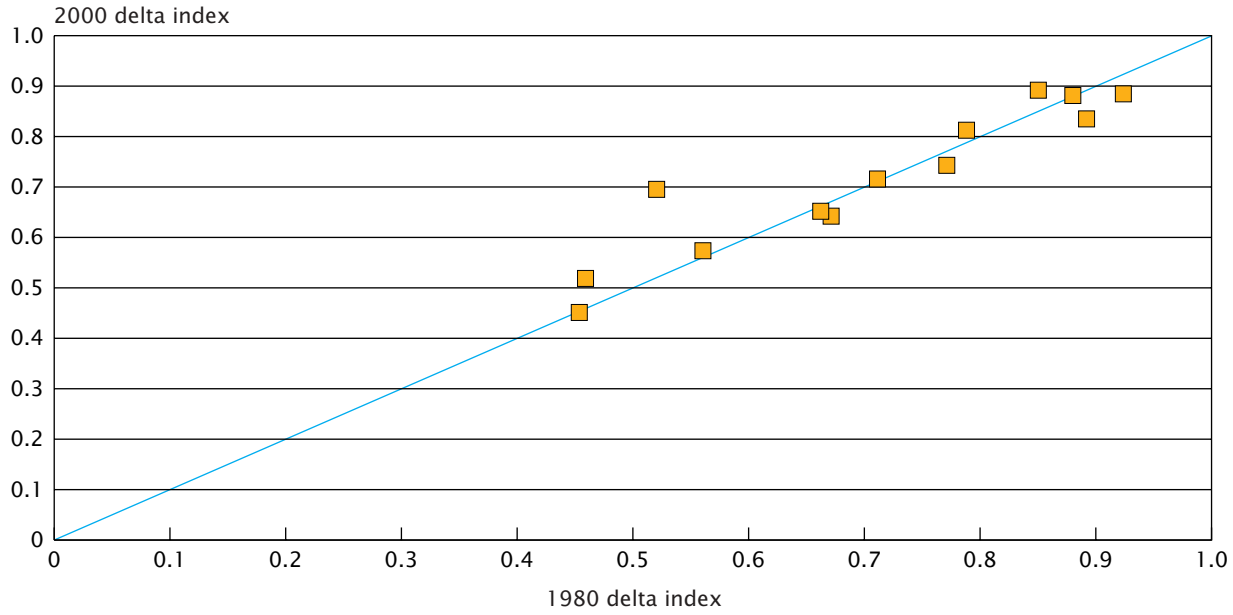
Isolation Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 3-2c.

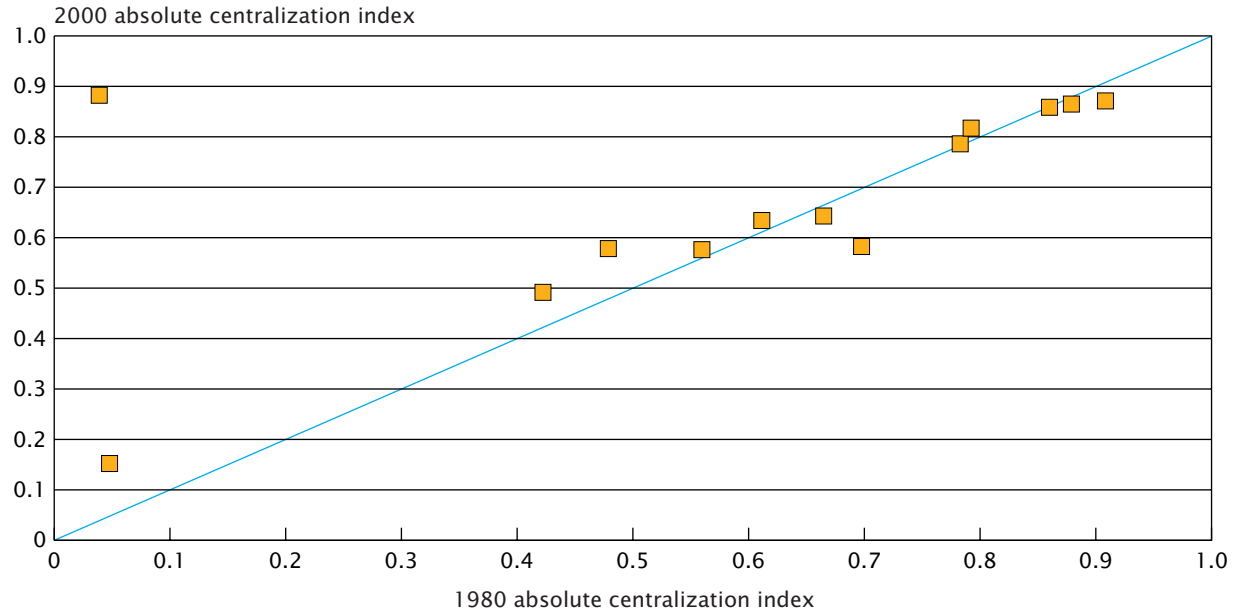
Delta Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 3-2d.

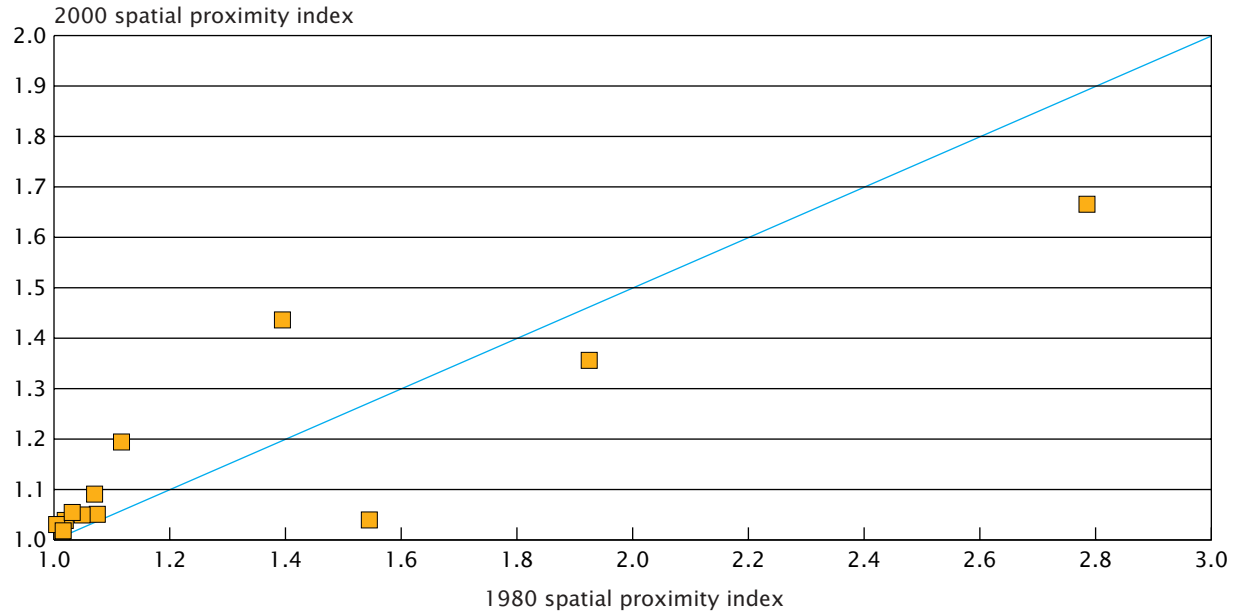
Absolute Centralization Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 3-2e.

Spatial Proximity Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

changes in five ranges. This table confirms the mixed message on trends in segregation of the previous analyses. For example, dissimilarity decreased by 5 percent or more between 1980 and 2000 in 11 of the 13 areas, while isolation increased by 5 percent or more over the same period in 9 of the 13 areas.

Table 3-4 presents the levels and Table 3-5 presents the change in each residential segregation index for the 13 metropolitan areas selected for study in this chapter. Each index in Table 3-4 is ranked by their 2000 score to obtain the averaged 2000 ranks. The averaged ranks are then ordered to obtain an overall rank. Similarly in Table 3-5, the 1980-2000 change is ranked for each index to obtain the averaged 1980-2000 change ranks. The averaged 1980-2000 change ranks are then ordered to obtain an overall rank. The rankings indicate highest to lower segregation in ascending order for an MSA/PMSA. Using the dissimilarity index alone, Yakima was the most segregated metropolitan area for American Indian and Alaska Natives in 2000, followed by Fort Smith and Phoenix-Mesa. The least segregated in 2000 was Oklahoma City, followed by Tulsa and Lawton (see Table 3-4). When all five indexes are used to rank the areas, the most segregated is Phoenix-Mesa, followed by Yakima, and then Albuquerque and Rapid City, which are tied. The least segregated in 2000 was Oklahoma City, followed by Lawton and Tulsa. Figures 3-3 and 3-4 show the actual settlement patterns of Phoenix-Mesa and Oklahoma City, respectively.

Yuma showed the largest decline in dissimilarity, 40 percent, between 1980 and 2000 (see Table 3-5). It also tied in ranking for first overall in reductions, with Great Falls, a difference of one average rank or less from Phoenix-Mesa and Rapid City. Los Angeles-Long Beach showed the biggest (and only) increase in dissimilarity over the 1980 to 2000 period. Overall, Tulsa and Fort Smith showed the greatest increase in residential segregation over the 1980-2000 period (they were tied in average rank), followed by Los Angeles-Long Beach (less than one average rank different).

Table 3-3.
Distribution of Percent Change in Residential Segregation Indexes for American Indians and Alaska Natives: 1980-2000

Time period change	Dissimilarity index		Isolation index		Delta index		Absolute centralization index		Spatial proximity index	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1980-1990										
Increase of 5 percent or more . .	4	31	9	69	1	8	3	23	3	23
Increase of 1-4.99 percent	2	15	0	0	4	31	5	38	5	38
Change of less than 1 percent .	1	8	0	0	2	15	1	8	4	31
Decrease of 1-4.99 percent	1	8	1	8	6	46	4	31	0	0
Decrease of 5 percent or more .	5	38	3	23	0	0	0	0	1	8
1990-2000										
Increase of 5 percent or more . .	1	8	10	77	2	15	4	31	0	0
Increase of 1-4.99 percent	0	0	0	0	3	23	2	15	2	15
Change of less than 1 percent .	0	0	0	0	2	15	2	15	8	62
Decrease of 1-4.99 percent	1	8	1	8	4	31	4	31	1	8
Decrease of 5 percent or more .	11	85	2	15	2	15	1	8	2	15
1980-2000										
Increase of 5 percent or more . .	1	8	9	69	2	15	4	31	1	8
Increase of 1-4.99 percent	0	0	0	0	3	23	3	23	5	38
Change of less than 1 percent .	0	0	0	0	3	23	2	15	3	23
Decrease of 1-4.99 percent	1	8	0	0	4	31	3	23	1	8
Decrease of 5 percent or more .	11	85	4	31	1	8	1	8	3	23

Note: Includes 13 Metropolitan Areas with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

The story of American Indian and Alaska Native residential segregation over the 1980 to 2000 period is a mixed one. The most widely used measure of residential segregation, dissimilarity, indicates a moderate reduction of 6 to 11 percent in segregation in 1980-1990 and again, a moderate reduction of 4 to 10 percent in 1990-2000, both for all metropolitan areas and selected metropolitan areas. Other residential segregation indexes show different patterns, however, with some indexes showing an increase in segregation. Overall, metropolitan areas in Oklahoma seem the least segregated for American Indian and Alaska Natives.

Table 3-4.
Residential Segregation for American Indians and Alaska Natives in Selected Metropolitan Areas: 1980, 1990, and 2000

MSA/PMSA Name	Dissimilarity index				Isolation index				Delta index				Absolute centralization index				Spatial proximity index				Average 2000 rank	Rank of averaged 2000 rank
	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank		
Albuquerque, NM MSA	0.602	0.562	0.472	5	0.505	0.463	0.416	1	0.521	0.535	0.695	8	0.479	0.494	0.578	10	2.785	3.049	1.666	1	5.0	3
Anchorage, AK MSA	0.322	0.319	0.288	10	0.104	0.128	0.185	6	0.850	0.890	0.892	1	0.879	0.904	0.865	3	1.019	1.035	1.039	10	6.0	6
Bellingham, WA MSA	0.435	0.456	0.380	7	0.235	0.224	0.218	5	0.771	0.759	0.743	6	0.783	0.781	0.786	6	1.070	1.088	1.091	5	5.8	5
Fort Smith, AR-OK MSA	0.551	0.607	0.515	2	0.123	0.177	0.221	4	0.454	0.495	0.451	13	0.048	0.059	0.152	13	1.117	1.178	1.194	4	7.2	8
Great Falls, MT MSA	0.357	0.393	0.310	9	0.069	0.081	0.092	13	0.892	0.895	0.835	4	0.860	0.848	0.859	4	1.014	1.016	1.017	13	8.6	10
Lawton, OK MSA	0.340	0.318	0.254	11	0.096	0.106	0.132	11	0.459	0.442	0.519	12	0.422	0.454	0.492	12	1.075	1.105	1.051	7	10.6	12
Los Angeles-Long Beach, CA PMSA	0.351	0.390	0.474	4	0.037	0.050	0.172	8	0.711	0.703	0.716	7	0.665	0.641	0.643	7	1.005	1.006	1.031	11	7.4	9
Oklahoma City, OK MSA	0.257	0.228	0.213	13	0.054	0.079	0.107	12	0.671	0.658	0.642	10	0.560	0.583	0.576	11	1.016	1.016	1.018	12	11.6	13
Phoenix-Mesa, AZ MSA	0.629	0.566	0.498	3	0.401	0.349	0.261	3	0.788	0.808	0.813	5	0.792	0.828	0.817	5	1.925	2.089	1.356	3	3.8	1
Rapid City, SD MSA	0.398	0.399	0.384	6	0.110	0.132	0.177	7	0.924	0.918	0.885	2	0.908	0.899	0.871	2	1.049	1.053	1.050	8	5.0	3
Tulsa, OK MSA	0.252	0.270	0.237	12	0.080	0.107	0.161	9	0.561	0.552	0.574	11	0.611	0.603	0.634	8	1.031	1.054	1.055	6	9.2	11
Yakima, WA MSA	0.655	0.667	0.607	1	0.221	0.299	0.367	2	0.662	0.671	0.652	9	0.698	0.711	0.582	9	1.395	1.442	1.436	2	4.6	2
Yuma, AZ MSA	0.617	0.428	0.368	8	0.346	0.139	0.153	10	0.880	0.858	0.881	3	0.039	0.870	0.882	1	1.545	1.039	1.040	9	6.2	7

Note: Includes 13 Metropolitan Areas with 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Table 3-5.
Percent Change in Residential Segregation Indexes for American Indians and Alaska Natives in Metropolitan Areas: 1980-2000

MSA/PMSA name	Dissimilarity index				Isolation index				Delta index				Absolute centralization index				Spatial proximity index				Rank of change ranks averaged
	1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990 percent change	1990-2000 change	1980-2000		1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990 percent change	1990-2000 percent change	1980-2000		
			Percent change	Rank			Percent change	Rank			Percent change	Rank			Percent change	Rank			Percent change	Rank	
Albuquerque, NM MSA	–6.7	–15.9	–21.5	11	–8.3	–10.2	–17.7	11	2.8	29.9	33.6	1	3.1	17.2	20.8	3	9.5	–45.4	–40.2	13	7
Anchorage, AK MSA	–1.0	–9.7	–10.6	6	22.6	44.4	77.1	5	4.7	0.2	4.9	3	2.9	–4.3	–1.6	10	1.6	0.3	1.9	6	4
Bellingham, WA MSA	4.8	–16.5	–12.5	7	–4.7	–2.7	–7.3	10	–1.6	–2.1	–3.7	10	–0.2	0.7	0.4	8	1.7	0.3	1.9	5	9
Fort Smith, AR-OK MSA	10.2	–15.0	–6.4	4	43.8	24.9	79.6	4	9.0	–8.8	–0.5	8	22.7	159.5	218.4	2	5.5	1.3	6.9	1	1
Great Falls, MT MSA	9.9	–21.0	–13.2	8	16.6	14.3	33.3	9	0.4	–6.7	–6.4	13	–1.4	1.2	–0.2	9	0.2	0.0	0.3	7	12
Lawton, OK MSA	–6.2	–20.3	–25.3	12	10.0	24.9	37.4	8	–3.7	17.4	13.0	2	7.4	8.4	16.4	4	2.9	–4.9	–2.2	10	6
Los Angeles-Long Beach, CA PMSA	10.8	21.6	34.7	1	35.4	246.2	368.9	1	–1.2	1.9	0.6	6	–3.6	0.3	–3.3	11	0.1	2.5	2.6	3	3
Oklahoma City, OK MSA	–11.1	–6.8	–17.1	9	46.2	36.4	99.5	3	–2.0	–2.4	–4.3	12	4.2	–1.2	3.0	7	0.0	0.2	0.2	8	7
Phoenix-Mesa, AZ MSA	–10.1	–12.0	–20.8	10	–13.0	–25.2	–34.9	12	2.5	0.6	3.1	4	4.6	–1.3	3.2	6	8.5	–35.1	–29.6	11	11
Rapid City, SD MSA	0.2	–3.8	–3.6	2	20.1	33.7	60.6	7	–0.7	–3.6	–4.2	11	–1.0	–3.1	–4.1	12	0.4	–0.3	0.1	9	10
Tulsa, OK MSA	7.2	–12.2	–5.8	3	33.0	50.9	100.8	2	–1.5	3.9	2.3	5	–1.4	5.2	3.7	5	2.2	0.1	2.2	4	1
Yakima, WA MSA	1.8	–9.0	–7.4	5	35.4	22.7	66.2	6	1.2	–2.8	–1.6	9	1.9	–18.1	–16.5	13	3.4	–0.4	3.0	2	5
Yuma, AZ MSA	–30.6	–14.0	–40.3	13	–59.8	9.9	–55.9	13	–2.5	2.7	0.1	7	2136.1	1.4	2167.8	1	–32.8	0.1	–32.7	12	12

Note: Includes 13 Metropolitan Areas with 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Figure 3-3.

The Most Segregated Metropolitan Area for American Indians and Alaska Natives in 2000: Phoenix-Mesa, AZ MSA

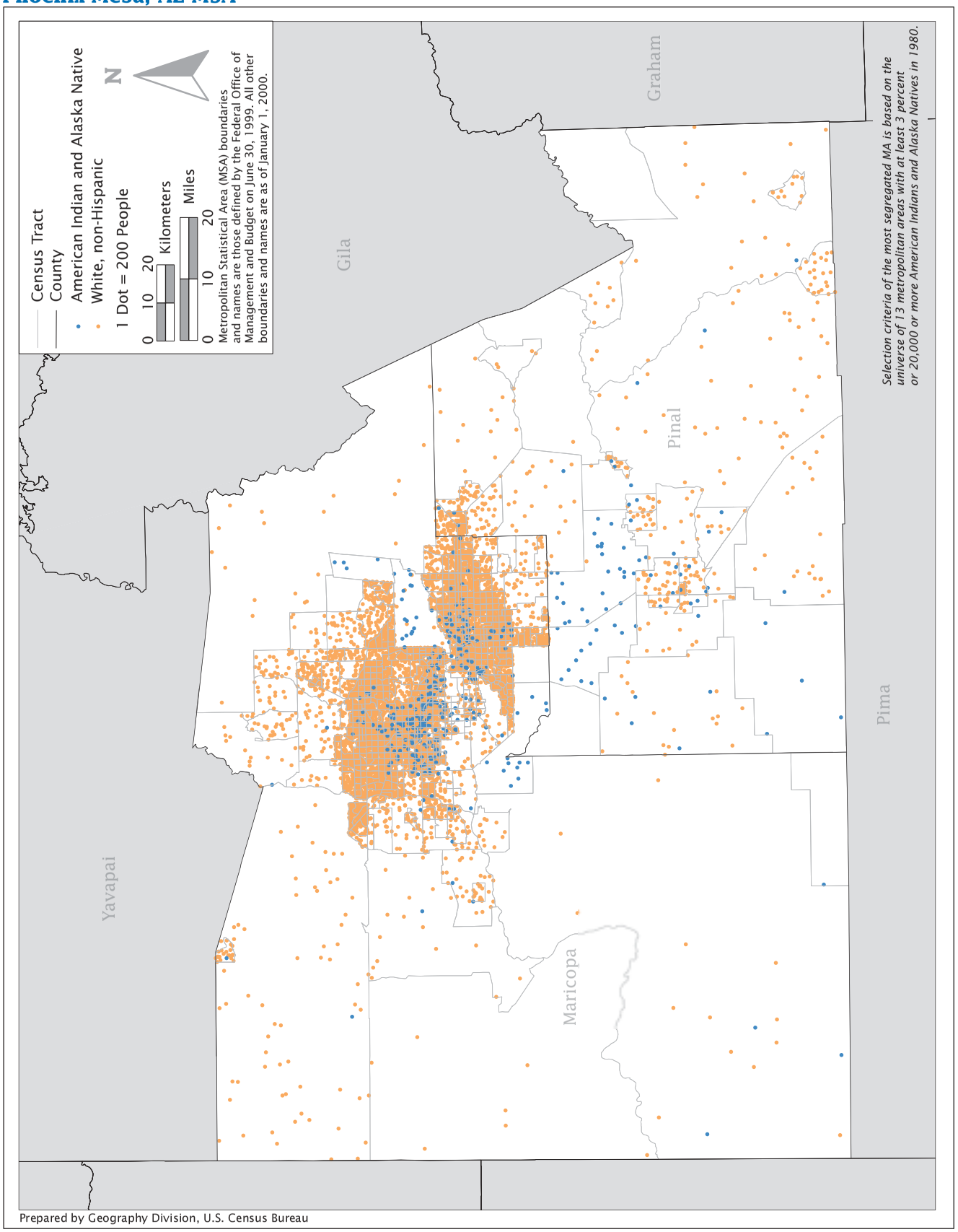
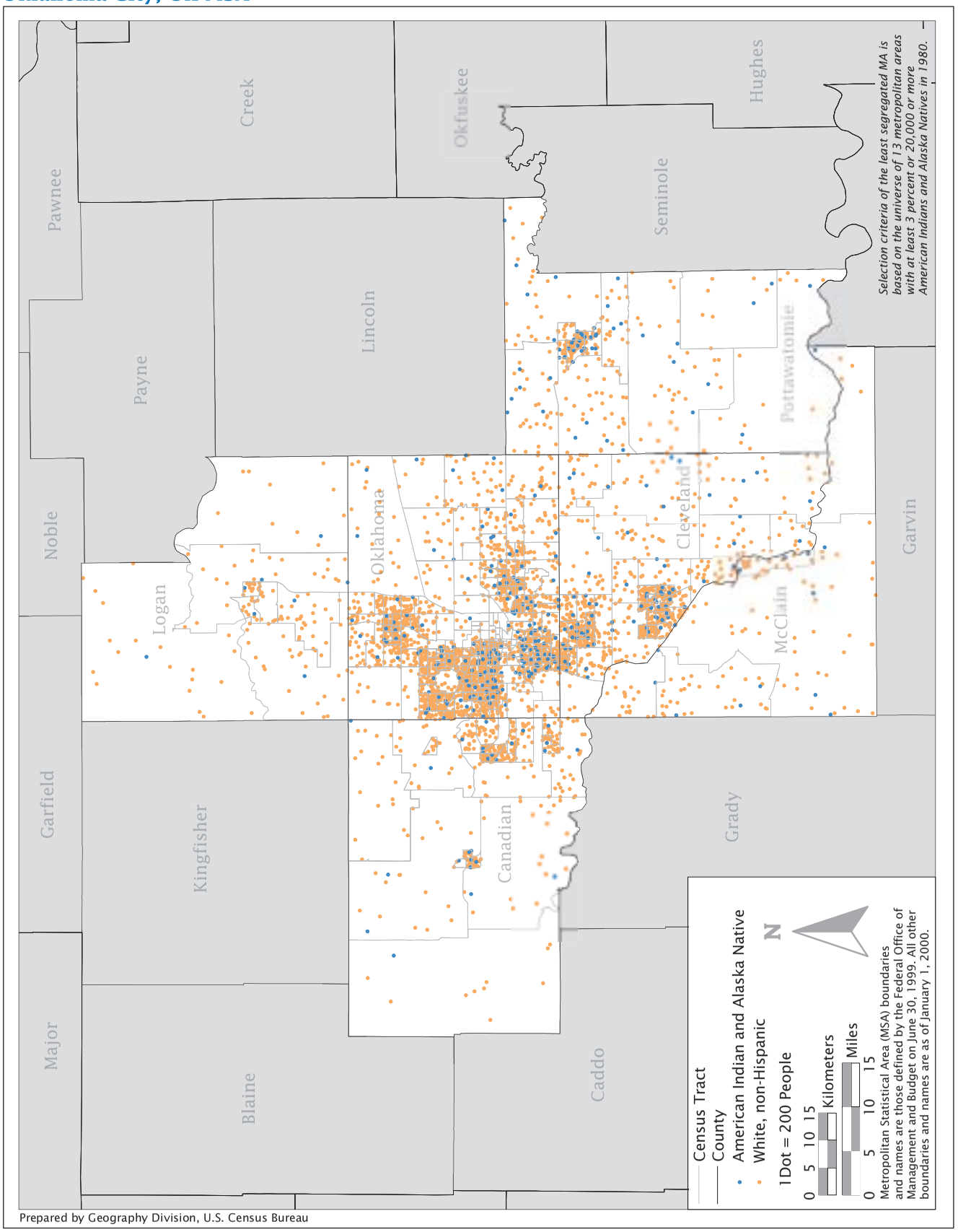


Figure 3-4.

The Least Segregated Metropolitan Area for American Indians and Alaska Natives in 2000: Oklahoma City, OK MSA



Prepared by Geography Division, U.S. Census Bureau

CHAPTER 4

RESIDENTIAL SEGREGATION OF ASIANS, NATIVE HAWAIIANS, AND OTHER PACIFIC ISLANDERS: 1980-2000

CHAPTER 4

RESIDENTIAL SEGREGATION OF ASIANS, NATIVE HAWAIIANS, AND OTHER PACIFIC ISLANDERS: 1980-2000

The Asian and Pacific Islander population was the one racial or ethnic group whose composition and count was profoundly affected by the revision of OMB Statistical Directive 15 in 1997. For Census 2000, Asians and Pacific Islanders were divided into two major race groups: 1) Asians, and 2) Native Hawaiians and Other Pacific Islanders (also referred to as Pacific Islanders). For historical comparability, we focus on results based on the combined group. However, since this change will persist, we also present 2000 statistics for the two new groups separately.

Like American Indians and Alaska Natives, Asians and Pacific Islanders do not constitute a large proportion of the U.S. population, however, like American Indians and Alaska Natives, that proportion is growing. Asians and Pacific Islanders grew from 3.5 million (1.5 percent of the U.S. population) in 1980 to 7.3 million (2.9 percent) in 1990. In Census 2000, there were 11.9 million Asians (4.2 percent of the U.S. population) and nearly 900,000 Pacific Islanders (0.3 percent).[1]

Asians and Pacific Islanders also tended to be concentrated in the West, but they are much more urban than non-Hispanic Whites. Of the Asians and Pacific Islanders population, 92.2 percent were in metropolitan areas in 1980, and increasing to 94.4 percent in 1990. In Census 2000, 95.1 percent of Asians and 83.3 percent of Pacific Islanders lived in metropolitan areas. Therefore, we were able to include substantially more metropolitan areas in our analysis than we could for American Indians and Alaska Natives.

When either all metropolitan areas or selected ones (30 metropolitan areas had at least 3 percent or 20,000 or more Asians and Pacific Islanders) were considered, the dissimilarity, isolation, and spatial proximity indexes indicated increases in the residential segregation of Asians and Pacific Islanders between 1980 and 2000. The delta index indicated no change, and the absolute centralization index showed a small decline (Table 4-1).[2] The increase in isolation over the 1980-2000 period was particularly pronounced. An examination of the full distribution of the indexes for the selected metropolitan areas likewise showed an increase for dissimilarity, spatial proximity, and isolation over much of their range (Figure 4-1(a-e)). There were indications of a small decline in absolute centralization, and a less clear pattern for delta. Figure 4-2 (a-e), which plots 1980 index values versus the 2000 values, further confirmed these patterns.

Nineteen of the 30 selected metropolitan areas were in the West region (Table 4-2). Patterns of change in the West mirrored the summary above, with a few relatively minor differences as compared with the rest of the country. Asians and Pacific Islanders in the West in 2000 were more isolated than Asians and Pacific Islanders in the other regions, a bit less centralized, and lived slightly closer to one another (spatial proximity).

There seemed to be noticeable differences by size of metropolitan area. The isolation index was nearly twice as high for medium-sized areas (500,000 to 999,999) than for larger or smaller areas, though there were only three of them, compared with 20 large areas and 7 small ones. In contrast, three of the five indexes — delta, absolute centralization, and spatial proximity — were smallest for the medium-sized areas.

[1] The 2000 figures includes all people who identified as being of the particular group alone or in combination with another race. The number of people who identified as Asian alone was 10.2 million (3.6 percent of the total U.S. population), and the analogous figure for Native Hawaiian and Other Pacific Islanders was just under 400 thousand (0.1 percent of the population).

[2] Using the approach described in Chapter 2 to determine substantive changes as one percent of the index range over three years, the following critical values are used: dissimilarity, 0.003; isolation, 0.007; delta, 0.004; absolute centralization, 0.006; spatial proximity, 0.002.

Table 4-1.
Descriptive Statistics for Residential Segregation Indexes for Asians and Pacific Islanders: 1980, 1990, and 2000

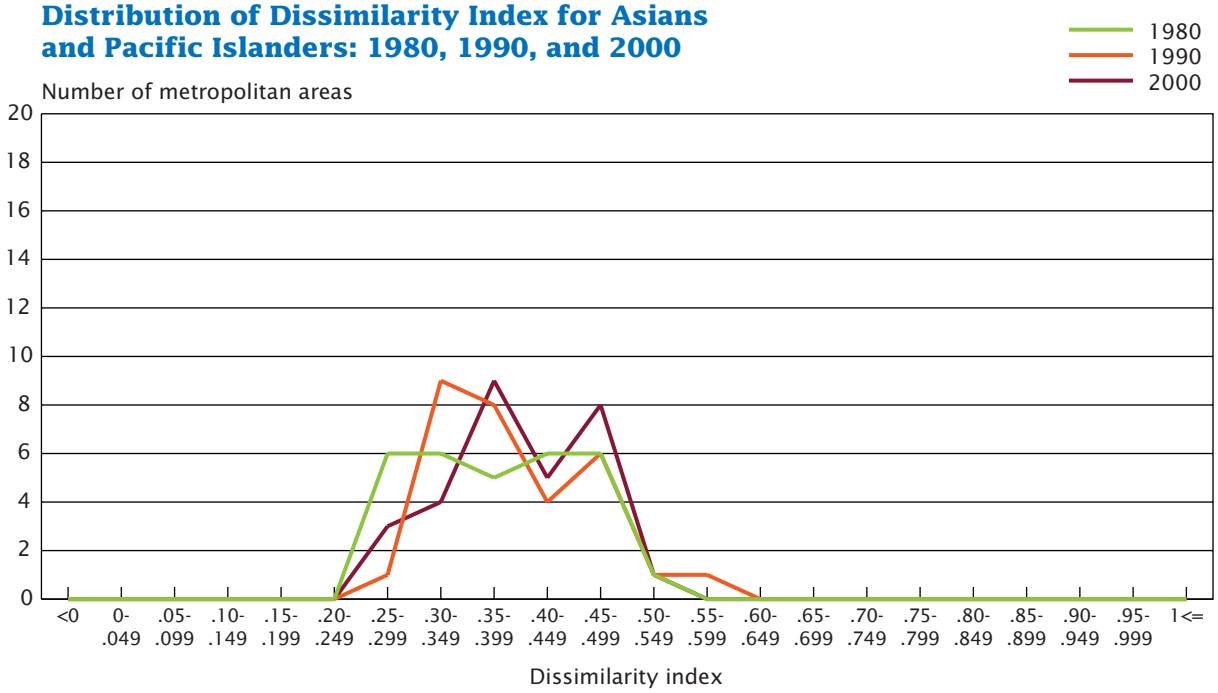
Index, year, and percent change	All metropolitan areas (weighted average)	Selected metropolitan areas					
		Weighted average	Minimum	25th percentile	Median	75th percentile	Maximum
Dissimilarity Index							
1980	0.405	0.422	0.268	0.390	0.424	0.468	0.511
1990	0.412	0.424	0.252	0.379	0.443	0.463	0.551
2000	0.411	0.433	0.256	0.397	0.436	0.477	0.505
Percent change							
1980-1990	1.5	0.4	–5.9	–2.7	4.6	–1.2	7.9
1990-2000	–0.2	2.1	1.5	4.5	–1.7	3.1	–8.3
1980-2000	1.4	2.5	–4.5	1.7	2.8	1.9	–1.1
Isolation Index							
1980	0.233	0.292	0.023	0.107	0.234	0.368	0.742
1990	0.264	0.330	0.054	0.157	0.328	0.405	0.750
2000	0.306	0.395	0.097	0.208	0.435	0.502	0.832
Percent change							
1980-1990	13.4	13.0	132.0	46.9	40.2	9.9	1.2
1990-2000	16.0	19.9	81.7	33.0	32.7	24.1	10.9
1980-2000	31.5	35.5	321.5	95.4	86.0	36.4	12.2
Delta Index							
1980	0.741	0.733	0.531	0.687	0.752	0.808	0.875
1990	0.753	0.742	0.525	0.691	0.757	0.807	0.886
2000	0.743	0.735	0.529	0.687	0.740	0.788	0.890
Percent change							
1980-1990	1.5	1.3	–1.1	0.5	0.7	–0.2	1.3
1990-2000	–1.3	–1.0	0.7	–0.4	–2.2	–2.4	0.5
1980-2000	0.3	0.3	–0.5	0.1	–1.6	–2.5	1.8
Absolute Centralization Index							
1980	0.701	0.700	0.336	0.554	0.766	0.799	0.883
1990	0.700	0.693	0.314	0.645	0.742	0.781	0.896
2000	0.683	0.672	0.291	0.653	0.736	0.774	0.880
Percent change							
1980-1990	–0.1	–1.1	6.6	16.4	–3.1	–2.3	1.5
1990-2000	–2.4	–2.9	–7.2	1.2	–0.8	–0.9	–1.9
1980-2000	–2.5	–4.0	13.3	17.8	–3.9	–3.1	–0.4
Spatial Proximity Index							
1980	1.057	1.071	1.005	1.041	1.063	1.123	1.130
1990	1.083	1.104	1.013	1.073	1.093	1.137	1.190
2000	1.096	1.124	1.024	1.072	1.113	1.154	1.222
Percent change							
1980-1990	2.4	3.1	0.7	3.1	2.8	1.3	5.3
1990-2000	1.2	1.8	1.1	–0.1	1.9	1.4	2.7
1980-2000	3.7	4.9	1.9	3.1	4.7	2.8	8.1

Note: Selected Metropolitan Areas (30 of 330) are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic. Segregation estimates are weighted by the size of the Asian and Pacific Islander population.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Figure 4-1a.

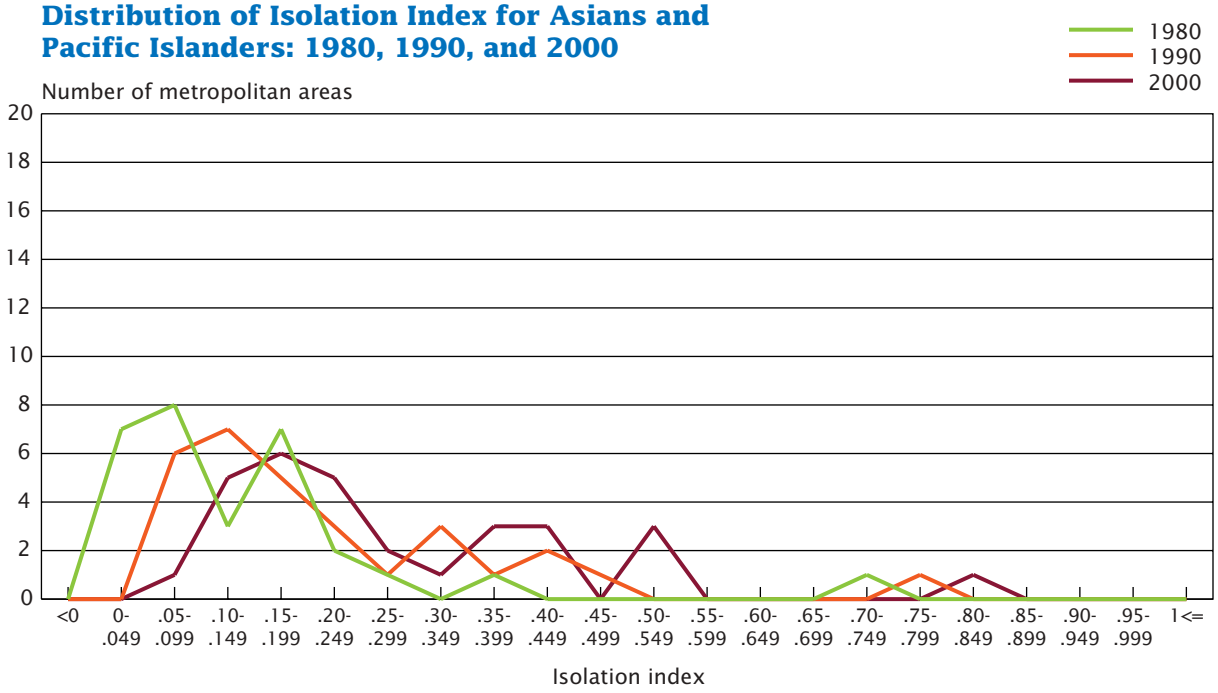
Distribution of Dissimilarity Index for Asians and Pacific Islanders: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-1b.

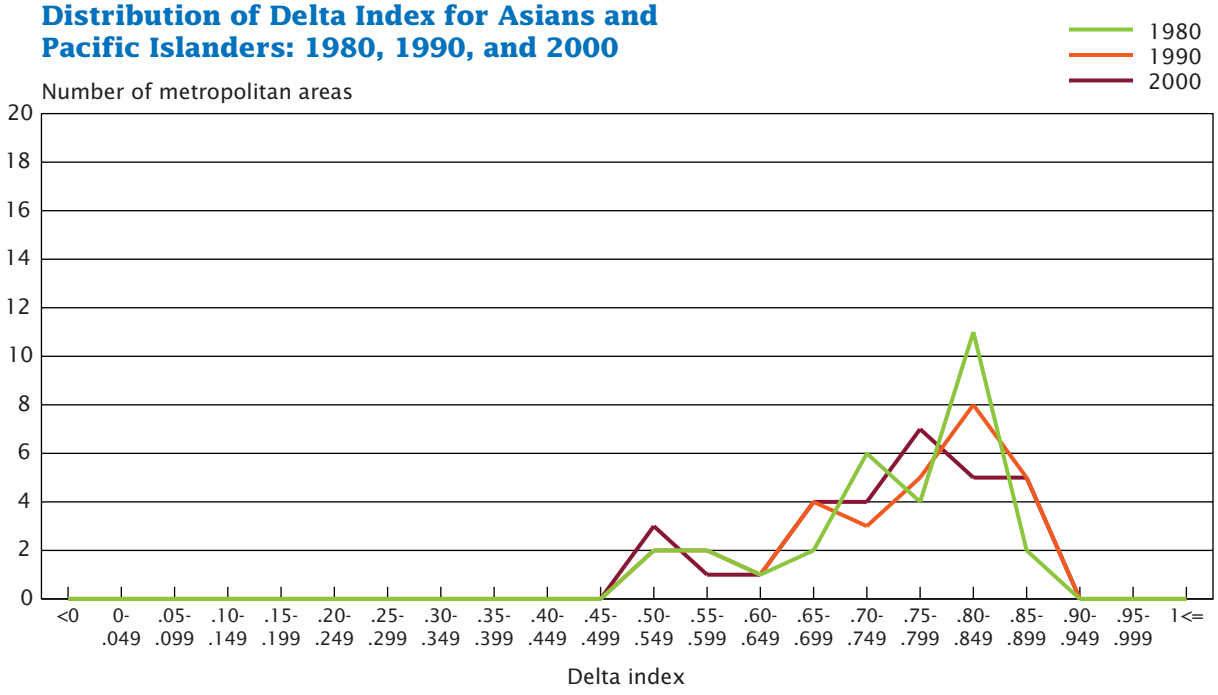
Distribution of Isolation Index for Asians and Pacific Islanders: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-1c.

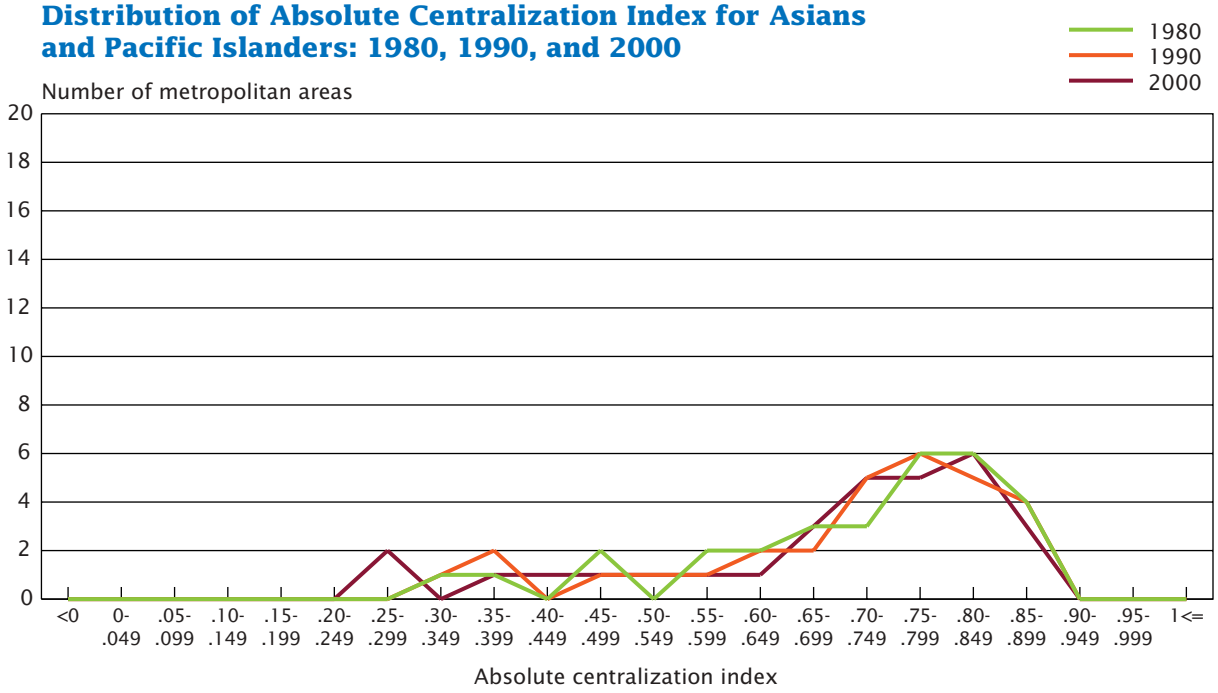
Distribution of Delta Index for Asians and Pacific Islanders: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-1d.

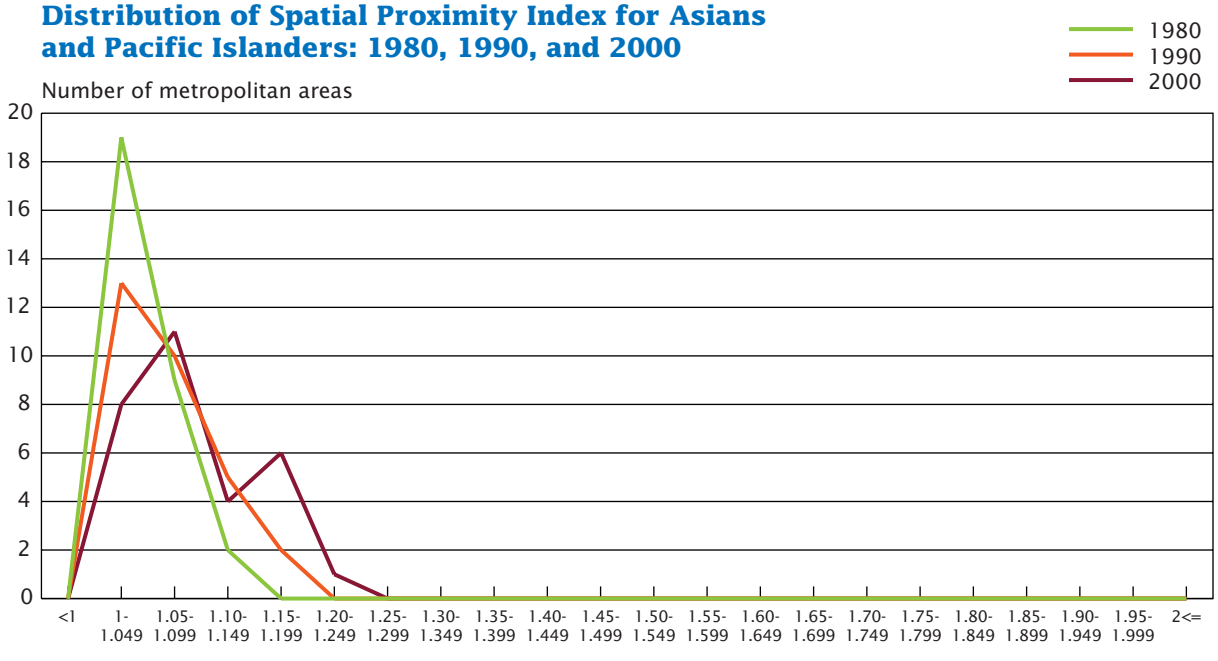
Distribution of Absolute Centralization Index for Asians and Pacific Islanders: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-1e.

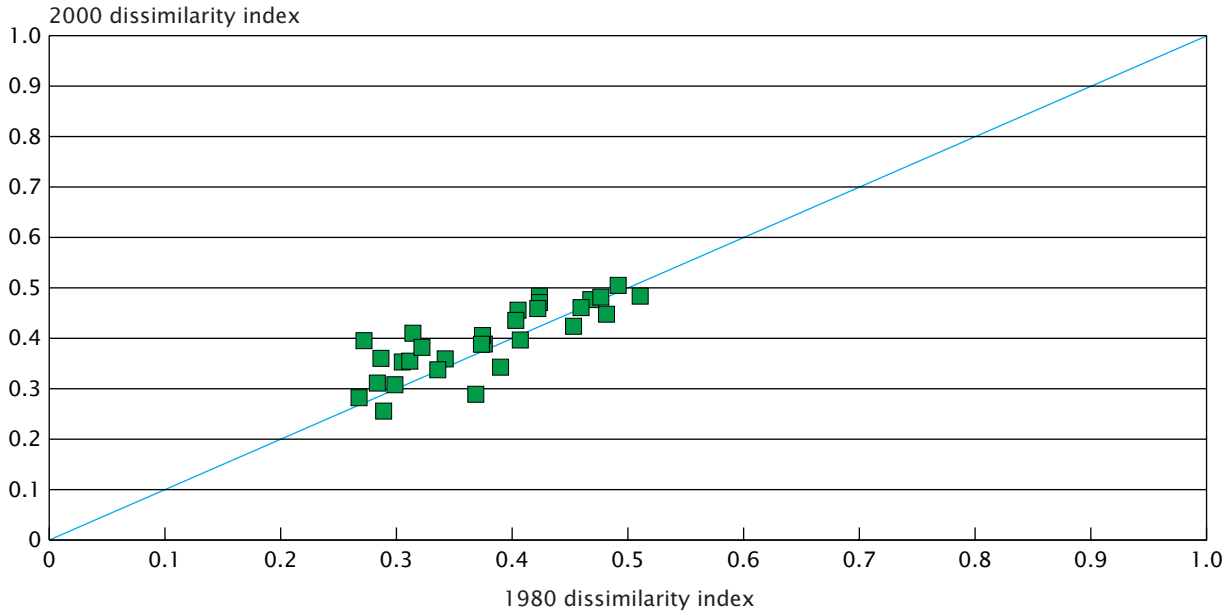
Distribution of Spatial Proximity Index for Asians and Pacific Islanders: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-2a.

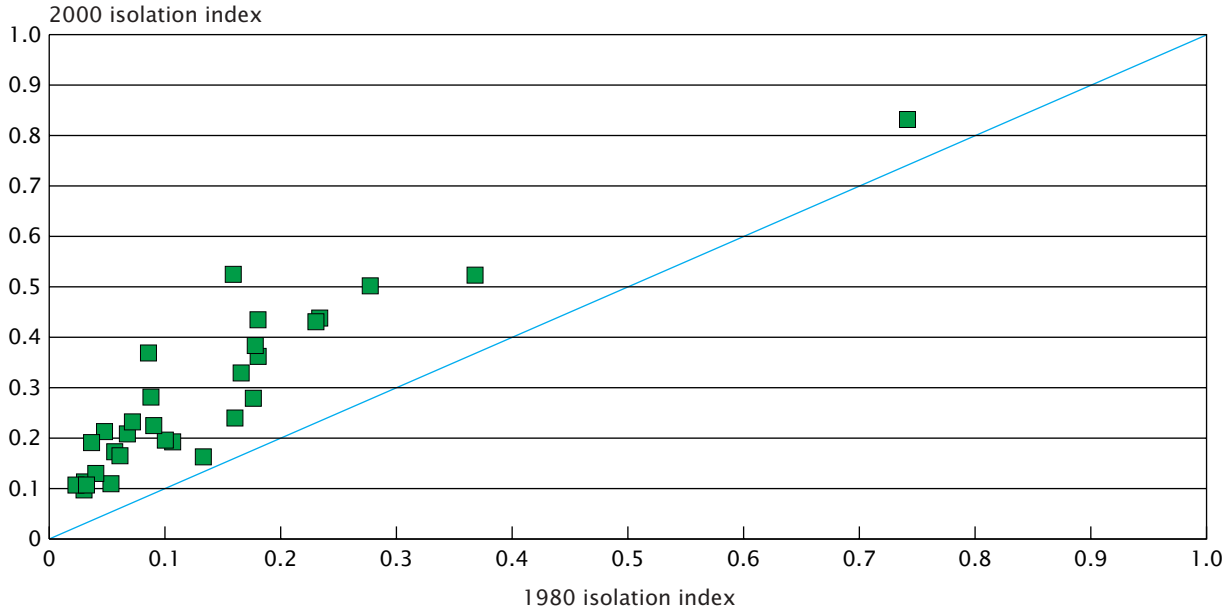
Dissimilarity Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-2b.

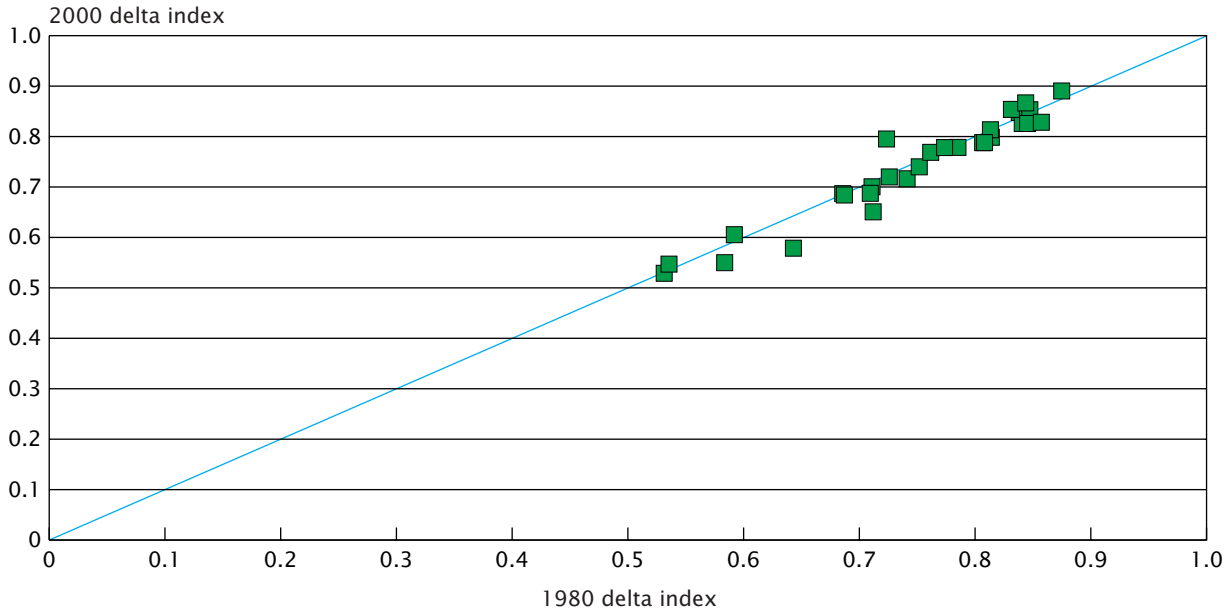
Isolation Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-2c.

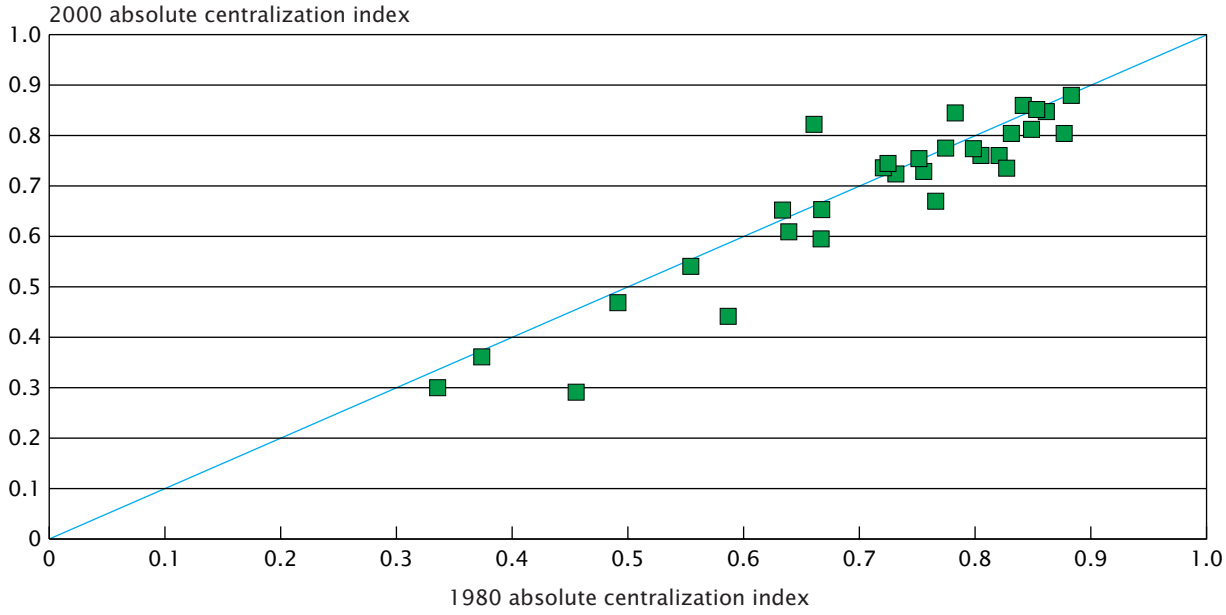
Delta Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-2d.

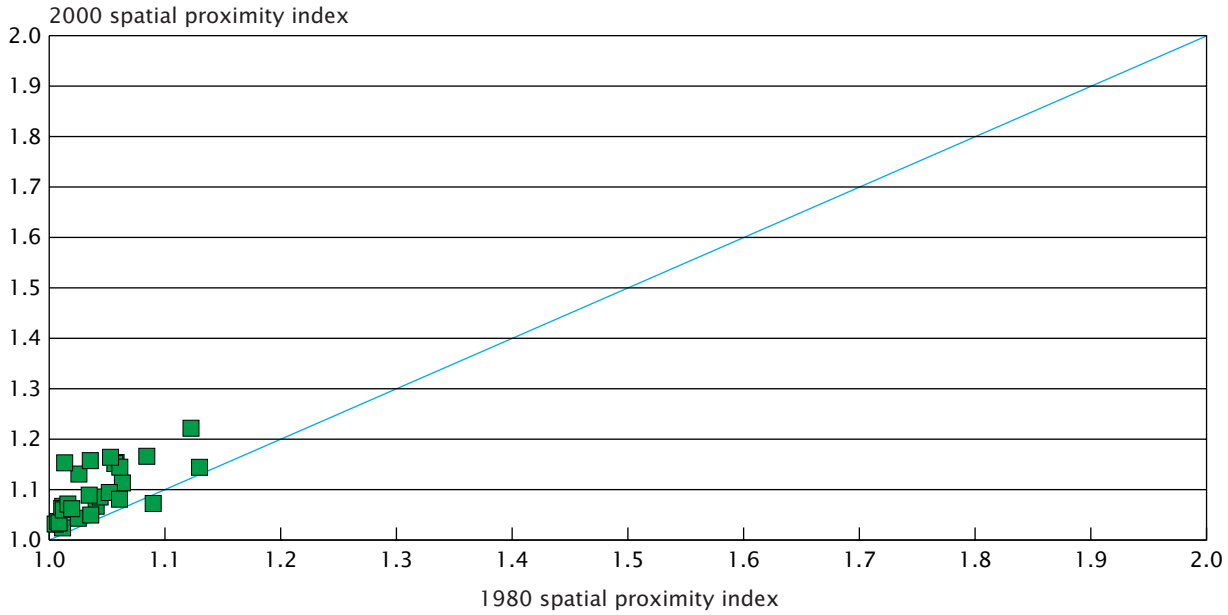
Absolute Centralization Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-2e.

Spatial Proximity Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Areas with the smallest proportion (under 1.8 percent) of Asians and Pacific Islanders had, by far, the lowest level of isolation and the lowest level of spatial proximity. Both the isolation and spatial proximity indexes increased monotonically with the percentage of Asians and Pacific Islanders. The other indexes did not seem to display a pattern with respect to the percentage of Asians and Pacific Islanders.

In terms of patterns by the rate of growth of the Asian and Pacific Islander population, metropolitan areas with the greatest growth between 1980 and 2000 experienced particularly large increases in isolation, and some increases in dissimilarity and spatial proximity. Those with the lowest rate of growth (under 256.8 percent increase — still a large rate) experienced more modest changes in segregation over the two decades.

Table 4-2.
Residential Segregation Indexes for Asians and Pacific Islanders by Characteristics of Selected Metropolitan Areas: 1980, 1990, and 2000

(Weighted averages)

Characteristic	Number of metropolitan areas	Dissimilarity index			Isolation index			Delta index			Absolute centralization index			Spatial proximity index		
		1980	1990	2000	1980	1990	2000	1980	1990	2000	1980	1990	2000	1980	1990	2000
Selected metropolitan areas	30	0.422	0.424	0.433	0.292	0.330	0.395	0.733	0.742	0.735	0.700	0.693	0.672	1.071	1.104	1.124
Region																
Northeast	6	0.450	0.443	0.461	0.169	0.234	0.320	0.734	0.723	0.720	0.729	0.704	0.699	1.045	1.064	1.089
Midwest	2	0.444	0.440	0.431	0.092	0.132	0.175	0.729	0.753	0.719	0.736	0.755	0.725	1.037	1.071	1.074
South	3	0.363	0.393	0.418	0.069	0.128	0.221	0.793	0.797	0.780	0.810	0.800	0.776	1.018	1.048	1.088
West	19	0.419	0.420	0.426	0.360	0.396	0.467	0.728	0.740	0.735	0.680	0.672	0.644	1.086	1.124	1.146
Population Size																
1 Million or more	20	0.427	0.428	0.437	0.194	0.283	0.362	0.760	0.751	0.740	0.748	0.716	0.688	1.069	1.106	1.129
500,000-999,999	3	0.412	0.393	0.408	0.675	0.641	0.689	0.619	0.659	0.668	0.516	0.527	0.534	1.085	1.091	1.088
Under 500,000	7	0.375	0.434	0.398	0.153	0.275	0.307	0.806	0.831	0.811	0.751	0.752	0.724	1.050	1.103	1.114
Percent Asian/Pacific Islander (Quartiles)																
Under 1.8 percent	8	0.388	0.398	0.421	0.062	0.102	0.175	0.728	0.739	0.732	0.719	0.725	0.710	1.017	1.041	1.067
1.8-3.1 percent	7	0.433	0.430	0.438	0.151	0.222	0.303	0.765	0.768	0.758	0.772	0.761	0.750	1.045	1.068	1.090
3.1-5.7 percent	8	0.386	0.412	0.412	0.147	0.250	0.332	0.768	0.754	0.739	0.737	0.699	0.666	1.045	1.091	1.133
Over 5.7 percent	7	0.433	0.432	0.442	0.428	0.469	0.556	0.712	0.726	0.720	0.659	0.648	0.613	1.099	1.143	1.163
Percent Change (1980-2000) Asian/ Pacific Islander (Quartiles)																
Under 256.8 percent	7	0.448	0.441	0.447	0.434	0.460	0.523	0.709	0.728	0.723	0.680	0.684	0.661	1.101	1.140	1.151
256.8-293.6 percent	8	0.454	0.460	0.470	0.179	0.270	0.353	0.782	0.778	0.773	0.766	0.753	0.750	1.052	1.081	1.104
293.6-356.5 percent	7	0.382	0.405	0.403	0.137	0.226	0.301	0.780	0.777	0.754	0.699	0.673	0.638	1.042	1.083	1.110
Over 356.5 percent	8	0.334	0.370	0.402	0.097	0.204	0.317	0.704	0.706	0.702	0.690	0.669	0.648	1.023	1.069	1.113

Note: Includes 30 Metropolitan Areas with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic. Characteristics of metropolitan areas as of 1980. Segregation estimates are weighted by the size of the Asian and Pacific Islander population.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Table 4-3.
Distribution of Percent Change in Residential Segregation Indexes for Asians and Pacific Islanders: 1980-2000

Time period change	Dissimilarity index		Isolation index		Delta index		Absolute centralization index		Spatial proximity index	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1980-1990										
Increase of 5 percent or more . .	14	47	28	93	2	7	3	10	6	20
Increase of 1-4.99 percent	4	13	1	3	7	23	7	23	16	53
Change of less than 1 percent .	2	7	0	0	12	40	5	17	8	27
Decrease of 1-4.99 percent	5	17	0	0	8	27	10	33	0	0
Decrease of 5 percent or more .	5	17	1	3	1	3	5	17	0	0
1990-2000										
Increase of 5 percent or more . .	9	30	29	97	0	0	1	3	2	7
Increase of 1-4.99 percent	10	33	1	3	1	3	0	0	20	67
Change of less than 1 percent .	1	3	0	0	12	40	8	27	7	23
Decrease of 1-4.99 percent	5	17	0	0	16	53	15	50	1	3
Decrease of 5 percent or more .	5	17	0	0	1	3	6	20	0	0
1980-2000										
Increase of 5 percent or more . .	14	47	30	100	1	3	2	7	13	43
Increase of 1-4.99 percent	7	23	0	0	7	23	4	13	16	53
Change of less than 1 percent .	2	7	0	0	9	30	4	13	0	0
Decrease of 1-4.99 percent	1	3	0	0	10	33	11	37	1	3
Decrease of 5 percent or more .	6	20	0	0	3	10	9	30	0	0

Note: Includes 30 Metropolitan Areas with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Three of the five indexes — dissimilarity, isolation, and spatial proximity — stand out as being most likely to show increases (Table 4-3). In fact, all 30 metropolitan areas had an increase in isolation of more than 5 percent between 1980 and 2000; the delta and absolute centralization indexes showed more decreases than increases.

Table 4-4 shows the index levels for the 20 largest metropolitan areas in the country that also have at least 3 percent or 20,000 or more Asians and Pacific Islanders. The five areas with the highest level of dissimilarity (the most commonly used index) were, in order, New York, San Francisco and Houston (tied), Los Angeles-Long Beach, and San Diego. Using all five indexes, the most segregated large areas include four of the same five metro areas, with San Francisco at number one and San Jose moving into the top five and Houston at number six, basically tied with San Jose and Los Angeles. Figure 4-3 shows the settlement pattern of Asians and Pacific Islanders in 2000 in San Francisco.

The least segregated large areas were, again in order using the dissimilarity index, Portland-Vancouver, Seattle-Bellevue-Everett, Nassau-Suffolk, Newark, and Bergen-Passaic. Using all the indexes, the five least segregated large areas were Nassau-Suffolk, Baltimore, Newark, Bergen-Passaic, and Detroit. Figure 4-4 shows the settlement pattern of Asians and Pacific Islanders in 2000 in Nassau-Suffolk.

Table 4-4.
Residential Segregation for Asians and Pacific Islanders in Large Metropolitan Areas: 1980, 1990, and 2000

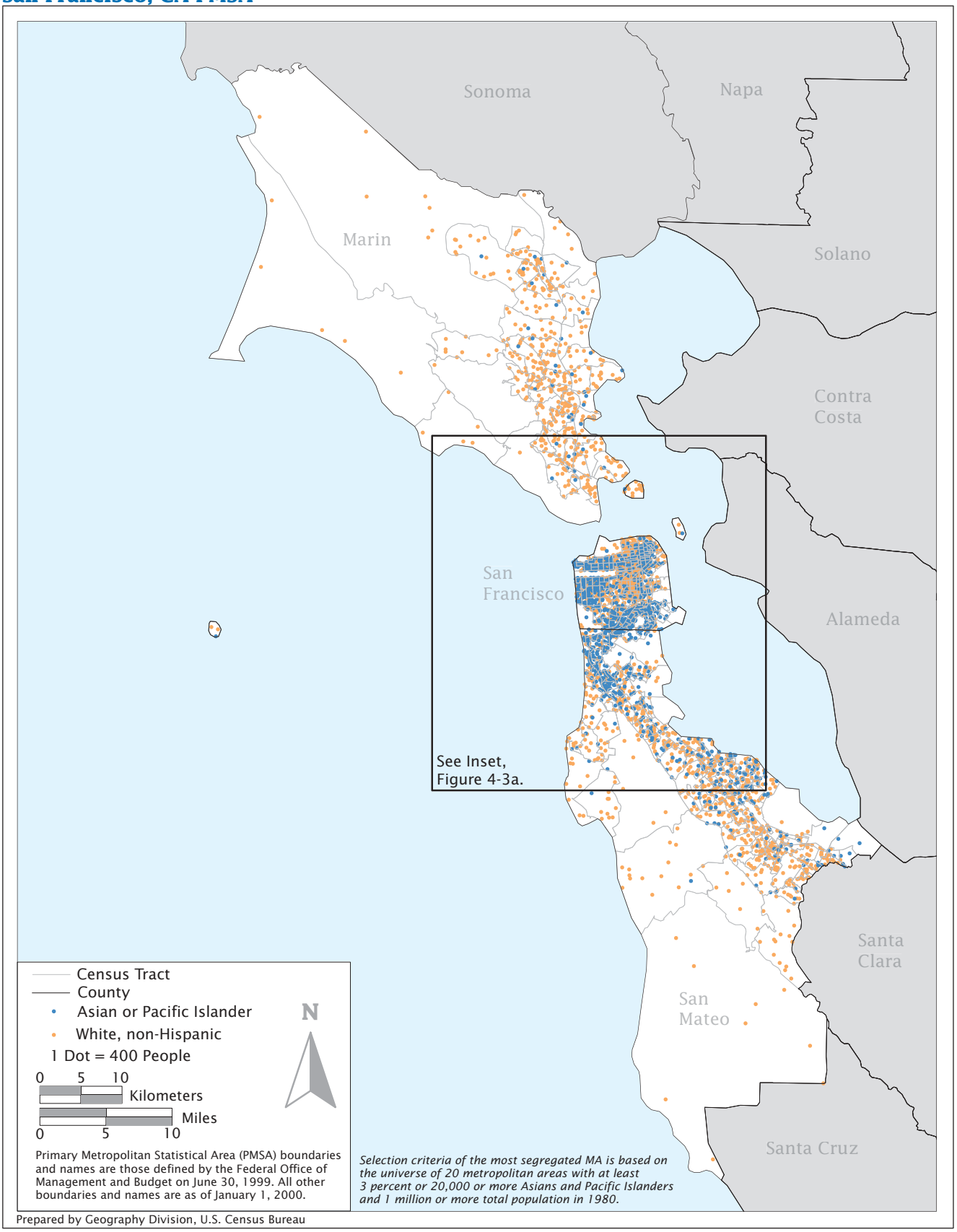
MSA/PMSA Name	Dissimilarity index				Isolation index				Delta index				Absolute centralization index				Spatial proximity index				Average 2000 rank	Rank of averaged 2000 ranks
	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank		
Baltimore, MD PMSA	0.376	0.382	0.389	13	0.030	0.054	0.097	20	0.686	0.691	0.687	15	0.634	0.670	0.652	16	1.007	1.018	1.032	20	16.8	19
Bergen-Passaic, NJ PMSA	0.342	0.344	0.359	16	0.048	0.121	0.213	10	0.531	0.525	0.529	20	0.374	0.363	0.361	18	1.012	1.031	1.067	13	15.4	17
Boston, MA-NH PMSA	0.482	0.439	0.448	7	0.133	0.110	0.163	15	0.711	0.710	0.700	13	0.805	0.781	0.760	8	1.041	1.062	1.067	12	11.0	11
Chicago, IL PMSA	0.453	0.443	0.424	9	0.107	0.149	0.193	12	0.726	0.757	0.720	11	0.732	0.759	0.724	13	1.044	1.084	1.085	9	10.8	10
Detroit, MI PMSA	0.405	0.428	0.456	6	0.030	0.056	0.113	17	0.741	0.734	0.716	12	0.756	0.737	0.729	12	1.008	1.015	1.037	17	12.8	16
Houston, TX PMSA	0.424	0.459	0.484	3	0.088	0.157	0.281	8	0.814	0.817	0.799	6	0.821	0.790	0.760	9	1.026	1.073	1.131	7	6.6	6
Los Angeles-Long Beach, CA PMSA	0.468	0.463	0.477	4	0.277	0.405	0.502	3	0.752	0.740	0.740	10	0.766	0.713	0.670	14	1.123	1.190	1.222	1	6.4	4
Nassau-Suffolk, NY PMSA	0.305	0.324	0.353	18	0.023	0.059	0.107	19	0.536	0.540	0.547	19	0.336	0.314	0.300	19	1.005	1.016	1.032	19	18.8	20
New York, NY PMSA	0.492	0.484	0.505	1	0.234	0.328	0.438	4	0.785	0.778	0.779	8	0.799	0.773	0.774	7	1.063	1.085	1.113	8	5.6	3
Newark, NJ PMSA	0.312	0.313	0.355	17	0.040	0.075	0.130	16	0.687	0.685	0.684	16	0.667	0.656	0.653	15	1.007	1.016	1.037	16	16.0	18
Oakland, CA PMSA	0.374	0.390	0.405	11	0.180	0.318	0.435	5	0.712	0.686	0.651	17	0.455	0.379	0.291	20	1.058	1.116	1.154	3	11.2	12
Orange County, CA PMSA	0.272	0.330	0.395	12	0.086	0.224	0.369	6	0.584	0.561	0.550	18	0.587	0.505	0.442	17	1.013	1.064	1.153	4	11.4	13
Philadelphia, PA-NJ PMSA	0.403	0.433	0.436	8	0.057	0.109	0.173	14	0.709	0.699	0.687	14	0.721	0.739	0.736	11	1.011	1.035	1.063	14	12.2	15
Portland-Vancouver, OR-WA PMSA	0.284	0.308	0.311	20	0.032	0.059	0.107	18	0.838	0.858	0.848	2	0.883	0.896	0.880	1	1.009	1.018	1.034	18	11.8	14
Riverside-San Bernardino, CA PMSA	0.287	0.328	0.360	15	0.037	0.102	0.191	13	0.875	0.886	0.890	1	0.842	0.880	0.860	2	1.012	1.039	1.060	15	9.2	7
San Diego, CA MSA	0.460	0.481	0.461	5	0.181	0.291	0.362	7	0.841	0.831	0.826	4	0.775	0.781	0.775	6	1.061	1.118	1.145	5	5.4	2
San Francisco, CA PMSA	0.511	0.501	0.484	2	0.368	0.460	0.523	2	0.845	0.839	0.826	5	0.862	0.860	0.847	3	1.130	1.137	1.144	6	3.6	1
San Jose, CA PMSA	0.314	0.385	0.410	10	0.159	0.366	0.525	1	0.762	0.775	0.769	9	0.751	0.760	0.754	10	1.035	1.119	1.157	2	6.4	4
Seattle-Bellevue-Everett, WA PMSA	0.390	0.364	0.343	19	0.160	0.198	0.240	9	0.857	0.849	0.828	3	0.877	0.842	0.804	5	1.061	1.075	1.081	10	9.2	7
Washington, DC-MD-VA-WV PMSA	0.322	0.355	0.382	14	0.068	0.125	0.208	11	0.808	0.807	0.788	7	0.849	0.833	0.812	4	1.016	1.039	1.071	11	9.4	9

Note: Includes 20 Metropolitan Areas with 3 percent or 20,000 or more Asians and Pacific Islanders and 1,000,000 or more total population in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Figure 4-3.

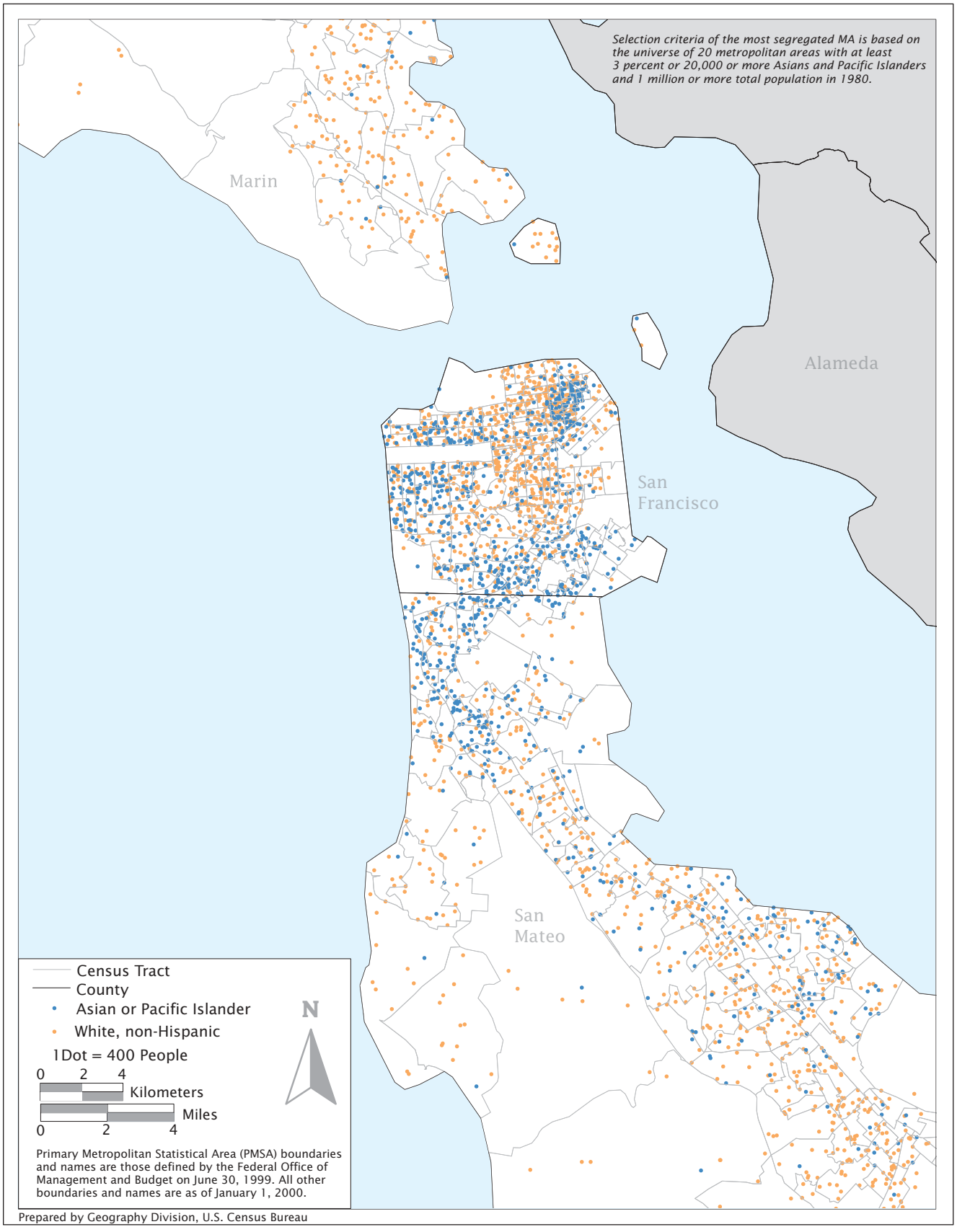
The Most Segregated Large Metropolitan Area for Asians and Pacific Islanders in 2000: San Francisco, CA PMSA



Prepared by Geography Division, U.S. Census Bureau

Figure 4-3a.

The Most Segregated Large Metropolitan Area for Asians and Pacific Islanders in 2000: San Francisco, CA PMSA (inset)



Prepared by Geography Division, U.S. Census Bureau

Figure 4-4.

The Least Segregated Large Metropolitan Area for Asians and Pacific Islanders in 2000: Nassau-Suffolk, NY PMSA

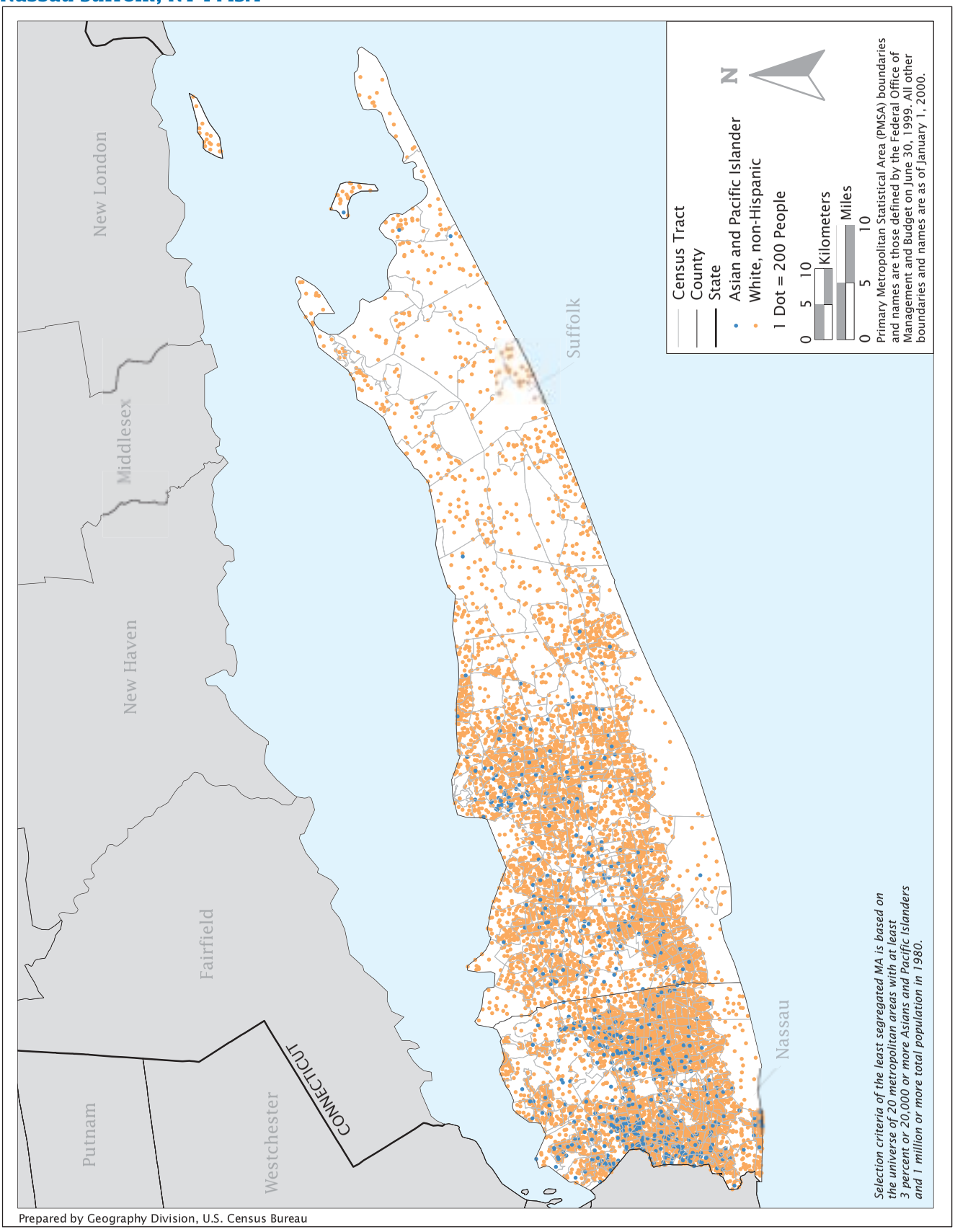


Table 4-5.
Percent Change in Residential Segregation Indexes for Asians and Pacific Islanders in Large Metropolitan Areas: 1980-2000

MSA/PMSA name	Dissimilarity index				Isolation index				Delta index				Absolute centralization index				Spatial proximity index				Rank of change ranks averaged
	1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990 percent change	1990-2000 percent change	1980-2000		
			Percent change	Rank			Percent change	Rank			Percent change	Rank			Percent change	Rank			Percent change	Rank	
Baltimore, MD PMSA	1.6	1.8	3.4	13	78.2	81.7	223.8	8	0.7	–0.5	0.2	5	5.8	–2.7	2.9	1	1.1	1.4	2.5	18	8
Bergen-Passaic, NJ PMSA	0.4	4.6	5.0	12	153.5	75.9	345.7	3	–1.1	0.7	–0.5	7	–2.9	–0.5	–3.4	11	1.9	3.4	5.5	7	3
Boston, MA-NH PMSA	–8.8	1.9	–7.0	19	–17.1	47.6	22.3	20	–0.1	–1.4	–1.5	10	–3.0	–2.6	–5.5	14	2.0	0.5	2.6	16	19
Chicago, IL PMSA	–2.2	–4.4	–6.4	18	39.4	29.6	80.6	17	4.3	–4.9	–0.8	8	3.7	–4.6	–1.1	7	3.8	0.1	4.0	12	15
Detroit, MI PMSA	5.7	6.4	12.5	8	82.6	103.5	271.6	5	–1.0	–2.4	–3.4	18	–2.4	–1.1	–3.6	12	0.8	2.1	2.9	14	13
Houston, TX PMSA	8.3	5.4	14.2	6	78.2	79.7	220.2	10	0.3	–2.2	–1.9	13	–3.7	–3.8	–7.4	15	4.6	5.4	10.3	3	9
Los Angeles-Long Beach, CA PMSA	–1.2	3.1	1.9	15	45.8	24.1	81.0	16	–1.6	0.0	–1.6	11	–6.9	–6.1	–12.6	18	6.0	2.7	8.8	5	16
Nassau-Suffolk, NY PMSA	6.0	9.1	15.7	5	156.2	80.8	363.2	2	0.8	1.4	2.2	1	–6.6	–4.3	–10.6	17	1.1	1.6	2.7	15	3
New York, NY PMSA	–1.6	4.4	2.7	14	40.2	33.7	87.4	15	–1.0	0.1	–0.9	9	–3.2	0.1	–3.1	10	2.0	2.6	4.7	10	14
Newark, NJ PMSA	0.6	13.2	13.8	7	85.4	74.3	223.0	9	–0.3	–0.2	–0.4	6	–1.7	–0.4	–2.2	9	0.9	2.0	2.9	13	6
Oakland, CA PMSA	4.3	3.9	8.3	10	76.3	36.7	140.9	13	–3.6	–5.2	–8.6	20	–16.9	–23.1	–36.1	20	5.5	3.4	9.1	4	17
Orange County, CA PMSA	21.4	19.7	45.3	1	161.6	64.4	330.1	4	–3.9	–2.0	–5.8	19	–13.9	–12.6	–24.7	19	5.0	8.4	13.8	1	6
Philadelphia, PA-NJ PMSA	7.4	0.6	8.0	11	93.2	58.2	205.7	12	–1.4	–1.7	–3.1	16	2.5	–0.4	2.1	3	2.4	2.7	5.1	9	10
Portland-Vancouver, OR-WA PMSA	8.6	1.1	9.8	9	81.8	83.0	232.7	6	2.4	–1.2	1.2	3	1.5	–1.9	–0.4	6	0.9	1.6	2.5	17	5
Riverside-San Bernardino, CA PMSA	14.3	10.0	25.7	3	179.5	87.0	422.6	1	1.3	0.5	1.8	2	4.5	–2.3	2.2	2	2.6	2.1	4.7	11	1
San Diego, CA MSA	4.7	–4.2	0.3	16	61.0	24.6	100.6	14	–1.2	–0.6	–1.8	12	0.8	–0.7	0.1	5	5.3	2.4	7.9	6	12
San Francisco, CA PMSA	–1.9	–3.4	–5.3	17	24.9	13.8	42.2	19	–0.8	–1.5	–2.3	14	–0.2	–1.5	–1.6	8	0.7	0.6	1.3	20	18
San Jose, CA PMSA	22.5	6.5	30.5	2	130.0	43.5	230.0	7	1.8	–0.9	0.9	4	1.1	–0.8	0.4	4	8.1	3.4	11.8	2	1
Seattle-Bellevue-Everett, WA PMSA	–6.7	–5.8	–12.1	20	23.2	21.3	49.5	18	–1.0	–2.4	–3.4	17	–4.0	–4.5	–8.3	16	1.4	0.5	1.9	19	20
Washington, DC-MD-VA-WV PMSA	10.3	7.5	18.6	4	85.0	66.8	208.6	11	–0.2	–2.4	–2.5	15	–1.9	–2.5	–4.3	13	2.3	3.1	5.5	8	10

Note: Includes 20 Metropolitan Areas with 3 percent or 20,000 or more Asians and Pacific Islanders and 1,000,000 or more total population in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

The large areas with the greatest increase in segregation over the 1980-2000 period include two of the five areas with low overall segregation — the five with the greatest increases were Riverside-San Bernardino, San Jose, Nassau-Suffolk, Bergen-Passaic, and Portland-Vancouver. The five with the smallest increases (or largest decreases) were Seattle-Bellevue-Everett, Boston, San Francisco, Oakland, and Los Angeles-Long Beach (Table 4-5).

Table 4-6 shows segregation statistics separately for Asians and Pacific Islanders in 2000 for all and selected metropolitan areas. Because of the small number of Pacific Islanders, in particular, the selection criteria continue to refer to metropolitan areas with at least 20,000 or 3 percent Asian and Native Hawaiian and Other Pacific Islanders combined in 1980. As a baseline, the index value for all Asians and Pacific Islanders in 2000 already discussed is presented first, followed by the index value for Asians and then Pacific Islanders.

The dissimilarity index shows only a little difference between the residential segregation levels for the two groups, though Pacific Islanders are more segregated than Asians (using the significance criteria explained in footnote 2). The other indexes suggest, however, that Pacific Islanders are slightly less residentially segregated than Asians.

Table 4-6.
Descriptive Statistics for Residential Segregation Indexes for Asians and Pacific Islanders, Asians, and Native Hawaiians and Other Pacific Islanders: 2000

Index and race	All metropolitan areas (weighted average)	Selected metropolitan areas					
		Weighted average	Minimum	25th percentile	Median	75th percentile	Maximum
Dissimilarity							
Asians and Pacific Islanders	0.411	0.433	0.256	0.397	0.436	0.477	0.505
Asians	0.416	0.437	0.261	0.402	0.437	0.479	0.505
Native Hawaiians and Other Pacific Islanders	0.427	0.443	0.254	0.392	0.441	0.448	0.649
Isolation							
Asians and Pacific Islanders	0.306	0.395	0.097	0.208	0.435	0.502	0.832
Asians	0.300	0.386	0.096	0.207	0.428	0.499	0.810
Native Hawaiians and Other Pacific Islanders	0.204	0.290	0.009	0.047	0.112	0.652	0.652
Delta							
Asians and Pacific Islanders	0.743	0.735	0.529	0.687	0.740	0.788	0.890
Asians	0.747	0.739	0.529	0.689	0.743	0.790	0.894
Native Hawaiians and Other Pacific Islanders	0.712	0.687	0.557	0.566	0.732	0.792	0.865
Absolute Centralization							
Asians and Pacific Islanders	0.683	0.672	0.291	0.653	0.736	0.774	0.880
Asians	0.687	0.678	0.289	0.655	0.736	0.774	0.882
Native Hawaiians and Other Pacific Islanders	0.582	0.533	0.281	0.324	0.596	0.718	0.846
Spatial Proximity							
Asians and Pacific Islanders	1.096	1.124	1.024	1.072	1.113	1.154	1.222
Asians	1.098	1.127	1.023	1.080	1.115	1.154	1.225
Native Hawaiians and Other Pacific Islanders	1.050	1.071	1.001	1.008	1.021	1.169	1.169

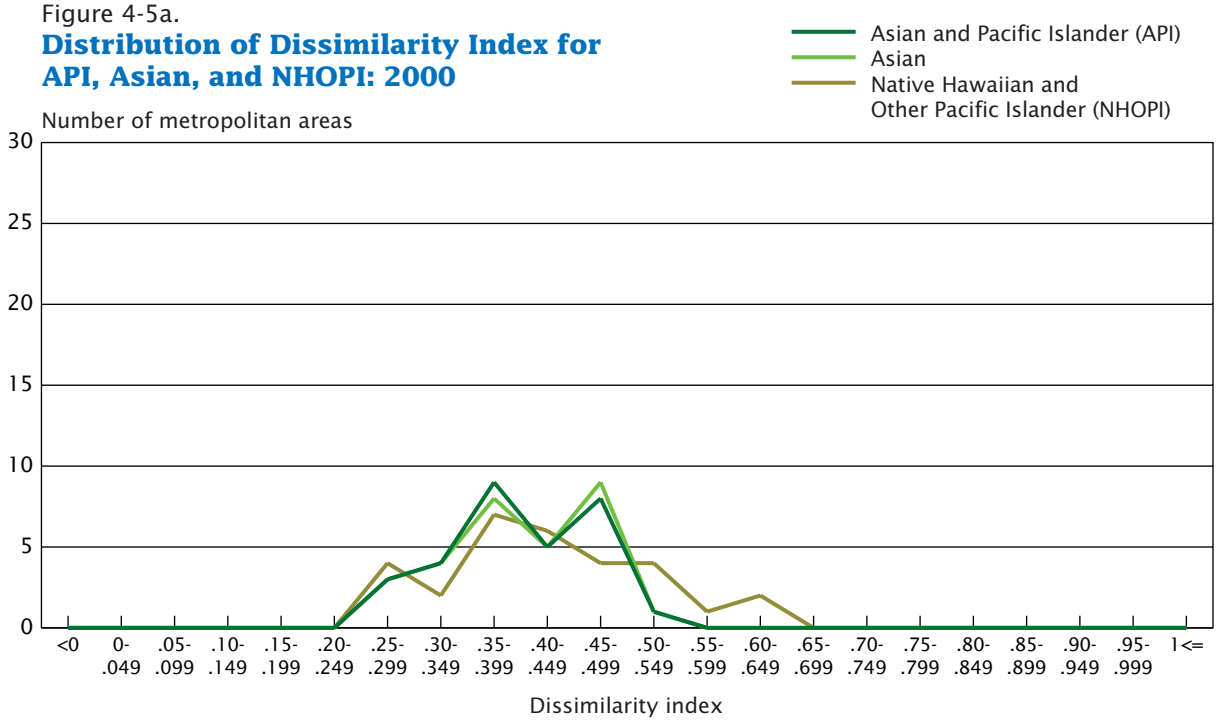
Note: Selected Metropolitan Areas (30 of 330) are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic.

Source: U.S. Census Bureau, Census 2000 Summary File 1.

An examination of the histograms for 2000 (Figure 4-5(a-e)), shows a higher level of residential segregation for Pacific Islanders than for Asians when the dissimilarity index is considered, but a lower level for the other four indexes. This was also very apparent when the scatter diagrams were examined. The dissimilarity index scores were arrayed along the diagonal in Figure 4-6a, but slightly below the diagonal for the delta index (Figure 4-6c), and well below the diagonal for the other three indexes.

In sum, there seems to have been an increase in the residential segregation of Asians and Pacific Islanders over the 1980-2000 period according to three of the five measures, no change in a fourth measure, and a small decline in the fifth. Increases are most notable in the isolation and spatial proximity indexes. The more Asians and Pacific Islanders in an area as a percentage of the population, the more they are isolated, and the more they tend to live with one another. Asians as a group were more segregated in 2000 than were Pacific Islanders.

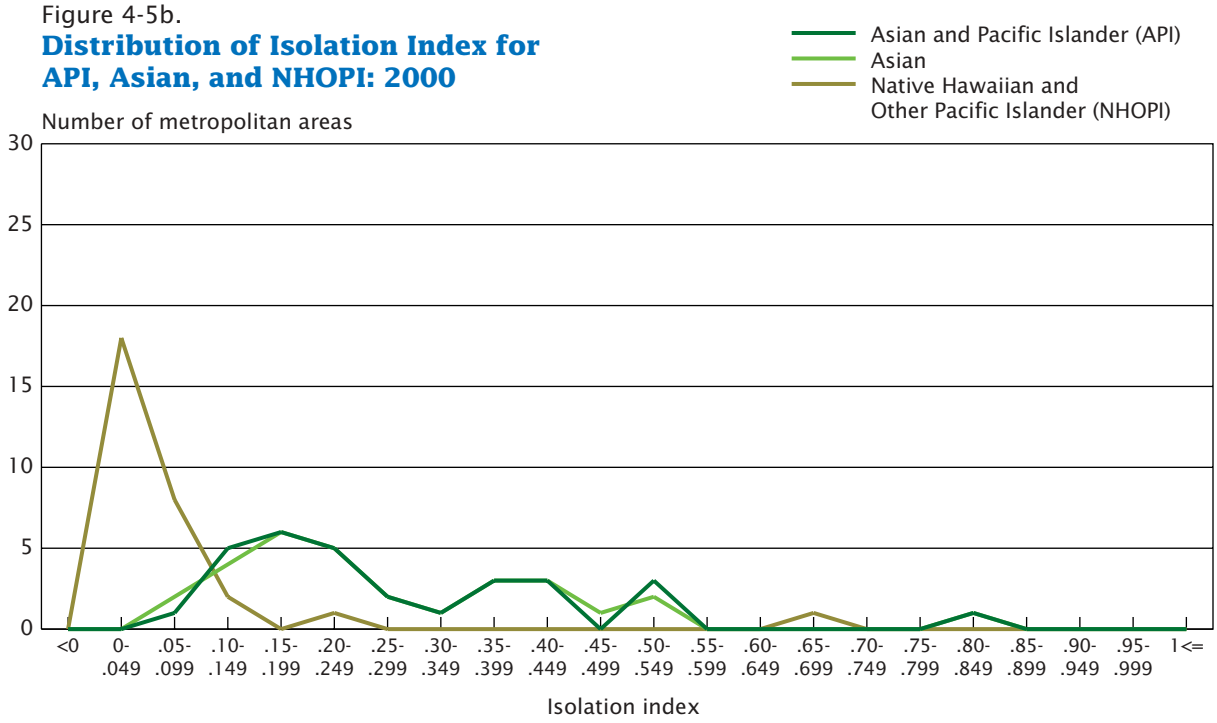
Figure 4-5a.
Distribution of Dissimilarity Index for API, Asian, and NHOPI: 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-5b.

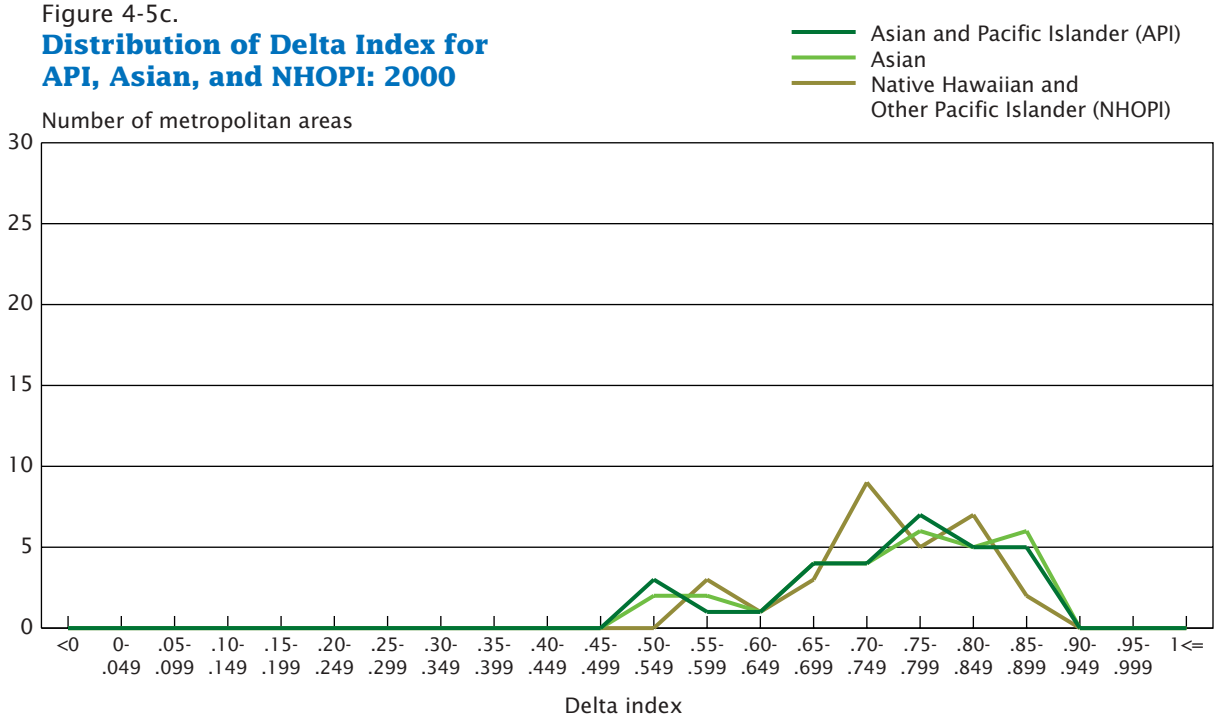
Distribution of Isolation Index for API, Asian, and NHOPI: 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-5c.

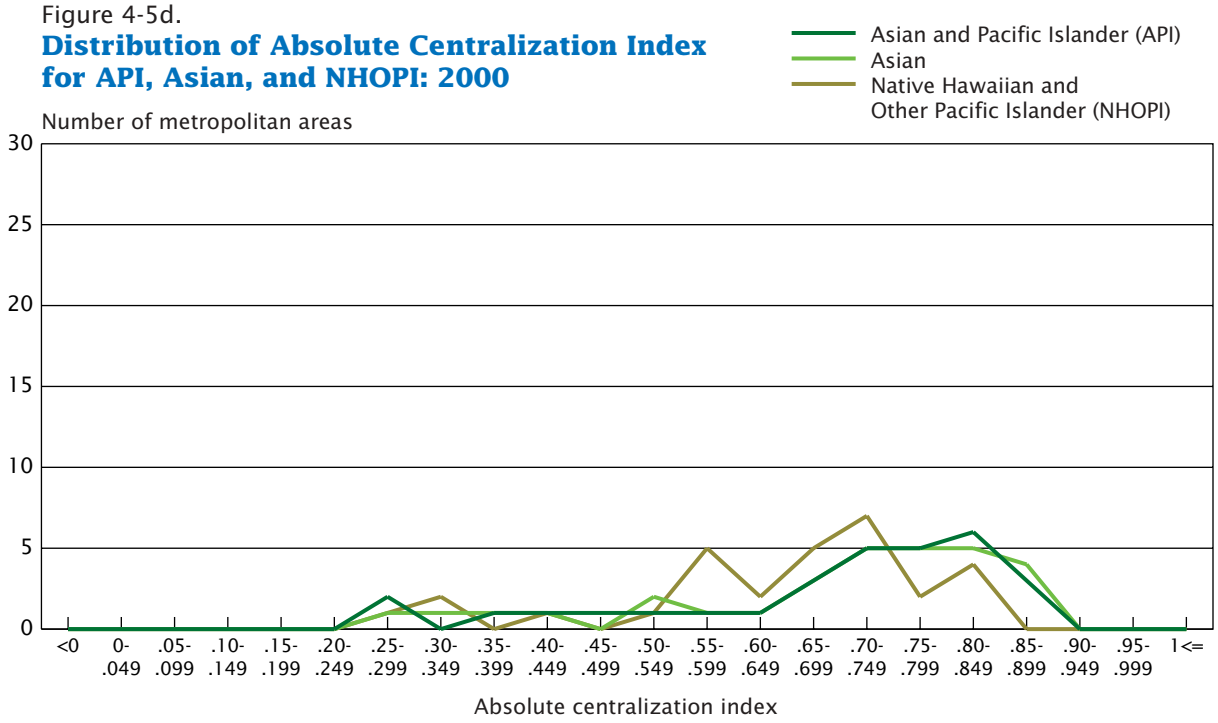
Distribution of Delta Index for API, Asian, and NHOPI: 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-5d.

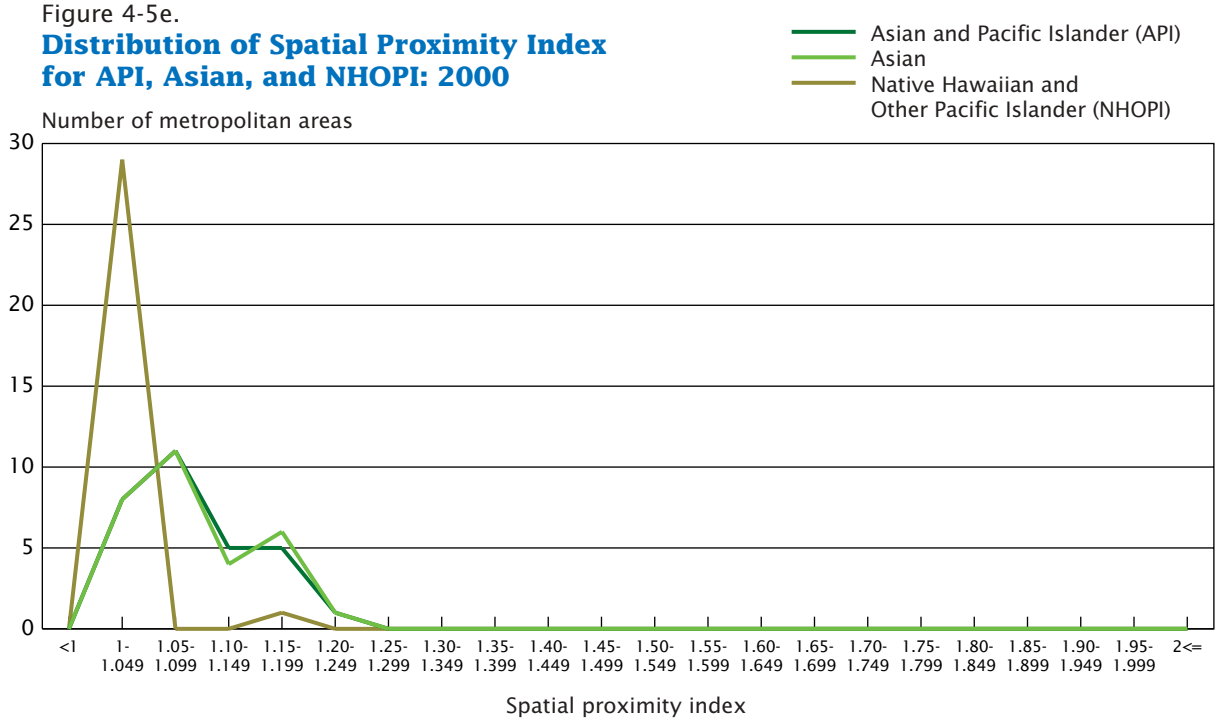
Distribution of Absolute Centralization Index for API, Asian, and NHOPI: 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-5e.

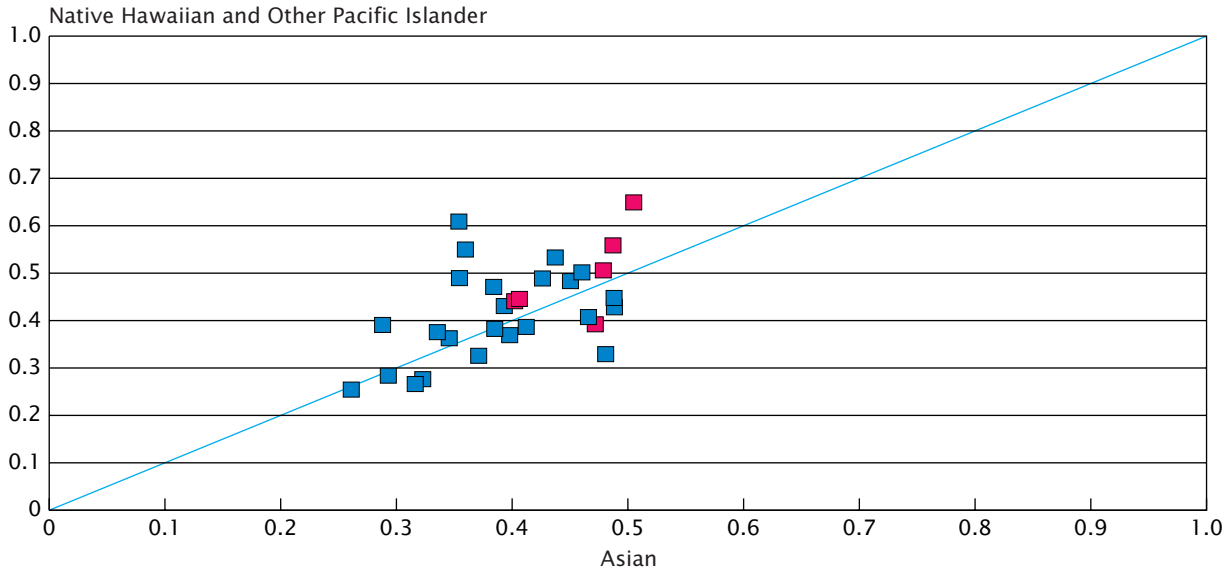
Distribution of Spatial Proximity Index for API, Asian, and NHOPI: 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-6a.

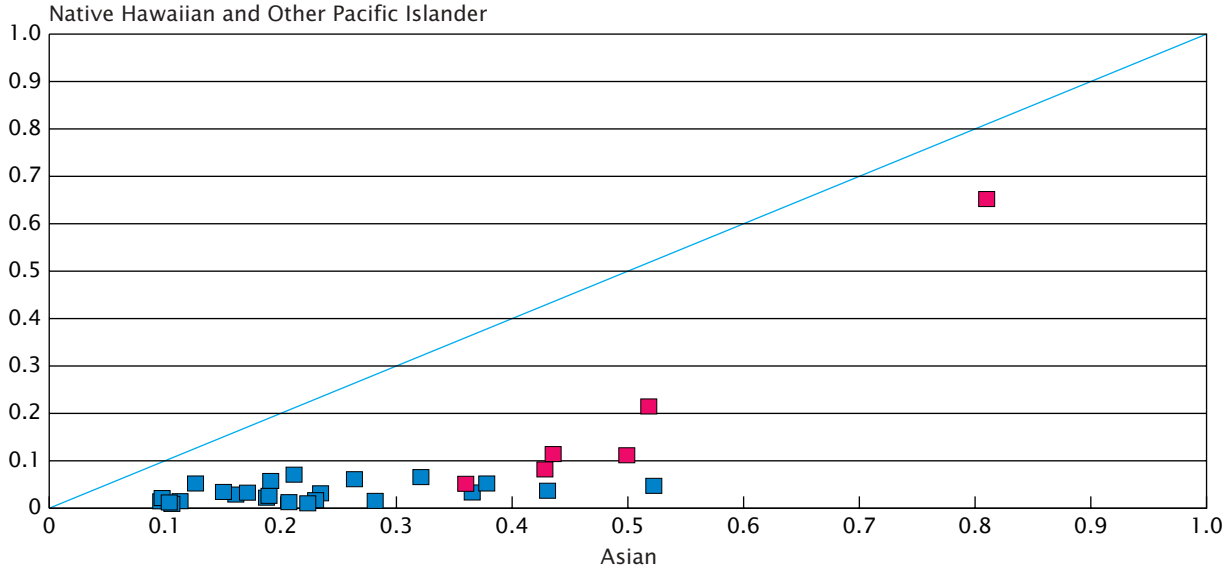
2000 Dissimilarity Index for Selected Metropolitan Areas: Native Hawaiian and Other Pacific Islander by Asian



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. Red dots represent those MSAs where both Asians and NHOPI met the selection criteria in 2000. Blue dots represent those MSAs where only Asians and not NHOPI met the selection criteria in 2000. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-6b.

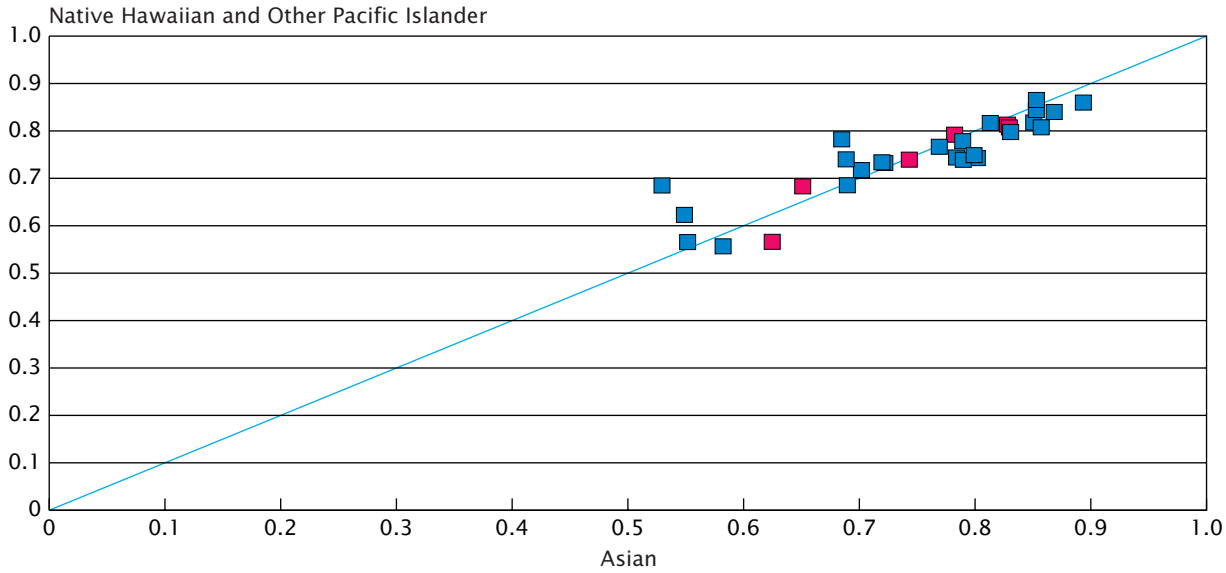
2000 Isolation Index for Selected Metropolitan Areas: Native Hawaiian and Other Pacific Islander by Asian



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. Red dots represent those MSAs where both Asians and NHOPI met the selection criteria in 2000. Blue dots represent those MSAs where only Asians and not NHOPI met the selection criteria in 2000. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-6c.

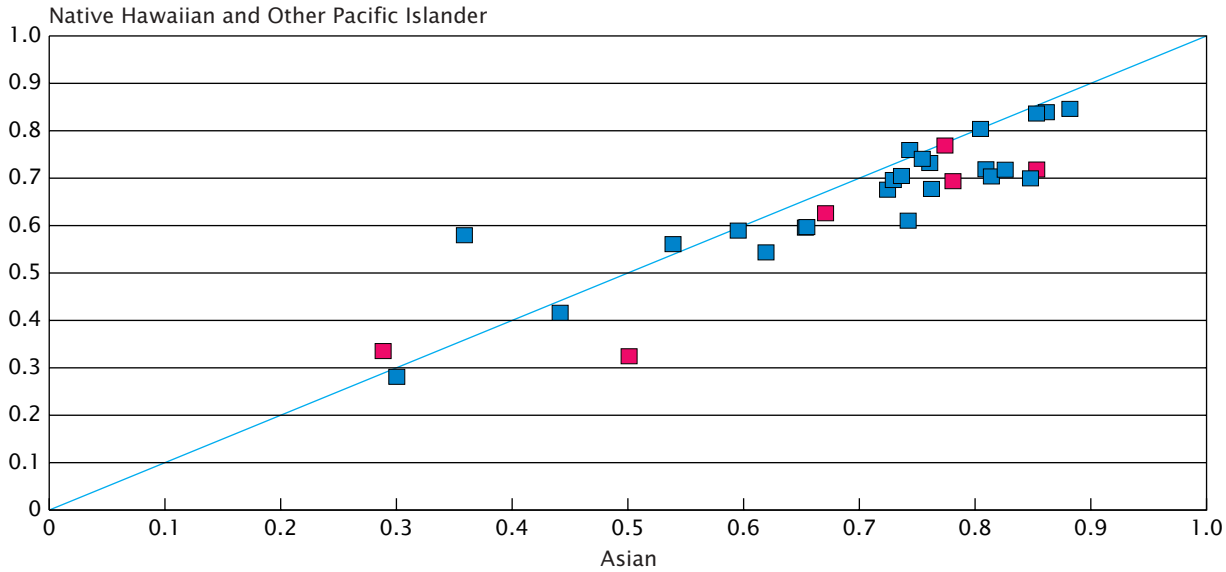
2000 Delta Index for Selected Metropolitan Areas: Native Hawaiian and Other Pacific Islander by Asian



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. Red dots represent those MSAs where both Asians and NHOPI met the selection criteria in 2000. Blue dots represent those MSAs where only Asians and not NHOPI met the selection criteria in 2000. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-6d.

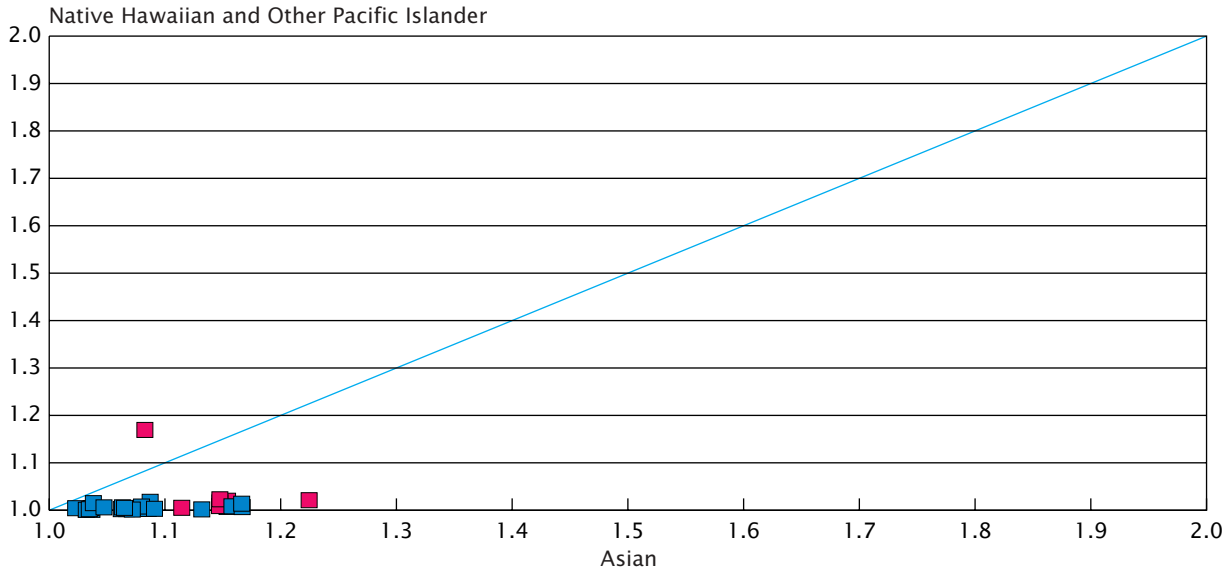
2000 Absolute Centralization Index for Selected Metropolitan Areas: Native Hawaiian and Other Pacific Islander by Asian



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. Red dots represent those MSAs where both Asians and NHOPI met the selection criteria in 2000. Blue dots represent those MSAs where only Asians and not NHOPI met the selection criteria in 2000. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 4-6e.

2000 Spatial Proximity Index for Selected Metropolitan Areas: Native Hawaiian and Other Pacific Islander by Asian



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. Red dots represent those MSAs where both Asians and NHOPI met the selection criteria in 2000. Blue dots represent those MSAs where only Asians and not NHOPI met the selection criteria in 2000. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

CHAPTER 5

RESIDENTIAL SEGREGATION OF BLACKS OR AFRICAN AMERICANS: 1980-2000

CHAPTER 5

RESIDENTIAL SEGREGATION OF BLACKS OR AFRICAN AMERICANS: 1980-2000

The number of African Americans in the United States grew over the last few decades from 26.5 million in 1980, to 30.0 million in 1990, and to 36.4 million in 2000.[1] Blacks comprised 11.7 percent of the total U.S. population in 1980, 12.1 percent in 1990, and 12.9 percent in 2000. About 86.5 percent of Blacks lived in metropolitan areas in 2000.

Table 5-1 shows the extent of residential segregation of Blacks in 1980, 1990, and 2000. There were 220 metropolitan areas (of the 330 total) with 3 percent or 20,000 or more Blacks in 1980. All five measures of segregation indicate a reduction in the residential segregation of Blacks between 1980 and 1990, and a further reduction between 1990 and 2000. The two-decade reduction ranges from 4 percent (absolute centralization and spatial proximity) to 12 percent (dissimilarity), regardless of whether all metropolitan areas or just "selected" metropolitan areas are examined. All indexes declined by one percent or more in each decade (the threshold for a change that we consider substantive as described in Chapter 2). This decline demonstrates a clear trend toward lower residential segregation for Blacks.[2]

The overall reduction in residential segregation is illustrated in Figures 5-1a through 5-1e. These figures demonstrate the clear shift in most of the index distributions toward less residential segregation for the dissimilarity, isolation, and delta indexes, although this was less pronounced for the absolute centralization index and unclear for spatial proximity index.

This reduction seemed to take place throughout the distribution of segregation, but with different indexes showing different patterns. Dissimilarity, isolation, and delta indexes showed a greater decline in areas of higher segregation, while changes in absolute centralization and spatial proximity were perhaps more uniform. The percentage declines in each decade were similar for each index: sometimes the 1980-1990 change was larger than the 1990-2000 change, and sometimes the reverse was true.

The largest metropolitan areas (1 million or more population) had higher residential segregation than the middle-sized ones (500,000 to 999,999 population), which, in turn, had higher residential segregation than the smallest metropolitan areas (see Table 5-2). This was true for all indexes for all 3 years, but for several indexes, the difference between small and medium metropolitan areas was small. The 1980-1990 and 1990-2000 reductions in the residential segregation of Blacks took place in all regions for all five indexes (with the exception of the spatial proximity index for the Northeast), and for metropolitan areas of different sizes for four of the five indexes.[3] In 2000, the West region had the lowest level of residential segregation for three of the five indexes, and the South was lowest for the remaining two. The Midwest had the highest level of residential segregation for four of the five indexes; the Northeast had the highest level for the remaining one.

[1] The 2000 figure includes all people who identified as Black or African American alone or in combination with another race. The number of people who identified as Black or African American alone was 34.7 million.

[2] Using the approach described in Chapter 2 to determine substantive changes as one percent of the index range over three years, the following critical values are used: dissimilarity, 0.006; isolation, 0.008; delta, 0.005; absolute centralization, 0.010; spatial proximity, 0.009.

[3] The absolute centralization index increased slightly for metropolitan areas under 1 million between 1980 and 1990. The index decreased back to its 1980 value in 2000 for areas with 500,000-999,999 and decreased from its 1990 value for small metropolitan areas but not fully back to the 1980 level.

Table 5-1.
Descriptive Statistics for Residential Segregation Indexes for Blacks or African Americans: 1980, 1990, and 2000

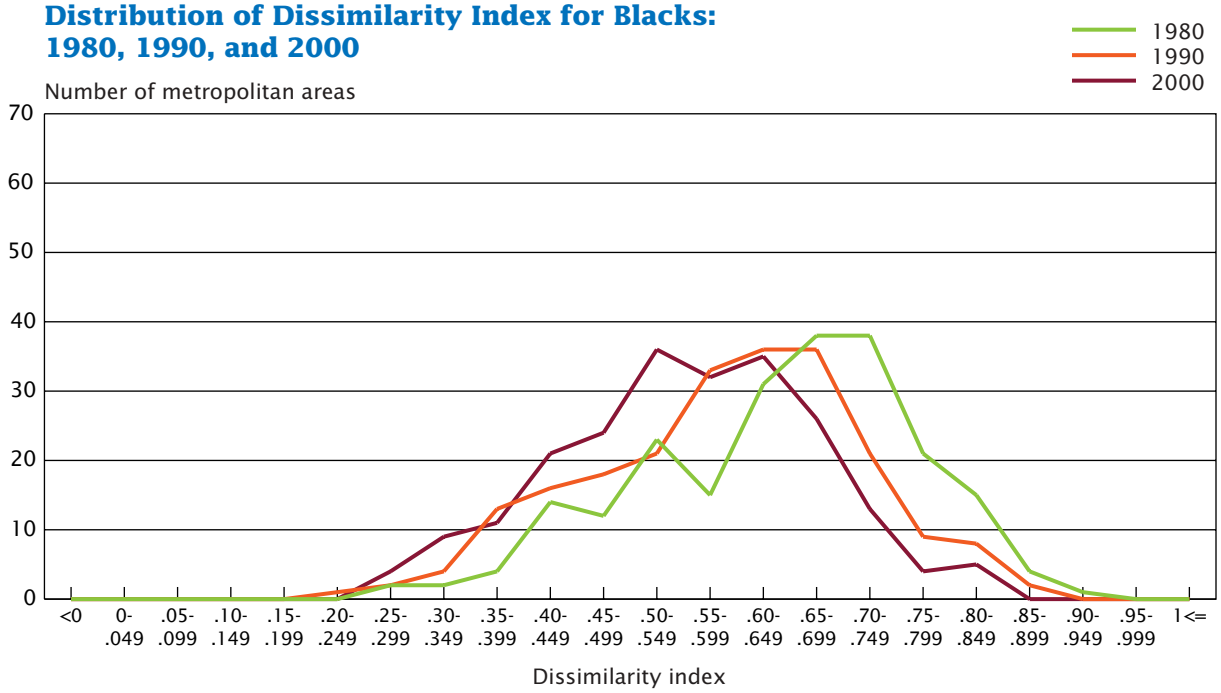
Index, year, and percent change	All metropolitan areas (weighted average)	Selected metropolitan areas					
		Weighted average	Minimum	25th percentile	Median	75th percentile	Maximum
Dissimilarity Index							
1980	0.727	0.730	0.272	0.682	0.750	0.812	0.908
1990	0.678	0.682	0.227	0.606	0.683	0.769	0.899
2000	0.640	0.645	0.263	0.569	0.648	0.730	0.846
Percent change							
1980-1990	–6.8	–6.6	–16.6	–11.1	–8.9	–5.2	–1.0
1990-2000	–5.6	–5.4	15.8	–6.1	–5.1	–5.1	–5.9
1980-2000	–12.0	–11.7	–3.4	–16.6	–13.5	–10.1	–6.8
Isolation Index							
1980	0.655	0.662	0.070	0.586	0.698	0.758	0.855
1990	0.614	0.622	0.064	0.525	0.653	0.735	0.842
2000	0.591	0.601	0.061	0.495	0.649	0.721	0.827
Percent change							
1980-1990	–6.3	–6.0	–7.6	–10.5	–6.5	–3.0	–1.5
1990-2000	–3.8	–3.4	–5.3	–5.7	–0.6	–1.9	–1.7
1980-2000	–9.9	–9.3	–12.4	–15.7	–7.1	–4.9	–3.2
Delta Index							
1980	0.834	0.835	0.438	0.814	0.862	0.902	0.954
1990	0.816	0.816	0.467	0.795	0.834	0.880	0.967
2000	0.793	0.793	0.454	0.761	0.811	0.844	0.966
Percent change							
1980-1990	–2.2	–2.2	6.6	–2.3	–3.2	–2.4	1.4
1990-2000	–2.8	–2.8	–2.7	–4.3	–2.8	–4.1	–0.1
1980-2000	–5.0	–5.0	3.7	–6.5	–5.9	–6.4	1.2
Absolute Centralization Index							
1980	0.753	0.755	–0.022	0.721	0.789	0.846	0.966
1990	0.743	0.745	0.054	0.717	0.773	0.831	0.973
2000	0.722	0.724	0.015	0.663	0.749	0.818	0.962
Percent change							
1980-1990	–1.3	–1.3	345.2	–0.5	–2.1	–1.7	0.7
1990-2000	–2.8	–2.8	–71.7	–7.5	–3.1	–1.6	–1.1
1980-2000	–4.1	–4.1	169.5	–8.0	–5.1	–3.3	–0.4
Spatial Proximity Index							
1980	1.435	1.441	1.024	1.261	1.441	1.596	2.054
1990	1.400	1.406	1.021	1.226	1.388	1.508	1.826
2000	1.374	1.381	1.015	1.220	1.382	1.469	1.821
Percent change							
1980-1990	–2.5	–2.4	–0.2	–2.8	–3.7	–5.5	–11.1
1990-2000	–1.9	–1.8	–0.6	–0.5	–0.4	–2.6	–0.3
1980-2000	–4.3	–4.1	–0.8	–3.3	–4.0	–8.0	–11.4

Note: Selected Metropolitan Areas (220 of 330) are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic. Segregation estimates are weighted by the size of the Black/African American population.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Figure 5-1a.

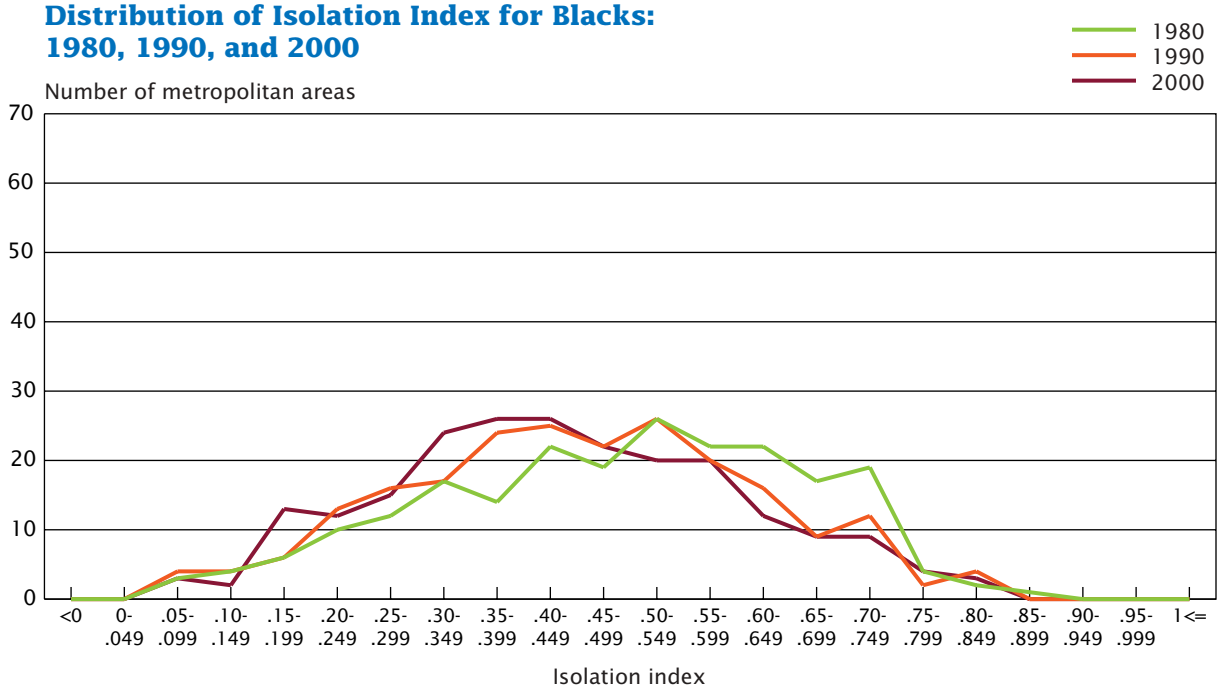
Distribution of Dissimilarity Index for Blacks: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 5-1b.

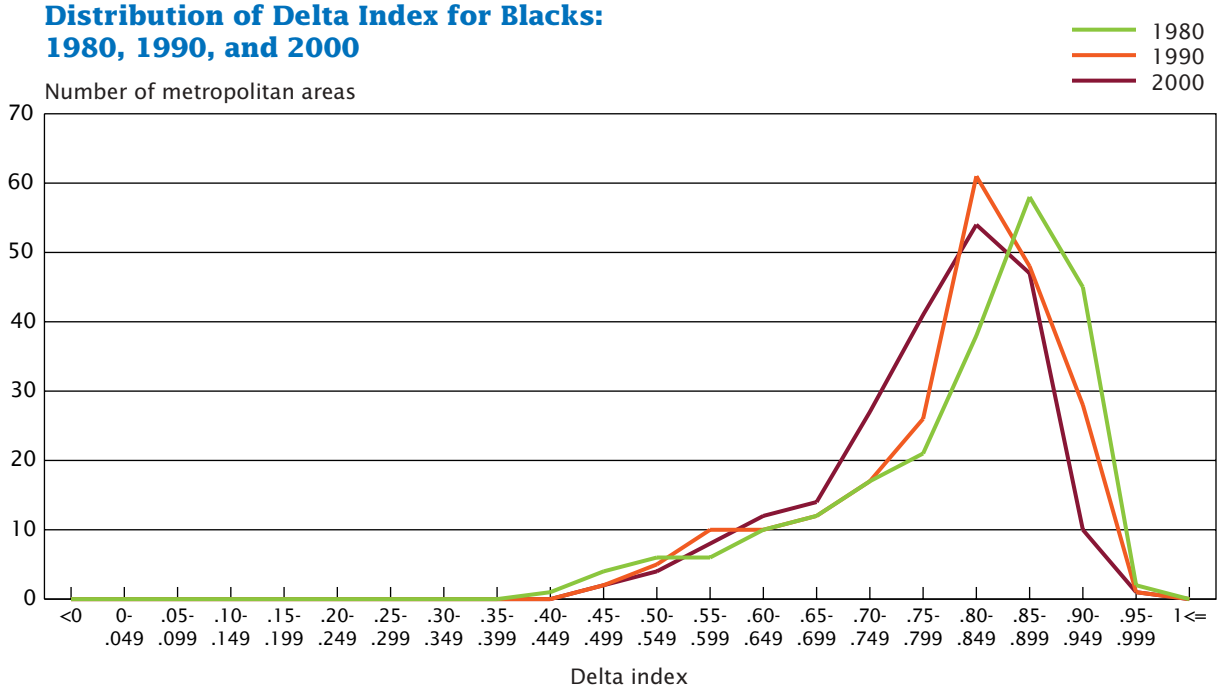
Distribution of Isolation Index for Blacks: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 5-1c.

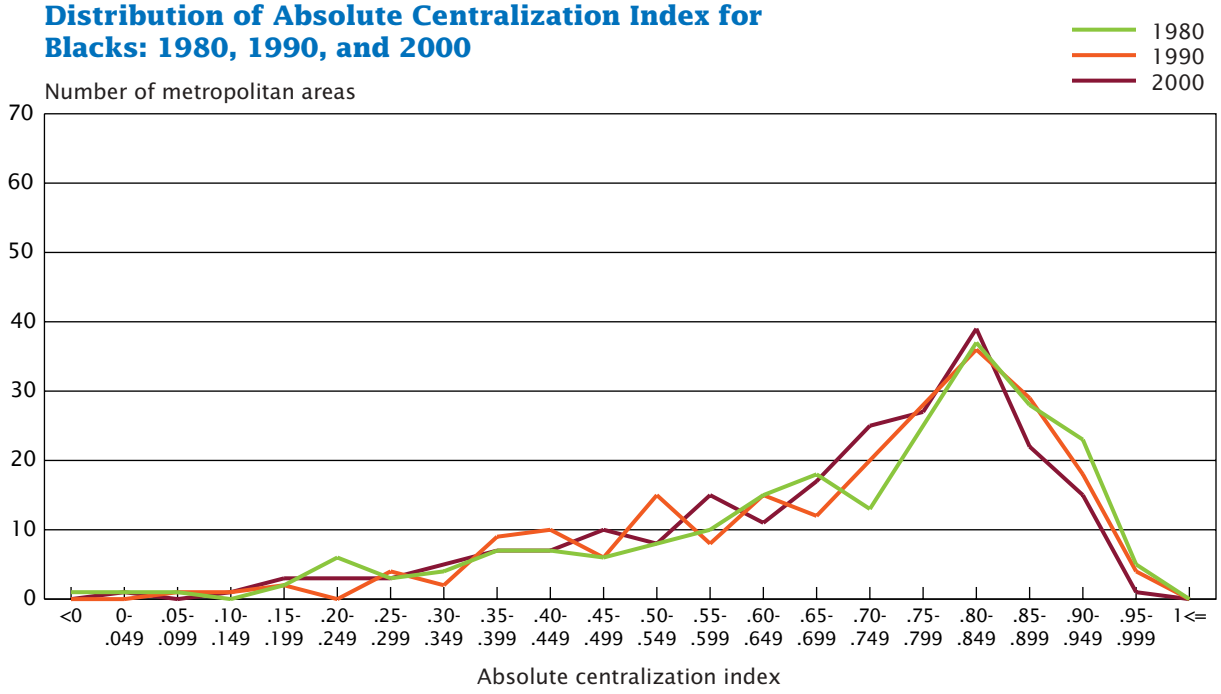
Distribution of Delta Index for Blacks: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 5-1d.

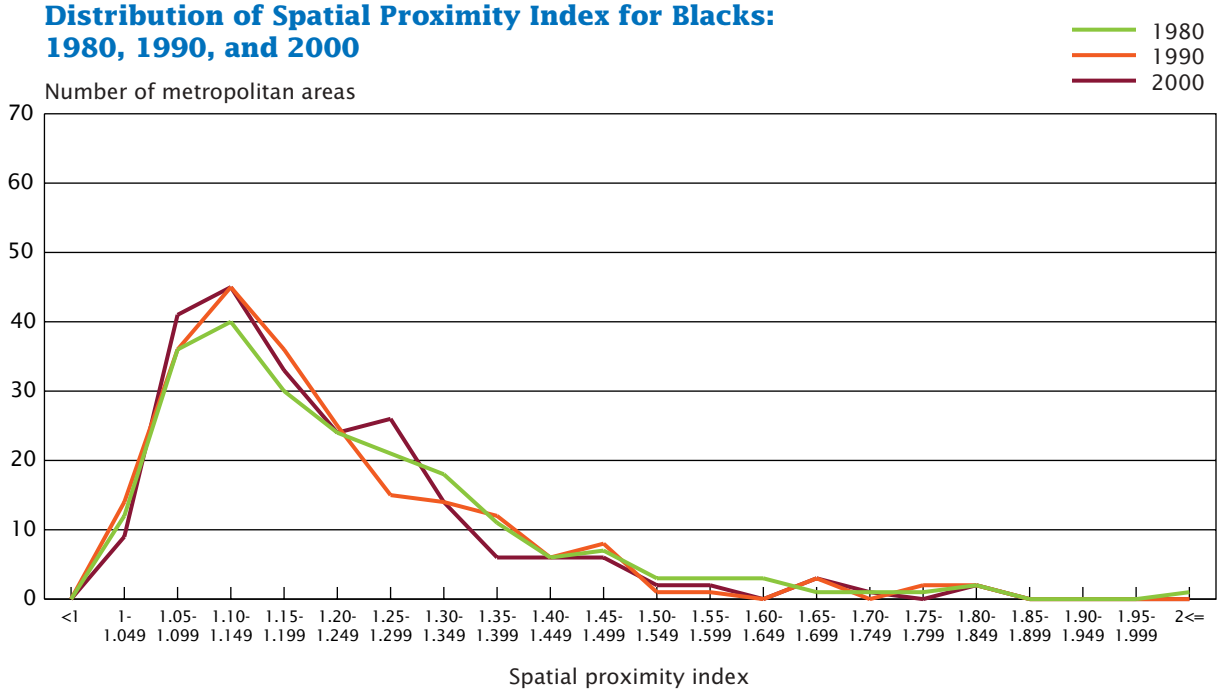
Distribution of Absolute Centralization Index for Blacks: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 5-1e.

Distribution of Spatial Proximity Index for Blacks: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Residential segregation varied by the percentage (expressed in quartiles) of the population that is Black. While all four metropolitan area quartiles showed a pattern of decreasing residential segregation over time, three of the five indexes showed a pattern of higher segregation in places with a higher percentage of Blacks in 2000, while two showed the reverse. As the percentage of the population that is Black increased, Blacks were

- less likely to be evenly spread across the metropolitan area (dissimilarity index),
- less likely to share common neighborhoods (isolation index),
- less concentrated in dense areas (delta index),
- less likely to be centralized (absolute centralization index), and
- more likely to live near other Blacks (spatial proximity index).

The relationship between segregation and quartiles of percent change in the African American population does not show a clear pattern. For example, metropolitan areas with both the largest and smallest percent increases in the African American population experienced significant decreases in dissimilarity, isolation, delta, and spatial proximity.

Table 5-2.
Residential Segregation Indexes for Blacks or African Americans by Characteristics of Selected Metropolitan Areas: 1980, 1990, and 2000

(Weighted averages)

Characteristic	Number of metropolitan areas	Dissimilarity index			Isolation index			Delta index			Absolute centralization index			Spatial proximity index		
		1980	1990	2000	1980	1990	2000	1980	1990	2000	1980	1990	2000	1980	1990	2000
Selected metropolitan areas	220	0.730	0.682	0.645	0.662	0.622	0.601	0.835	0.816	0.793	0.755	0.745	0.724	1.441	1.406	1.381
Region																
Northeast	31	0.779	0.766	0.739	0.690	0.695	0.679	0.860	0.840	0.819	0.754	0.736	0.717	1.442	1.463	1.465
Midwest	53	0.822	0.788	0.741	0.726	0.691	0.651	0.909	0.894	0.859	0.816	0.814	0.788	1.598	1.570	1.526
South	114	0.660	0.605	0.581	0.632	0.585	0.581	0.776	0.764	0.748	0.711	0.710	0.695	1.348	1.312	1.303
West	22	0.714	0.625	0.559	0.580	0.490	0.435	0.867	0.839	0.823	0.806	0.773	0.740	1.478	1.364	1.283
Population Size																
1 Million or more	43	0.780	0.732	0.694	0.717	0.680	0.657	0.869	0.845	0.815	0.805	0.787	0.757	1.543	1.502	1.469
500,000-999,999	33	0.685	0.632	0.597	0.605	0.551	0.529	0.807	0.795	0.776	0.684	0.687	0.684	1.307	1.273	1.263
Under 500,000	144	0.604	0.559	0.530	0.530	0.495	0.484	0.748	0.744	0.738	0.648	0.656	0.652	1.218	1.206	1.205
Percent Black/ African American (Quartiles)																
Under 6.2 percent	55	0.638	0.570	0.531	0.366	0.321	0.311	0.868	0.851	0.836	0.834	0.818	0.798	1.183	1.165	1.157
6.2-10.5 percent	55	0.715	0.661	0.613	0.523	0.474	0.446	0.857	0.843	0.817	0.720	0.709	0.688	1.234	1.222	1.223
10.5-19.1 percent	55	0.754	0.693	0.649	0.673	0.624	0.597	0.851	0.826	0.801	0.771	0.757	0.732	1.495	1.433	1.398
Over 19.1 percent	55	0.729	0.696	0.669	0.719	0.698	0.689	0.816	0.800	0.775	0.742	0.735	0.714	1.481	1.466	1.446
Percent Change (1980-2000) Black/ African American (Quartiles)																
Under 25.4 percent	55	0.793	0.760	0.721	0.736	0.710	0.686	0.872	0.852	0.825	0.787	0.771	0.744	1.608	1.596	1.569
25.4-41.7 percent	55	0.718	0.696	0.673	0.678	0.669	0.659	0.819	0.808	0.791	0.738	0.734	0.722	1.373	1.368	1.361
41.7-63.1 percent	55	0.673	0.621	0.594	0.596	0.554	0.547	0.805	0.793	0.776	0.758	0.745	0.718	1.357	1.318	1.307
Over 63.1 percent	55	0.684	0.601	0.567	0.555	0.487	0.480	0.819	0.797	0.773	0.708	0.719	0.707	1.305	1.254	1.246

Note: Includes 220 Metropolitan Areas with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic. Characteristics of metropolitan areas as of 1980. Segregation estimates are weighted by the size of the Black/African American population.

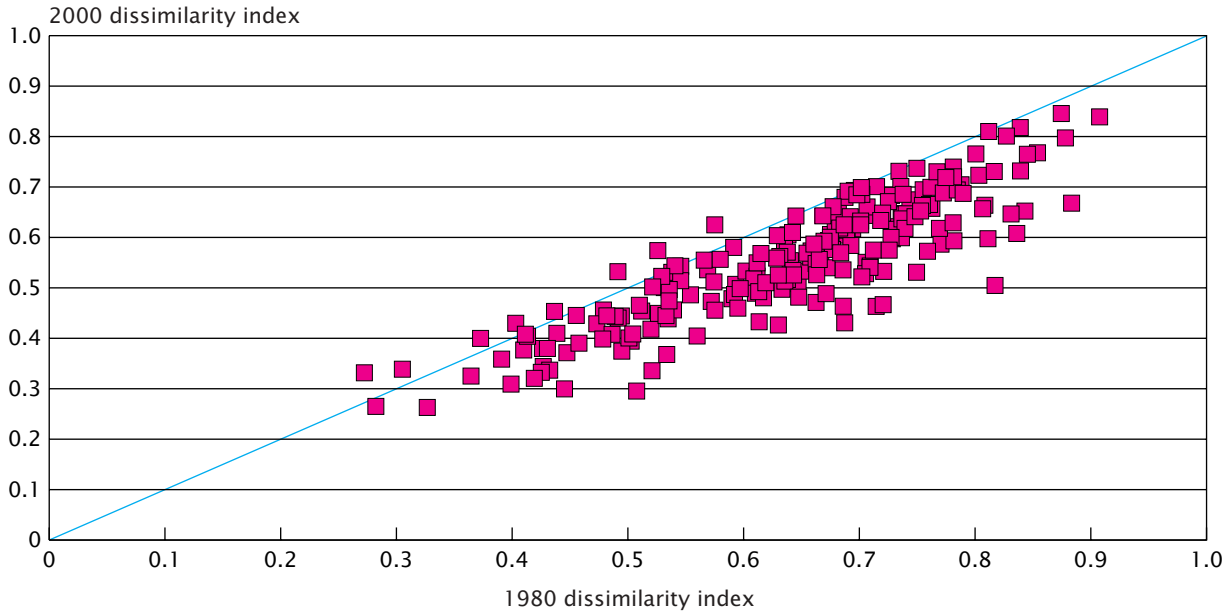
Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Figures 5-2a through 5-2e show that a majority of all of the selected metropolitan areas declined in residential segregation between 1980 and 2000, though most only had a small change (are clustered near the 45-degree line).[5] Table 5-3 shows the percentage of metropolitan areas experiencing change in segregation scores (in five ranges). The proportion of metropolitan areas with increases of 1 percent or more between 1980 and 2000 ranged from only 3 percent (dissimilarity) to 34 percent (spatial proximity). However, the proportion with decreases of 1 percent or more between 1980 and 2000 ranged from 43 percent (spatial proximity) to 92 percent (dissimilarity). Thus, the most widely used index, dissimilarity, showed that only 8 of 220 metropolitan areas had an increase in residential segregation between 1980 and 2000, while 203 metropolitan areas had a decrease. The others indicated a much less uniform pattern but still tended to show a decline in segregation.

[5] These figures are presented for 1980 versus 1990 and 1990 versus 2000 in Appendix D.

Figure 5-2a.

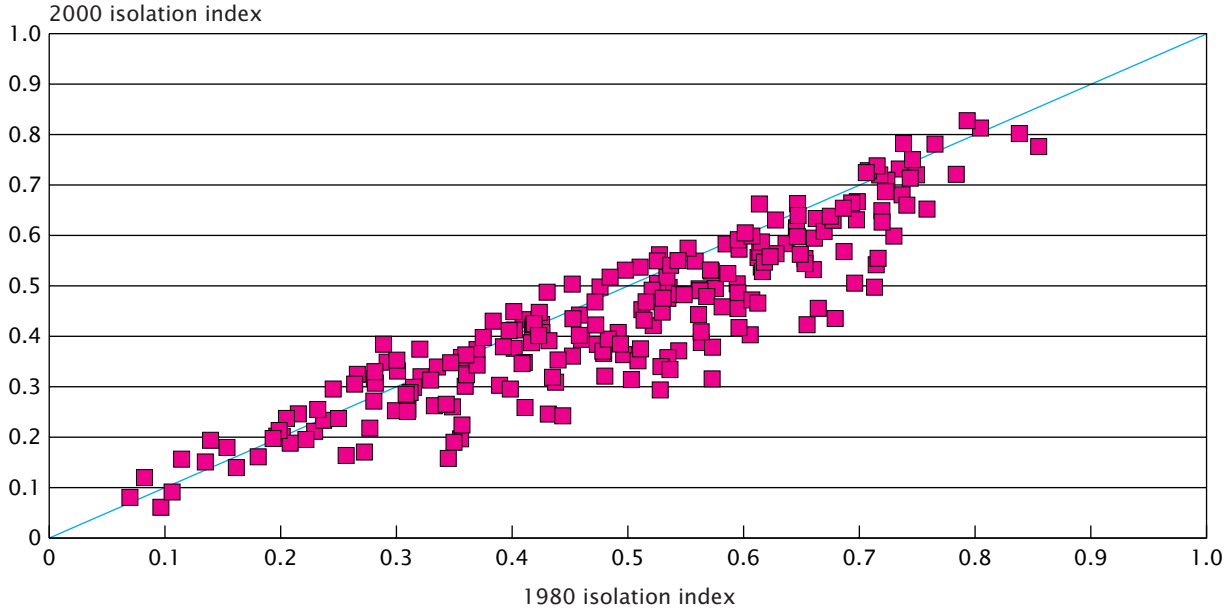
Dissimilarity Index for Blacks for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 5-2b.

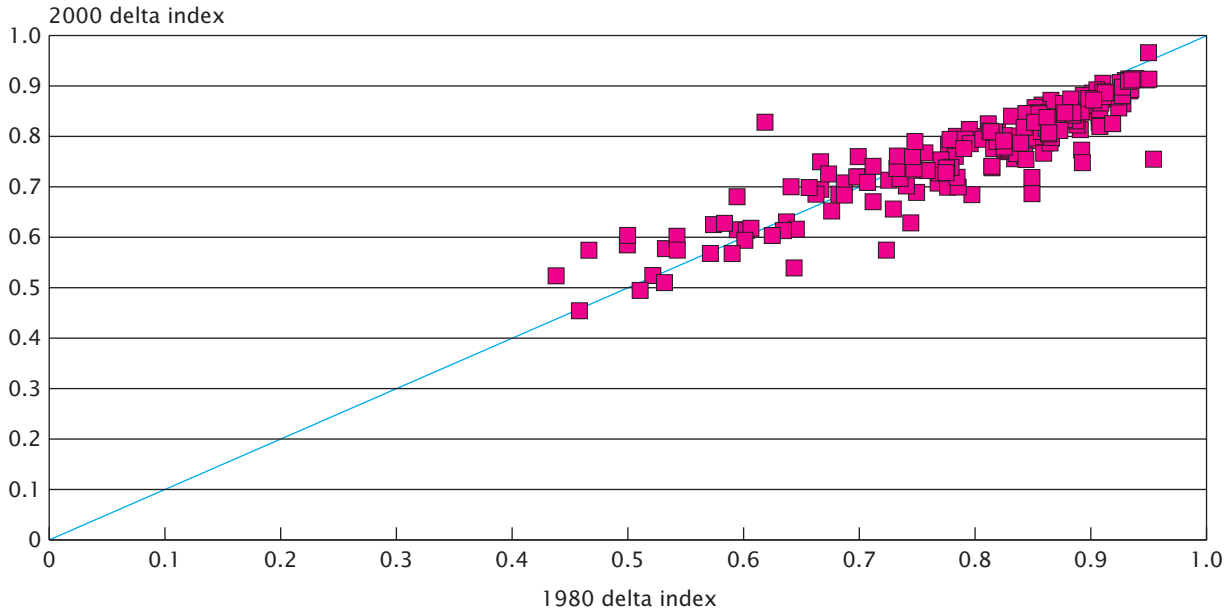
Isolation Index for Blacks for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 5-2c.

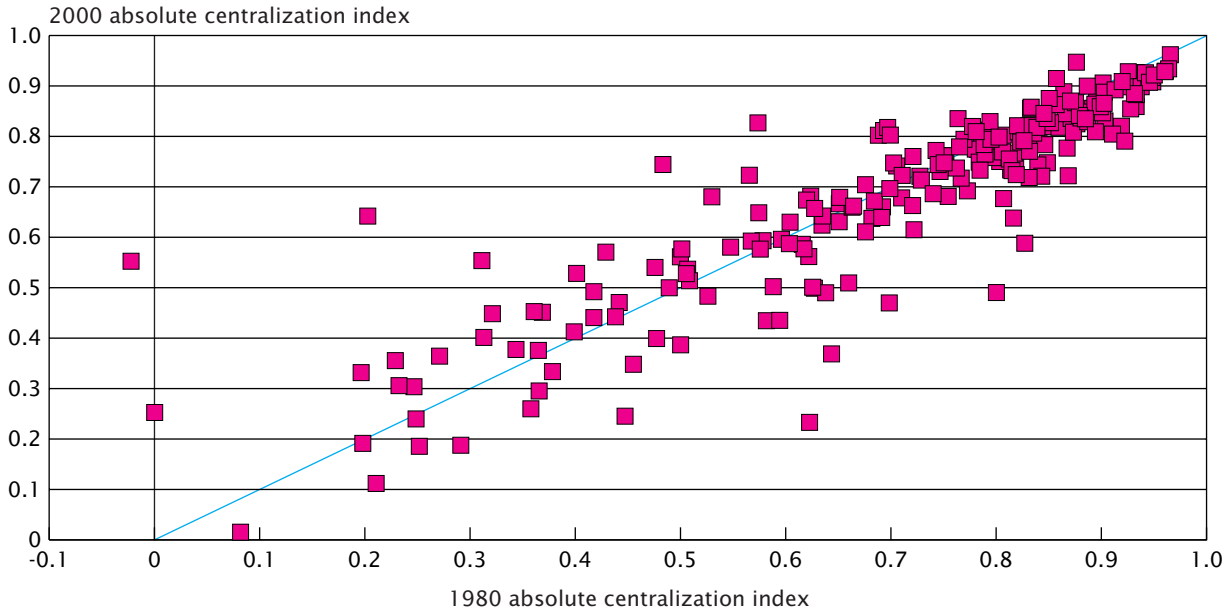
Delta Index for Blacks for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 5-2d.

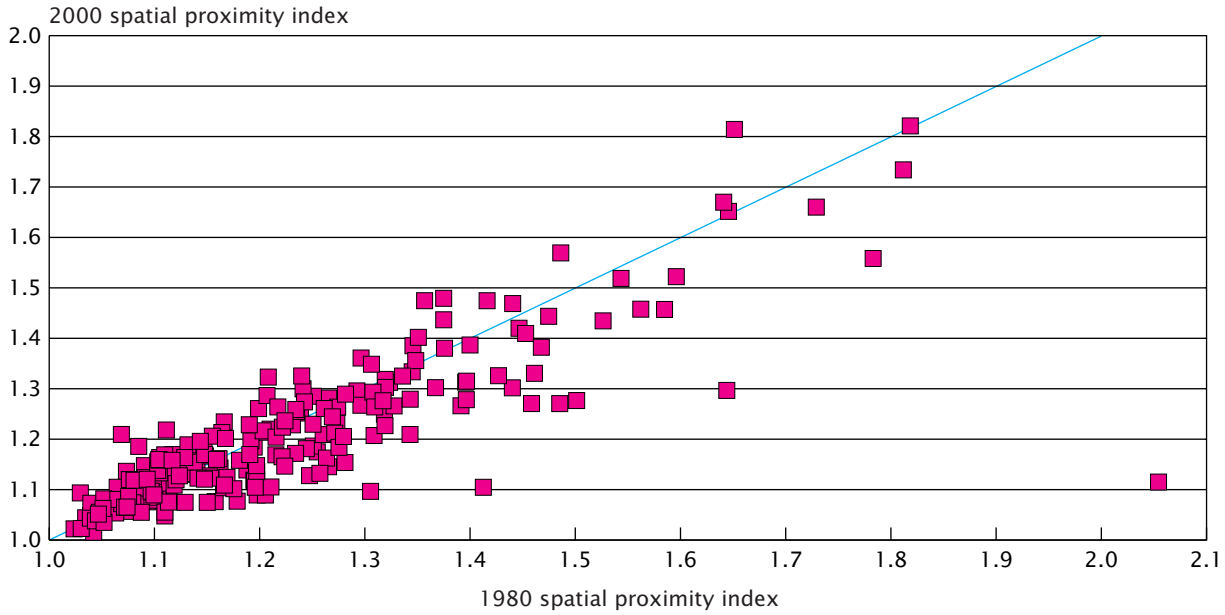
Absolute Centralization Index for Blacks for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 5-2e.

Spatial Proximity Index for Blacks for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Table 5-3.
Distribution of Percent Change in Residential Segregation Indexes for Blacks or African Americans: 1980-2000

Time period change	Dissimilarity index		Isolation index		Delta index		Absolute centralization index		Spatial proximity index	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1980-1990										
Increase of 5 percent or more . .	5	2	19	9	15	7	40	18	8	4
Increase of 1-4.99 percent	10	5	26	12	33	15	37	17	42	19
Change of less than 1 percent .	20	9	13	6	55	25	47	21	74	34
Decrease of 1-4.99 percent	51	23	43	20	100	45	58	26	69	31
Decrease of 5 percent or more .	134	61	119	54	17	8	38	17	27	12
1990-2000										
Increase of 5 percent or more . .	5	2	35	16	6	3	30	14	9	4
Increase of 1-4.99 percent	12	5	37	17	18	8	31	14	66	30
Change of less than 1 percent .	29	13	20	9	39	18	25	11	65	30
Decrease of 1-4.99 percent	46	21	47	21	132	60	77	35	67	30
Decrease of 5 percent or more .	128	58	81	37	25	11	57	26	13	6
1980-2000										
Increase of 5 percent or more . .	7	3	34	15	17	8	41	19	19	9
Increase of 1-4.99 percent	1	0	19	9	18	8	27	12	55	25
Change of less than 1 percent .	9	4	16	7	23	10	24	11	51	23
Decrease of 1-4.99 percent	24	11	24	11	95	43	58	26	46	21
Decrease of 5 percent or more .	179	81	127	58	67	30	70	32	49	22

Note: Includes 220 Metropolitan Areas with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Table 5-4 presents the level of residential segregation for the 43 large metropolitan areas with 1 million or more population in 1980 and at least 3 percent or 20,000 or more Blacks. In terms of the most commonly used residential segregation index, dissimilarity, the five most segregated metropolitan areas for Blacks were, in order, Detroit, Milwaukee-Waukesha, New York, Newark, and Chicago (Newark at 0.801, is not substantively higher than Chicago, 0.797, but both are higher than number six — Cleveland-Lorain-Elyria, at 0.768).

When the other four indexes are taken into account and the ranks averaged across the five indexes, the five most segregated metropolitan areas for Blacks in 2000 were, in order, Milwaukee-Waukesha, Detroit, Cleveland-Lorain-Elyria, St. Louis, and Newark (Milwaukee-Waukesha and Detroit are less than one average rank apart). Cincinnati, Buffalo-Niagara Falls, and New York, are roughly tied for number six, but each is more than one average rank behind Newark. The top ten are rounded out by Chicago and Philadelphia (the latter roughly tied with Kansas City, New Orleans, and Indianapolis). Figure 5-3 shows the settlement pattern of Blacks in 2000 in Milwaukee-Waukesha.

Averaging the ranks across the five indexes, the most segregated areas in 2000 were also the most segregated in 1990, and among the six most segregated in 1980 (Kansas City comes in at number 5 in 1980). In 1990, Milwaukee-Waukesha was the most segregated, followed by Detroit, and in 1980, Detroit was followed by St. Louis.

The five least segregated metropolitan areas for Blacks among the large ones analyzed here were, in order using just the dissimilarity index: Orange County, San Jose, Phoenix-Mesa, Riverside-San Bernardino, and Norfolk-Virginia Beach-Newport (which is substantively similar to Portland-Vancouver). When using all five indexes averaged, the five least segregated metropolitan areas for Blacks were, in order: Orange County, San Jose, Norfolk-Virginia Beach- Newport News, Tampa-St. Petersburg-Clearwater, and San Diego (the latter two are roughly tied, and tied with Providence-Fall River-Warwick). Figure 5-4 shows the settlement pattern of Blacks in Orange County in 2000.

Table 5-4.

Residential Segregation for Blacks or African Americans in Large Metropolitan Areas: 1980, 1990, and 2000

MSA/PMSA Name	Dissimilarity index				Isolation index				Delta index				Absolute centralization index				Spatial proximity index				Average 2000 rank	Rank of averaged 2000 ranks
	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank		
Atlanta, GA MSA	0.737	0.671	0.645	23	0.698	0.657	0.667	11	0.776	0.758	0.699	42	0.767	0.755	0.717	35	1.447	1.443	1.420	15	25.2	26
Baltimore, MD PMSA	0.744	0.713	0.675	17	0.737	0.706	0.680	10	0.851	0.834	0.811	29	0.846	0.848	0.819	18	1.596	1.578	1.522	8	16.4	14
Bergen-Passaic, NJ PMSA	0.803	0.768	0.723	11	0.585	0.596	0.583	19	0.860	0.821	0.787	31	0.710	0.696	0.678	36	1.241	1.284	1.300	24	24.2	25
Boston, MA-NH PMSA	0.763	0.693	0.658	22	0.594	0.543	0.504	27	0.861	0.835	0.812	28	0.877	0.855	0.825	15	1.475	1.469	1.444	13	21.0	17
Buffalo-Niagara Falls, NY MSA	0.801	0.800	0.766	7	0.663	0.651	0.634	16	0.917	0.916	0.878	8	0.860	0.842	0.818	19	1.416	1.453	1.474	9	11.8	7
Chicago, IL PMSA	0.878	0.838	0.797	5	0.855	0.809	0.776	5	0.908	0.888	0.844	18	0.721	0.717	0.663	38	1.812	1.802	1.734	3	13.8	9
Cincinnati, OH-KY-IN PMSA	0.781	0.761	0.739	8	0.637	0.608	0.584	18	0.911	0.920	0.884	5	0.926	0.921	0.898	4	1.323	1.317	1.313	22	11.4	6
Cleveland-Lorain-Elyria, OH PMSA	0.854	0.824	0.768	6	0.784	0.772	0.721	7	0.919	0.901	0.874	9	0.892	0.879	0.856	12	1.729	1.751	1.660	5	7.8	3
Columbus, OH MSA	0.729	0.673	0.616	28	0.576	0.528	0.495	28	0.907	0.887	0.841	19	0.896	0.874	0.869	8	1.319	1.268	1.250	30	22.6	22
Dallas, TX PMSA	0.771	0.625	0.587	33	0.715	0.571	0.542	25	0.855	0.825	0.799	30	0.780	0.800	0.775	25	1.485	1.316	1.271	28	28.2	32
Denver, CO PMSA	0.689	0.640	0.605	30	0.496	0.410	0.364	34	0.907	0.890	0.863	13	0.938	0.918	0.898	3	1.251	1.191	1.186	31	22.2	20
Detroit, MI PMSA	0.874	0.874	0.846	1	0.805	0.823	0.813	2	0.928	0.908	0.865	12	0.889	0.878	0.848	13	1.818	1.826	1.821	1	5.8	2
Fort Lauderdale, FL PMSA	0.836	0.683	0.608	29	0.730	0.581	0.599	17	0.826	0.812	0.770	37	0.483	0.773	0.744	30	1.292	1.173	1.296	25	27.6	30
Hartford, CT MSA	0.712	0.696	0.644	24	0.562	0.543	0.490	29	0.829	0.817	0.773	36	0.819	0.807	0.746	29	1.396	1.432	1.313	21	27.8	31
Houston, TX PMSA	0.754	0.664	0.663	20	0.719	0.635	0.649	15	0.829	0.795	0.775	35	0.846	0.808	0.784	24	1.468	1.353	1.382	17	22.2	20
Indianapolis, IN MSA	0.788	0.746	0.704	13	0.653	0.599	0.554	22	0.927	0.913	0.880	7	0.833	0.861	0.858	11	1.440	1.373	1.302	23	15.2	13
Kansas City, MO-KS MSA	0.773	0.725	0.688	15	0.687	0.615	0.568	20	0.905	0.891	0.862	15	0.903	0.894	0.888	6	1.461	1.361	1.331	18	14.8	11
Los Angeles-Long Beach, CA PMSA	0.808	0.728	0.664	19	0.758	0.693	0.652	14	0.865	0.817	0.787	32	0.843	0.789	0.721	34	1.783	1.652	1.558	7	21.2	19
Miami, FL PMSA	0.785	0.690	0.694	14	0.738	0.735	0.782	3	0.887	0.847	0.831	23	0.807	0.735	0.677	37	1.526	1.454	1.435	14	18.2	15
Milwaukee-Waukesha, WI PMSA	0.839	0.826	0.818	2	0.718	0.725	0.720	8	0.935	0.923	0.893	1	0.894	0.890	0.864	10	1.646	1.696	1.652	6	5.4	1
Minneapolis-St. Paul, MN-WI MSA	0.677	0.622	0.576	34	0.330	0.296	0.313	36	0.897	0.889	0.863	14	0.948	0.938	0.917	1	1.110	1.136	1.169	33	23.6	24
Nassau-Suffolk, NY PMSA	0.767	0.761	0.730	10	0.525	0.540	0.550	23	0.775	0.766	0.737	40	0.378	0.354	0.334	43	1.207	1.260	1.287	26	28.4	33
New Orleans, LA MSA	0.698	0.679	0.684	16	0.715	0.713	0.738	6	0.867	0.836	0.833	22	0.901	0.866	0.847	14	1.351	1.388	1.402	16	14.8	11
New York, NY PMSA	0.812	0.813	0.810	3	0.793	0.818	0.827	1	0.865	0.848	0.834	20	0.789	0.770	0.765	26	1.441	1.454	1.469	10	12.0	8
Newark, NJ PMSA	0.827	0.825	0.801	4	0.765	0.784	0.781	4	0.922	0.905	0.886	2	0.691	0.657	0.639	39	1.651	1.790	1.814	2	10.2	5
Norfolk-Virginia Beach-Newport News, VA-NC MSA	0.595	0.494	0.460	39	0.618	0.551	0.547	24	0.733	0.738	0.736	41	0.747	0.743	0.730	32	1.244	1.179	1.181	32	33.6	41
Oakland, CA PMSA	0.739	0.678	0.618	27	0.649	0.606	0.563	21	0.843	0.809	0.761	38	0.582	0.520	0.435	41	1.427	1.400	1.326	19	29.2	35
Orange County, CA PMSA	0.447	0.382	0.371	43	0.106	0.084	0.091	43	0.644	0.580	0.539	43	0.644	0.517	0.369	42	1.030	1.021	1.023	43	42.8	43
Philadelphia, PA-NJ PMSA	0.781	0.768	0.720	12	0.723	0.719	0.687	9	0.862	0.839	0.816	27	0.836	0.822	0.807	21	1.641	1.678	1.670	4	14.6	10
Phoenix-Mesa, AZ MSA	0.613	0.503	0.433	41	0.355	0.239	0.197	40	0.919	0.902	0.885	4	0.913	0.910	0.892	5	1.088	1.063	1.055	41	26.2	28
Pittsburgh, PA MSA	0.725	0.707	0.671	18	0.545	0.518	0.483	30	0.876	0.873	0.865	11	0.820	0.831	0.821	17	1.261	1.252	1.261	29	21.0	17
Portland-Vancouver, OR-WA PMSA	0.686	0.630	0.464	38	0.350	0.298	0.190	41	0.909	0.899	0.866	10	0.946	0.939	0.907	2	1.175	1.158	1.102	40	26.2	28
Providence-Fall River-Warwick, RI-MA MSA	0.727	0.664	0.600	32	0.308	0.319	0.285	38	0.872	0.848	0.824	25	0.813	0.826	0.755	27	1.105	1.126	1.133	36	31.6	38
Riverside-San Bernardino, CA PMSA	0.526	0.439	0.449	40	0.264	0.234	0.305	37	0.902	0.881	0.886	3	0.875	0.872	0.867	9	1.081	1.089	1.119	37	25.2	26
Rochester, NY MSA	0.677	0.672	0.661	21	0.485	0.499	0.517	26	0.855	0.854	0.845	17	0.834	0.827	0.821	16	1.240	1.277	1.325	20	20.0	16
St. Louis, MO-IL MSA	0.817	0.769	0.731	9	0.741	0.694	0.660	12	0.927	0.899	0.881	6	0.931	0.911	0.885	7	1.562	1.448	1.458	11	9.0	4
San Antonio, TX MSA	0.613	0.543	0.492	36	0.511	0.415	0.375	33	0.842	0.854	0.818	26	0.839	0.846	0.818	20	1.221	1.184	1.165	34	29.8	36
San Diego, CA MSA	0.643	0.579	0.535	35	0.409	0.355	0.346	35	0.852	0.822	0.828	24	0.762	0.730	0.737	31	1.264	1.224	1.163	35	32.0	39
San Francisco, CA PMSA	0.675	0.638	0.600	31	0.514	0.478	0.432	32	0.877	0.858	0.833	21	0.795	0.785	0.794	22	1.167	1.145	1.109	38	28.8	34
San Jose, CA PMSA	0.478	0.430	0.399	42	0.135	0.143	0.151	42	0.790	0.793	0.776	34	0.751	0.752	0.747	28	1.052	1.040	1.035	42	37.6	42
Seattle-Bellevue-Everett, WA PMSA	0.671	0.559	0.489	37	0.357	0.284	0.224	39	0.889	0.871	0.850	16	0.922	0.859	0.791	23	1.196	1.138	1.105	39	30.8	37
Tampa-St. Petersburg-Clearwater, FL MSA	0.781	0.693	0.629	25	0.607	0.510	0.472	31	0.844	0.802	0.754	39	0.617	0.585	0.577	40	1.317	1.241	1.276	27	32.4	40
Washington, DC-MD-VA-WV PMSA	0.687	0.650	0.625	26	0.686	0.653	0.654	13	0.825	0.804	0.779	33	0.819	0.781	0.724	33	1.585	1.508	1.457	12	23.4	23

Note: Includes 43 Metropolitan Areas with 3 percent or 20,000 or more Blacks or African Americans and 1,000,000 or more total population in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Figure 5-3.

The Most Segregated Large Metropolitan Area for Blacks or African Americans in 2000: Milwaukee-Waukesha, WI PMSA

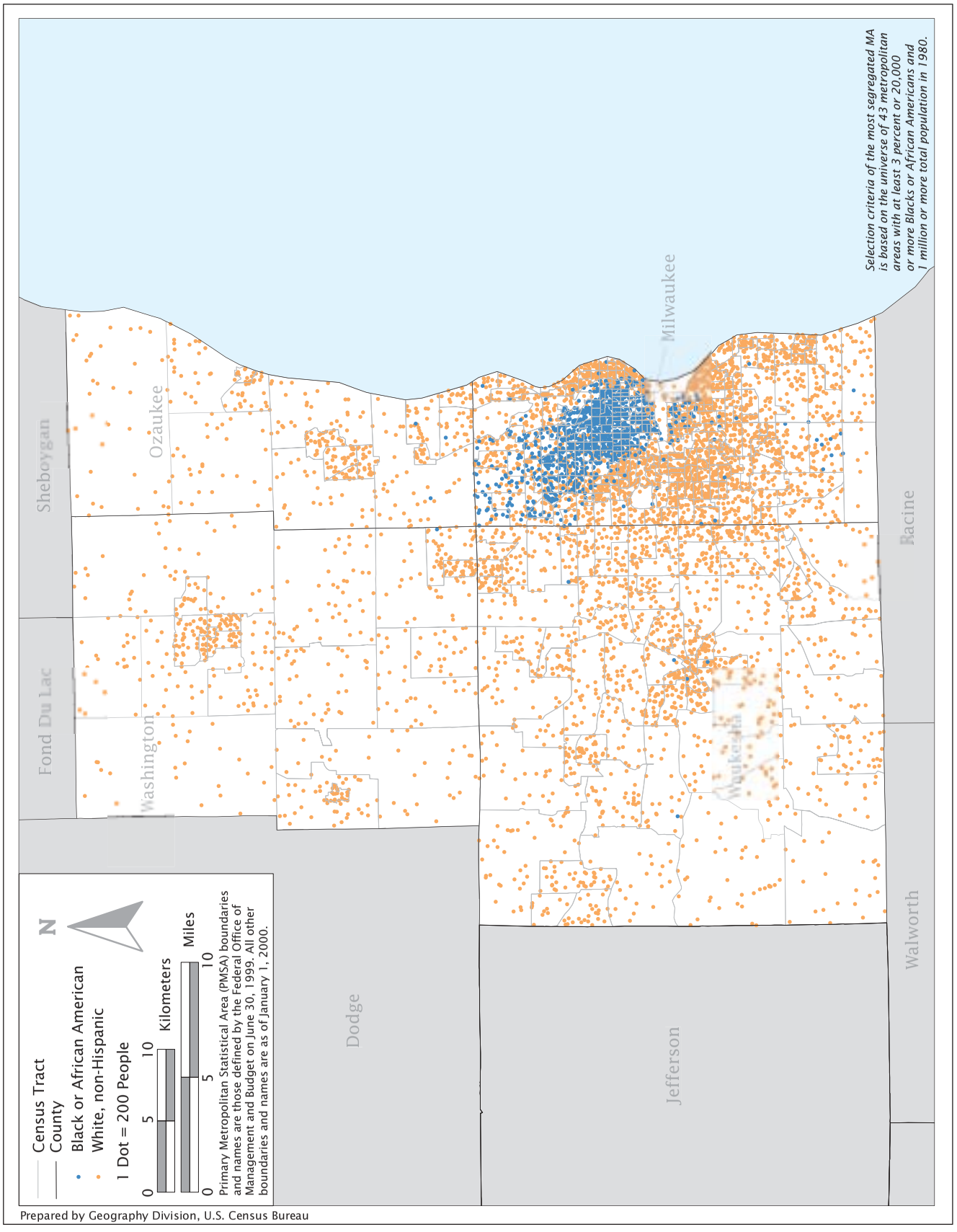
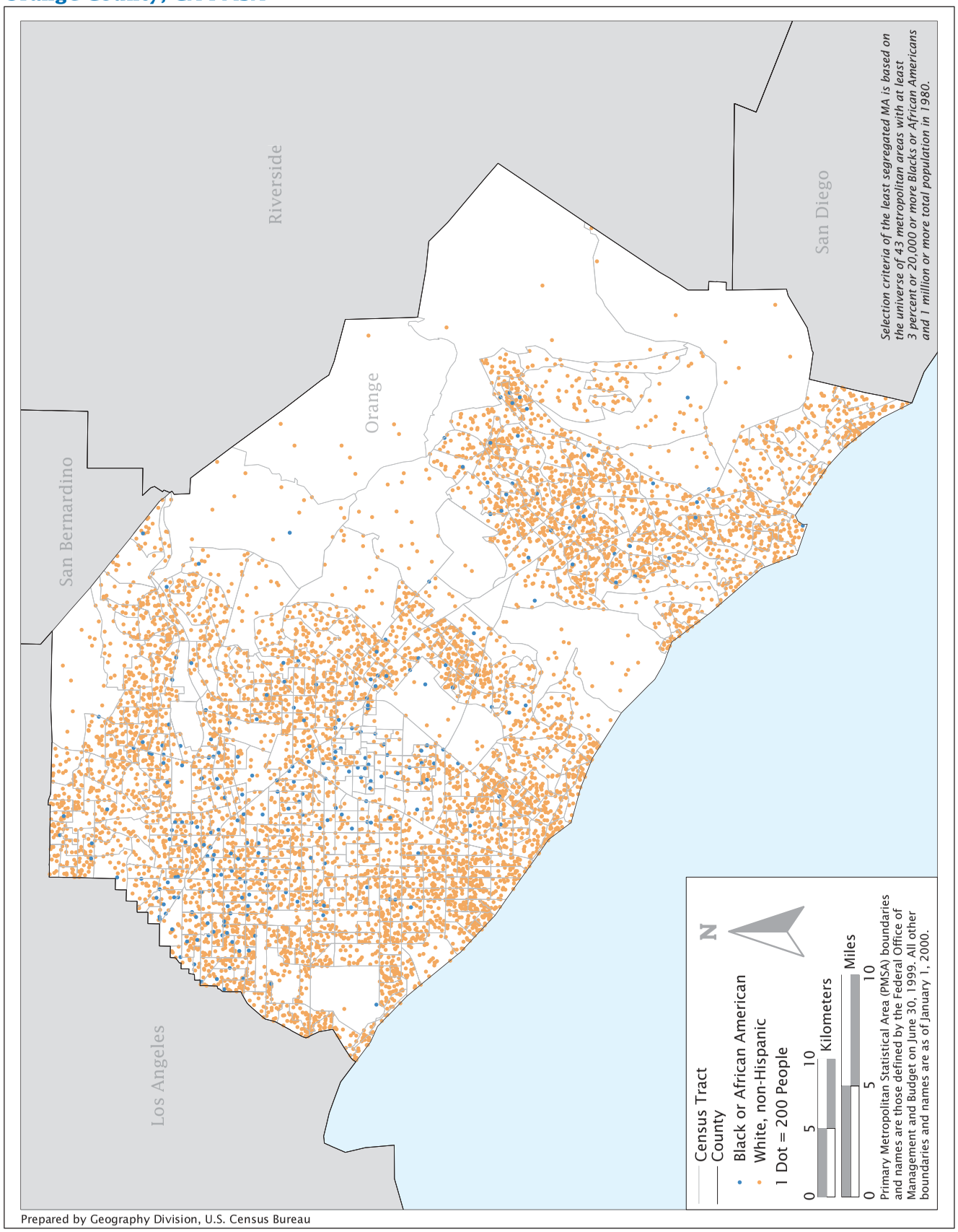


Figure 5-4.

The Least Segregated Large Metropolitan Area for Blacks or African Americans in 2000: Orange County, CA PMSA



The top ten most segregated large metropolitan areas were in the older Northeast-Midwest "Rust Belt," which has tended to lose population in recent decades. All but one of the least segregated large metropolitan areas were in the West and South, where metropolitan areas have tended to gain population. The exception was Providence-Fall River-Warwick in the Northeast, which tied for the fifth-least-segregated and does not fit the broader pattern.

Also of interest is how segregation has been changing for these large metropolitan areas. Table 5-5 presents these results for the 1980 to 2000 period. Of the 43 large metropolitan areas, 40 showed a decline in residential segregation using the dissimilarity index between 1980 and 1990, while the other three showed virtually no change. This was also true for the 1990 to 2000 period. Combined, all large metropolitan areas showed a decline in the residential segregation of Blacks and African Americans between 1980 and 2000, but some of the changes are not substantively significant.

The metropolitan areas showing the largest percentage declines (averaging ranks across the five indexes) were, in order: Los Angeles-Long Beach, Oakland, Seattle-Bellevue-Everett, Tampa-St. Petersburg-Clearwater, and Orange County (the last two were among the five least segregated large metropolitan areas in 2000). The five large metropolitan areas showing the least percentage declines were, in order: Rochester, New York, Riverside-San Bernardino, Pittsburgh, and New Orleans. No large metropolitan area showed an increase in dissimilarity between 1980 and 2000, 10 showed an increase in isolation, 1 in delta, 3 in absolute centralization, and 14 in spatial proximity.

When we examined all selected metropolitan areas (not shown), the five most residentially segregated for Blacks in 2000 were the five large areas already noted (using the averaging over five ranks method) and the five least segregated were Orange County MSA CA, Hickory-Morganton-Lenoir MSA NC, Fort Walton Beach MSA FL, Charlottesville MSA VA, and Auburn-Opelika MSA AL, all in the South or West; the 10 least segregated were all in the South except for Orange County and Hamilton-Middletown.

Based on the ranks of all selected metropolitan areas, the five metropolitan areas showing the greatest *increase* in residential segregation over the two-decade 1980-2000 period were Dover MSA DE, Columbus MSA GA-AL, Goldsboro MSA NC, Athens MSA GA, and Danville MSA VA. The seven metropolitan areas showing the greatest increases were all in the South region (the 8th was in Michigan and the 9th in New Jersey). The five metropolitan areas showing the greatest *decrease* in residential segregation over the 1980-2000 period were all in Florida: Melbourne-Titusville-Palm Bay, Daytona Beach, Fort Myers-Cape Coral, Fort Pierce-Port St Lucie, and Sarasota-Bradenton. Of the next five largest declines, four were in Texas, and another in Florida.

In conclusion, it is clear that the decline in the residential segregation of African Americans in the 1980-1990 period continued apace over the 1990-2000 period. Most strides seemed to have been made in the West and South, particularly in California, Florida, and Texas, although increases in segregation were apparent for some small metropolitan areas in the South. Less progress was made in the Northeast and Midwest, and the large metropolitan areas that had been the most segregated at the beginning of the period remained at or near the top of the list.

Yet, only 8 of the 220 metropolitan areas examined in this chapter showed an increase in the dissimilarity index of residential segregation for Blacks of 1 percent or more, and 203 showed a decline of 1 percent or more — indicating widespread reductions in residential segregation between 1980 and 2000. The reduction of African American residential segregation remained slow, but steady.

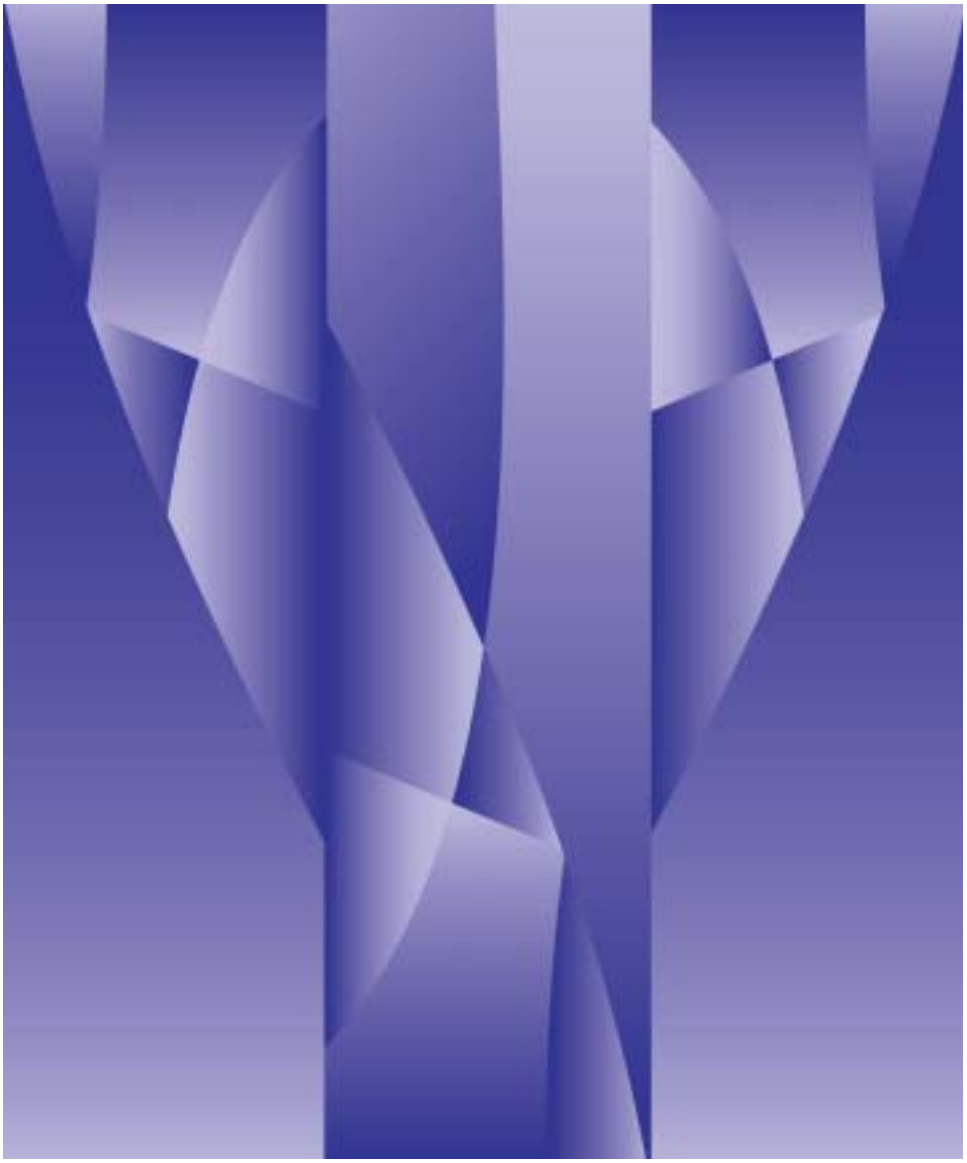
Table 5-5.

Percent Change in Residential Segregation Indexes for Blacks or African Americans in Large Metropolitan Areas: 1980-2000

MSA/PMSA name	Dissimilarity index				Isolation index				Delta index				Absolute centralization index				Spatial proximity index				Rank of change ranks averaged
	1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990 percent change	1990-2000 percent change	1980-2000		
			Percent change	Rank			Percent change	Rank			Percent change	Rank			Percent change	Rank			Percent change	Rank	
Atlanta, GA MSA	–8.9	–3.9	–12.5	25	–6.0	1.6	–4.5	13	–2.4	–7.7	–9.9	41	–1.5	–5.0	–6.5	30	–0.2	–1.6	–1.8	19	27
Baltimore, MD PMSA	–4.2	–5.3	–9.3	14	–4.2	–3.6	–7.7	18	–2.0	–2.8	–4.7	18	0.2	–3.4	–3.2	16	–1.2	–3.5	–4.6	26	15
Bergen-Passaic, NJ PMSA	–4.4	–5.9	–10.0	16	1.9	–2.1	–0.3	11	–4.6	–4.1	–8.5	38	–2.0	–2.6	–4.5	24	3.4	1.3	4.7	5	16
Boston, MA-NH PMSA	–9.1	–5.1	–13.8	26	–8.7	–7.2	–15.2	32	–3.1	–2.7	–5.7	29	–2.5	–3.5	–5.9	28	–0.4	–1.7	–2.1	20	32
Buffalo-Niagara Falls, NY MSA	0.0	–4.4	–4.4	7	–1.7	–2.7	–4.4	12	–0.2	–4.2	–4.3	15	–2.1	–2.8	–4.8	26	2.6	1.4	4.1	6	9
Chicago, IL PMSA	–4.6	–4.8	–9.2	13	–5.4	–4.1	–9.2	21	–2.1	–5.0	–7.0	36	–0.5	–7.5	–8.0	35	–0.5	–3.8	–4.3	24	29
Cincinnati, OH-KY-IN PMSA	–2.5	–2.9	–5.3	9	–4.4	–4.1	–8.3	20	1.0	–3.8	–2.9	8	–0.5	–2.4	–3.0	13	–0.5	–0.3	–0.8	17	10
Cleveland-Lorain-Elyria, OH PMSA	–3.5	–6.8	–10.1	17	–1.5	–6.6	–8.0	19	–2.0	–3.0	–4.9	21	–1.4	–2.7	–4.0	21	1.3	–5.2	–4.0	23	17
Columbus, OH MSA	–7.7	–8.4	–15.5	29	–8.2	–6.4	–14.1	30	–2.3	–5.1	–7.3	37	–2.4	–0.6	–3.0	14	–3.9	–1.4	–5.2	30	34
Dallas, TX PMSA	–18.9	–6.1	–23.9	39	–20.2	–5.0	–24.2	38	–3.5	–3.1	–6.5	31	2.6	–3.2	–0.7	6	–11.4	–3.5	–14.5	43	37
Denver, CO PMSA	–7.2	–5.5	–12.3	24	–17.3	–11.4	–26.7	40	–1.9	–3.0	–4.9	20	–2.1	–2.1	–4.2	23	–4.8	–0.4	–5.2	29	33
Detroit, MI PMSA	0.0	–3.3	–3.3	6	2.3	–1.3	1.0	9	–2.2	–4.7	–6.8	35	–1.2	–3.4	–4.6	25	0.4	–0.3	0.1	14	14
Fort Lauderdale, FL PMSA	–18.3	–11.0	–27.3	41	–20.5	3.1	–18.0	36	–1.6	–5.2	–6.8	34	59.9	–3.7	54.0	1	–9.3	10.5	0.3	13	24
Hartford, CT MSA	–2.3	–7.5	–9.5	15	–3.4	–9.7	–12.8	26	–1.4	–5.4	–6.8	33	–1.5	–7.5	–8.9	36	2.6	–8.3	–5.9	32	36
Houston, TX PMSA	–12.0	–0.1	–12.1	23	–11.8	2.3	–9.8	22	–4.1	–2.6	–6.5	32	–4.5	–3.0	–7.4	33	–7.8	2.1	–5.8	31	35
Indianapolis, IN MSA	–5.4	–5.5	–10.6	19	–8.2	–7.6	–15.2	31	–1.5	–3.6	–5.0	23	3.3	–0.4	3.0	2	–4.7	–5.2	–9.6	41	20
Kansas City, MO-KS MSA	–6.2	–5.1	–10.9	20	–10.4	–7.7	–17.3	35	–1.5	–3.3	–4.8	19	–1.0	–0.7	–1.7	9	–6.8	–2.3	–8.9	40	23
Los Angeles-Long Beach, CA PMSA	–9.9	–8.9	–17.9	35	–8.6	–5.9	–14.0	29	–5.5	–3.7	–9.0	39	–6.5	–8.6	–14.5	40	–7.4	–5.6	–12.6	42	43
Miami, FL PMSA	–12.0	0.5	–11.5	22	–0.4	6.4	6.0	4	–4.5	–1.9	–6.3	30	–8.9	–7.9	–16.2	41	–4.8	–1.3	–6.0	33	30
Milwaukee-Waukesha, WI PMSA	–1.5	–1.0	–2.5	4	1.0	–0.6	0.3	10	–1.2	–3.3	–4.5	16	–0.4	–2.9	–3.3	19	3.0	–2.6	0.4	12	7
Minneapolis-St. Paul, MN-WI MSA	–8.2	–7.3	–14.9	28	–10.3	6.0	–5.0	16	–1.0	–2.9	–3.8	11	–1.1	–2.3	–3.3	18	2.4	2.9	5.3	4	12
Nassau-Suffolk, NY PMSA	–0.7	–4.1	–4.8	8	2.8	1.8	4.6	5	–1.2	–3.8	–4.9	22	–6.3	–5.8	–11.8	38	4.4	2.1	6.6	3	11
New Orleans, LA MSA	–2.7	0.8	–1.9	2	–0.4	3.5	3.2	7	–3.5	–0.5	–3.9	13	–3.9	–2.3	–6.0	29	2.7	1.0	3.8	7	5
New York, NY PMSA	0.1	–0.4	–0.2	1	3.1	1.1	4.3	6	–2.0	–1.6	–3.6	9	–2.4	–0.7	–3.1	15	0.9	1.1	2.0	10	2
Newark, NJ PMSA	–0.3	–2.9	–3.2	5	2.4	–0.3	2.1	8	–1.9	–2.0	–3.9	12	–5.0	–2.7	–7.5	34	8.4	1.3	9.9	1	6
Norfolk-Virginia Beach-Newport News, VA-NC MSA	–17.1	–6.8	–22.7	38	–10.8	–0.8	–11.5	25	0.8	–0.2	0.5	1	–0.4	–1.7	–2.2	10	–5.2	0.1	–5.1	28	18
Oakland, CA PMSA	–8.3	–8.9	–16.4	30	–6.7	–7.1	–13.3	27	–4.0	–5.9	–9.7	40	–10.5	–16.5	–25.3	42	–1.9	–5.3	–7.1	36	42
Orange County, CA PMSA	–14.7	–2.7	–17.0	33	–21.3	9.3	–14.0	28	–9.9	–7.1	–16.2	43	–19.6	–28.7	–42.7	43	–0.9	0.2	–0.7	16	39
Philadelphia, PA-NJ PMSA	–1.8	–6.2	–7.8	11	–0.5	–4.4	–4.9	15	–2.6	–2.7	–5.2	26	–1.6	–1.9	–3.5	20	2.3	–0.5	1.8	11	13
Phoenix-Mesa, AZ MSA	–17.9	–14.1	–29.5	42	–32.7	–17.8	–44.6	42	–1.8	–1.9	–3.7	10	–0.3	–2.0	–2.3	11	–2.3	–0.7	–3.0	21	25
Pittsburgh, PA MSA	–2.5	–5.1	–7.5	10	–4.9	–6.7	–11.2	24	–0.4	–0.8	–1.3	3	1.3	–1.2	0.1	3	–0.8	0.7	–0.1	15	4
Portland-Vancouver, OR-WA PMSA	–8.2	–26.4	–32.4	43	–14.7	–36.4	–45.7	43	–1.0	–3.7	–4.7	17	–0.7	–3.4	–4.1	22	–1.4	–4.9	–6.3	34	38
Providence-Fall River-Warwick, RI-MA MSA	–8.7	–9.6	–17.5	34	3.5	–10.7	–7.6	17	–2.7	–2.8	–5.5	27	1.6	–8.6	–7.1	32	1.9	0.7	2.6	9	21
Riverside-San Bernardino, CA PMSA	–16.7	2.5	–14.6	27	–11.4	30.5	15.6	1	–2.3	0.6	–1.7	4	–0.4	–0.6	–1.0	7	0.8	2.7	3.5	8	3
Rochester, NY MSA	–0.8	–1.7	–2.4	3	2.9	3.7	6.7	3	–0.1	–1.1	–1.2	2	–0.8	–0.7	–1.5	8	3.0	3.8	6.9	2	1
Saint Louis, MO-IL MSA	–5.8	–5.0	–10.5	18	–6.4	–4.8	–10.9	23	–3.1	–2.0	–5.0	25	–2.2	–2.9	–5.0	27	–7.3	0.7	–6.7	35	27
San Antonio, TX MSA	–11.5	–9.2	–19.7	37	–18.9	–9.5	–26.6	39	1.4	–4.2	–2.9	7	0.9	–3.4	–2.5	12	–3.0	–1.6	–4.6	25	22
San Diego, CA MSA	–9.9	–7.6	–16.8	32	–13.0	–2.7	–15.4	33	–3.5	0.7	–2.8	6	–4.3	1.0	–3.3	17	–3.1	–5.0	–8.0	38	25
San Francisco, CA PMSA	–5.6	–5.8	–11.1	21	–7.0	–9.6	–16.0	34	–2.2	–2.9	–5.0	24	–1.3	1.2	–0.1	4	–1.9	–3.1	–4.9	27	19
San Jose, CA PMSA	–10.0	–7.4	–16.7	31	5.9	5.6	11.9	2	0.3	–2.1	–1.8	5	0.2	–0.6	–0.4	5	–1.2	–0.5	–1.6	18	7
Seattle-Bellevue-Everett, WA PMSA	–16.8	–12.6	–27.2	40	–20.3	–21.1	–37.1	41	–2.0	–2.4	–4.3	14	–6.9	–7.9	–14.3	39	–4.8	–3.0	–7.6	37	41
Tampa-St. Petersburg-Clearwater, FL MSA	–11.3	–9.2	–19.5	36	–15.9	–7.5	–22.2	37	–5.0	–5.9	–10.6	42	–5.3	–1.3	–6.5	31	–5.8	2.8	–3.1	22	40
Washington, DC-MD-VA-WV PMSA	–5.3	–3.9	–9.0	12	–4.9	0.2	–4.7	14	–2.6	–3.1	–5.6	28	–4.6	–7.3	–11.6	37	–4.9	–3.4	–8.1	39	30

Note: Includes 43 Metropolitan Areas with 3 percent or 20,000 or more Blacks or African Americans and 1,000,000 or more total population in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.



CHAPTER 6

RESIDENTIAL SEGREGATION OF HISPANICS OR LATINOS: 1980-2000

CHAPTER 6

RESIDENTIAL SEGREGATION OF HISPANICS OR LATINOS: 1980-2000

Census 2000 results showed that Hispanics or Latinos (hereafter referred to as Hispanics) already are or are about to become the largest minority group in the United States. About 14.6 million people identified as Hispanic in 1980 (6.4 percent of the total population); this number grew by over 50 percent to 22.4 million people in 1990 (9.0 percent of the total population), and to 35.3 million people (12.5 percent of the total) in 2000.[1]

Table 6-1 shows the residential segregation indexes for Hispanics for 1980, 1990, and 2000.[2] The dissimilarity, isolation and spatial proximity indexes showed an increase in segregation between 1980 and 2000, and the delta and absolute centralization indexes showed a decrease in segregation.

This lack of a consistent pattern is illustrated by Figure 6-1(a-e), except that the isolation index showed an increase throughout its distribution (rightward shift), as did, to a lesser extent, the spatial proximity index. An examination of Figure 6-2b shows that only two of the 123 selected metropolitan areas had a decrease in the isolation of Hispanics between 1980 and 2000.

For regions, this mixed pattern persisted for the Northeast and Midwest (see Table 6-2). However, four of the five indexes indicated a decline in the residential segregation of Hispanics in Southern metropolitan areas between 1980 and 2000, while four of the five indexes indicated an increase in residential segregation in Western metropolitan areas over the same period.

While the picture was also mixed for metropolitan areas of 1 million or more and areas of under 500,000 people, for medium-sized metropolitan areas (500,000-999,999) three of the five indexes increased, and the other two showed no change. Despite these increases, the medium-sized areas tended to have lower levels of segregation than areas of larger or smaller size.

The highest level of residential segregation among Hispanics was in areas with the highest percentage of Hispanics, in some cases substantially higher segregation (note the isolation index particularly). In 2000, the dissimilarity index was 10 percent higher in areas where the population was 17.5 percent Hispanic or more (highest quartile)

[1] The ethnicity question was moved ahead of the race question on the 2000 Census because research showed it reduced nonresponse to this item.

[2] Using the approach described in Chapter 2 to determine substantive changes as 1 percent of the index range over 3 years, the following critical values are used: dissimilarity, 0.006; isolation, 0.008; delta, 0.005; absolute centralization, 0.010; spatial proximity, 0.009.

Table 6-1.
Descriptive Statistics for Residential Segregation Indexes for Hispanics or Latinos: 1980, 1990, and 2000

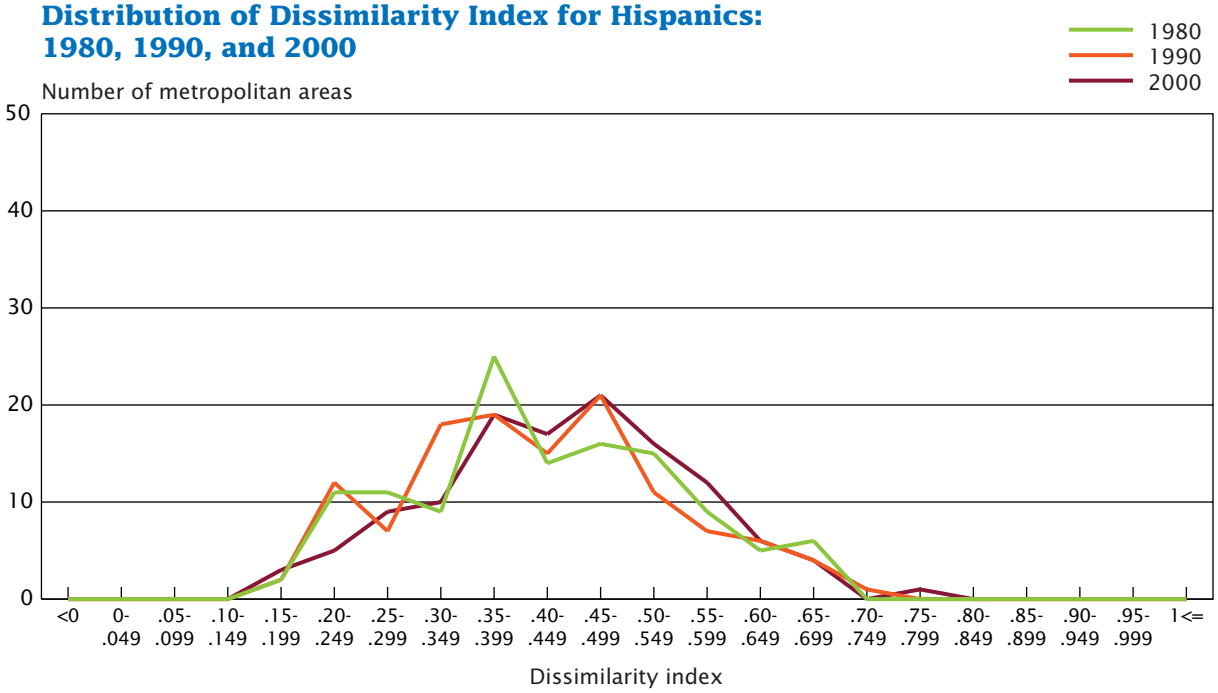
Index, year, and percent change	All metropolitan areas (weighted average)	Selected metropolitan areas					
		Weighted average	Minimum	25th percentile	Median	75th percentile	Maximum
Dissimilarity Index							
1980	0.502	0.511	0.160	0.425	0.525	0.573	0.690
1990	0.500	0.508	0.193	0.423	0.499	0.611	0.744
2000	0.509	0.517	0.175	0.439	0.513	0.611	0.754
Percent change							
1980-1990	–0.3	–0.6	20.9	–0.4	–5.0	6.6	7.7
1990-2000	1.8	1.8	–9.6	3.8	2.7	0.1	1.4
1980-2000	1.5	1.2	9.3	3.3	–2.4	6.7	9.3
Isolation Index							
1980	0.454	0.477	0.030	0.350	0.496	0.604	0.925
1990	0.508	0.531	0.029	0.426	0.501	0.715	0.946
2000	0.552	0.585	0.057	0.486	0.578	0.708	0.952
Percent change							
1980-1990	11.8	11.4	–4.5	21.5	1.1	18.3	2.3
1990-2000	8.7	10.0	94.7	14.1	15.3	–0.9	0.6
1980-2000	21.5	22.5	86.0	38.7	16.5	17.2	2.8
Delta Index							
1980	0.774	0.778	0.440	0.763	0.792	0.823	0.963
1990	0.769	0.772	0.545	0.752	0.779	0.808	0.942
2000	0.764	0.767	0.557	0.755	0.771	0.793	0.950
Percent change							
1980-1990	–0.7	–0.8	23.9	–1.4	–1.6	–1.7	–2.2
1990-2000	–0.7	–0.6	2.2	0.3	–1.1	–1.9	0.9
1980-2000	–1.4	–1.4	26.6	–1.1	–2.7	–3.6	–1.4
Absolute Centralization Index							
1980	0.725	0.731	–0.336	0.698	0.788	0.837	0.954
1990	0.716	0.720	–0.310	0.682	0.757	0.816	0.950
2000	0.689	0.695	–0.476	0.660	0.718	0.801	0.934
Percent change							
1980-1990	–1.2	–1.4	7.7	–2.2	–4.0	–2.4	–0.4
1990-2000	–3.7	–3.5	53.7	–3.2	–5.1	–1.9	–1.7
1980-2000	–4.9	–4.9	–41.9	–5.4	–8.9	–4.3	–2.1
Spatial Proximity Index							
1980	1.200	1.210	1.004	1.112	1.218	1.325	1.635
1990	1.225	1.236	1.004	1.128	1.250	1.347	1.426
2000	1.232	1.246	1.009	1.142	1.241	1.350	1.459
Percent change							
1980-1990	2.1	2.1	0.0	1.4	2.6	1.7	–12.8
1990-2000	0.5	0.8	0.6	1.3	–0.7	0.2	2.3
1980-2000	2.7	3.0	0.6	2.7	2.0	1.9	–10.8

Note: Selected metropolitan areas (123 of 330) are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic. Segregation estimates are weighted by the size of the Hispanic/Latino population.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Figure 6-1a.

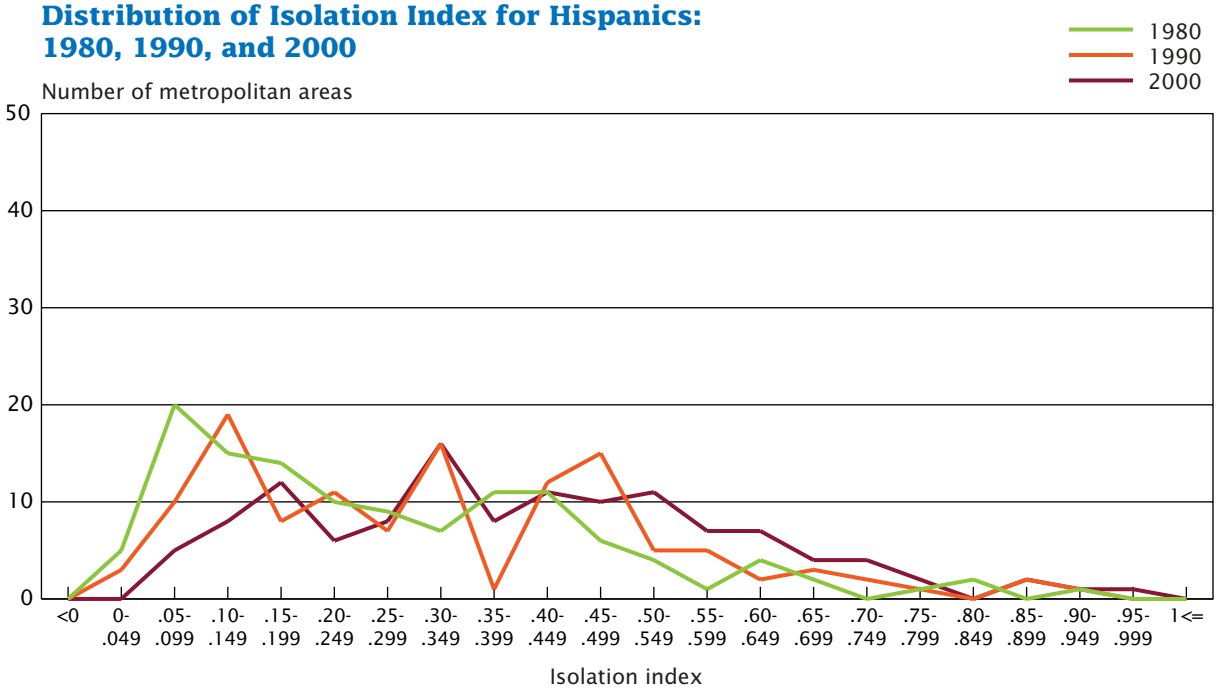
Distribution of Dissimilarity Index for Hispanics: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 6-1b.

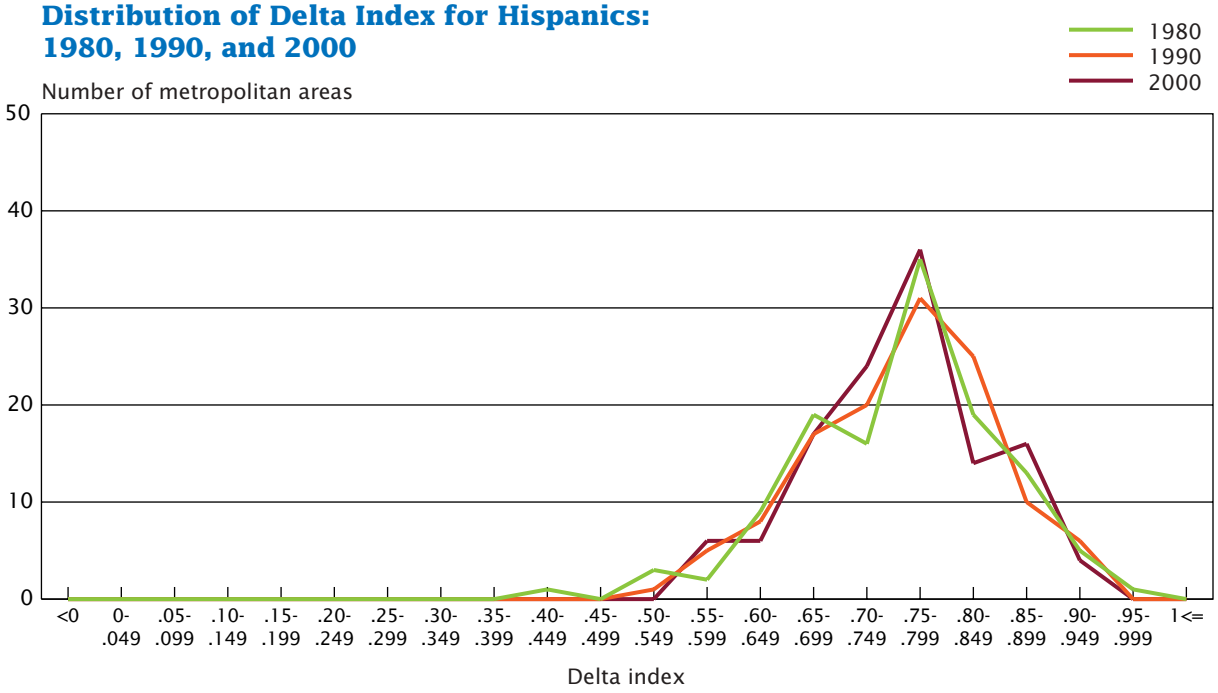
Distribution of Isolation Index for Hispanics: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 6-1c.

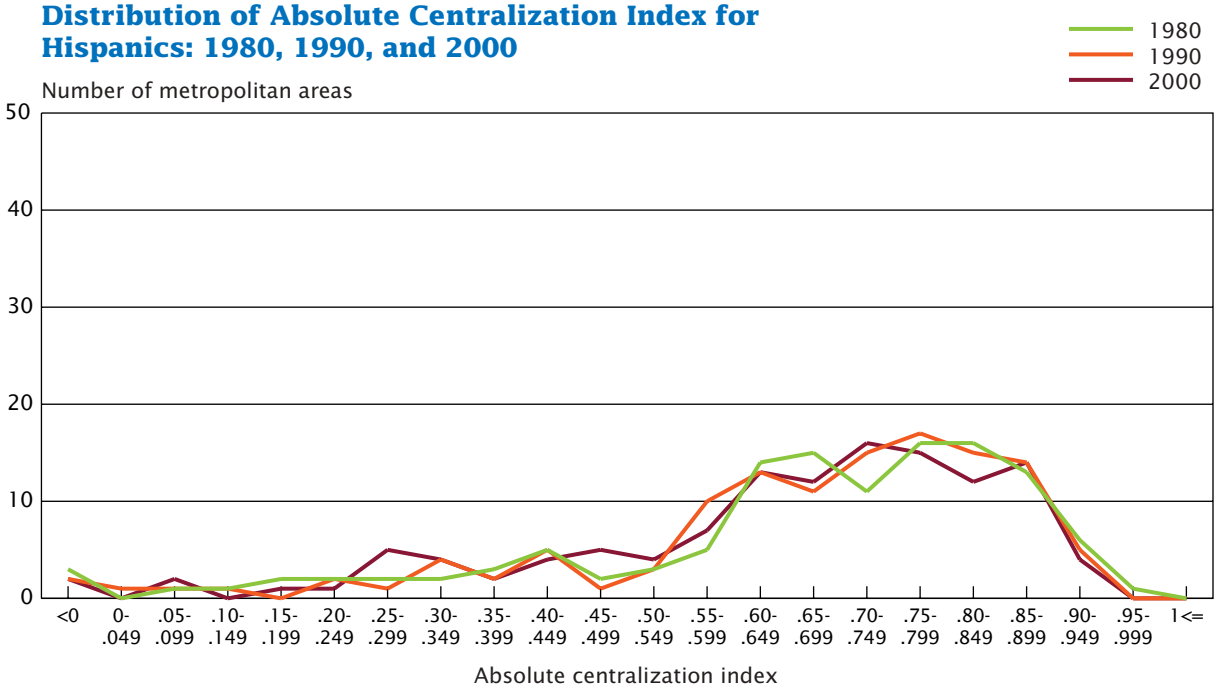
Distribution of Delta Index for Hispanics: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 6-1d.

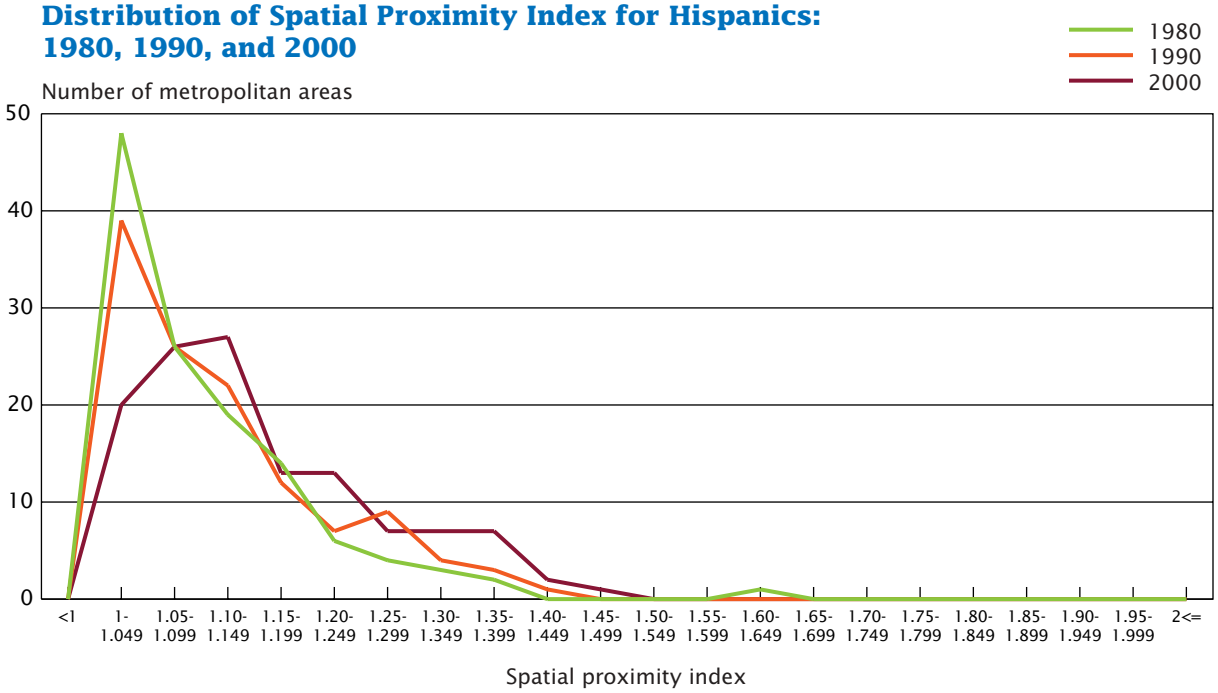
Distribution of Absolute Centralization Index for Hispanics: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 6-1e.

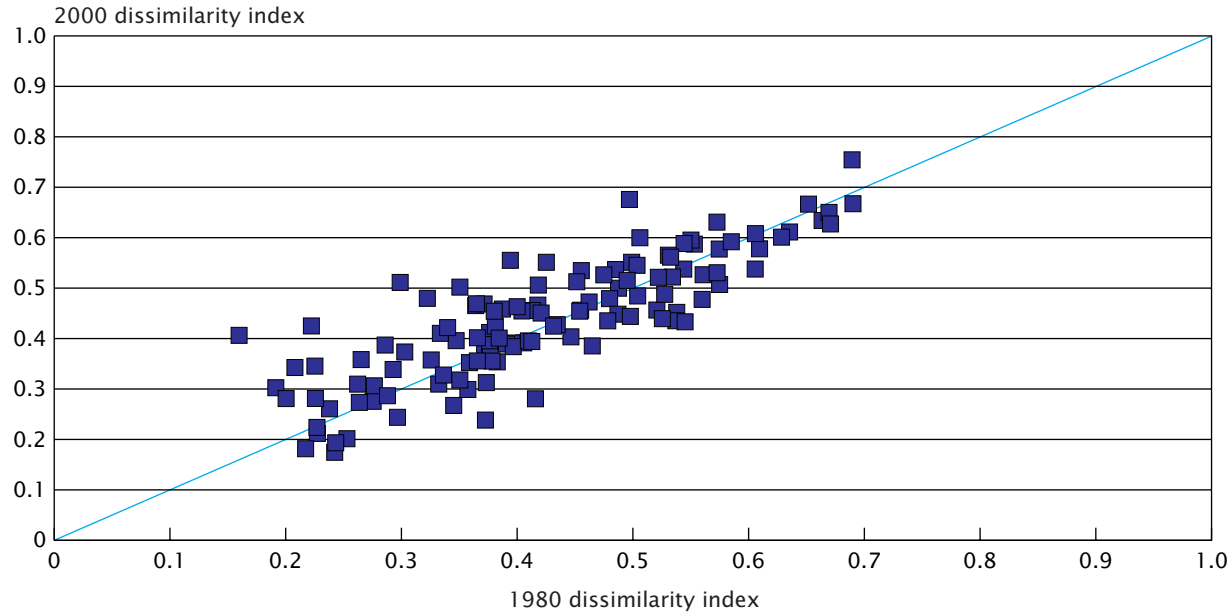
Distribution of Spatial Proximity Index for Hispanics: 1980, 1990, and 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 6-2a.

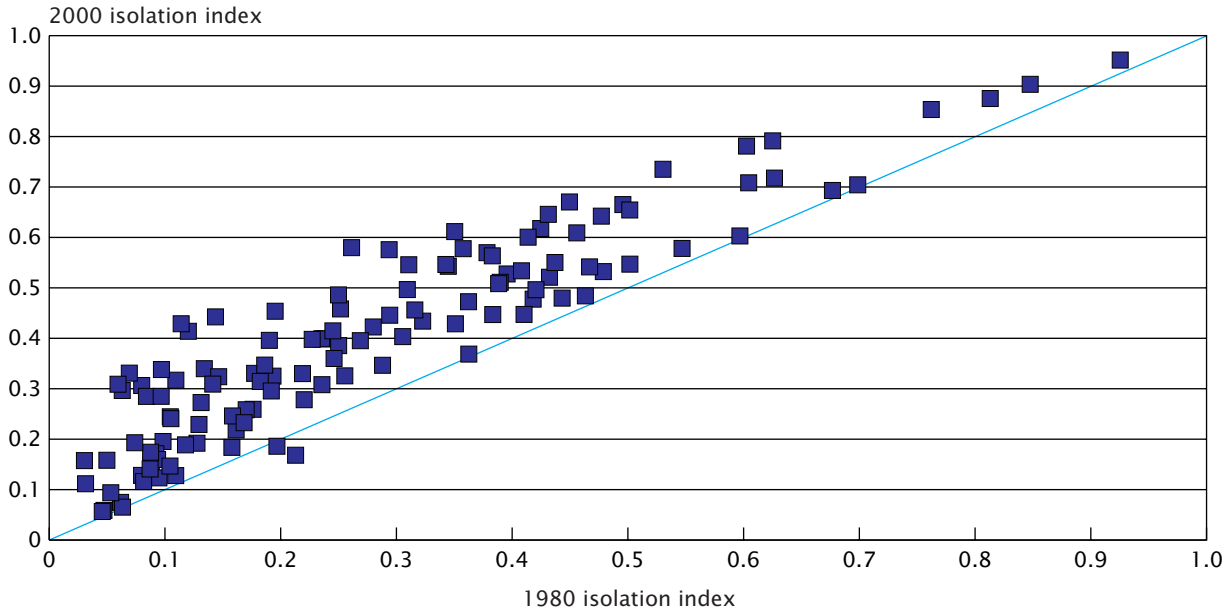
Dissimilarity Index for Hispanics for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 6-2b.

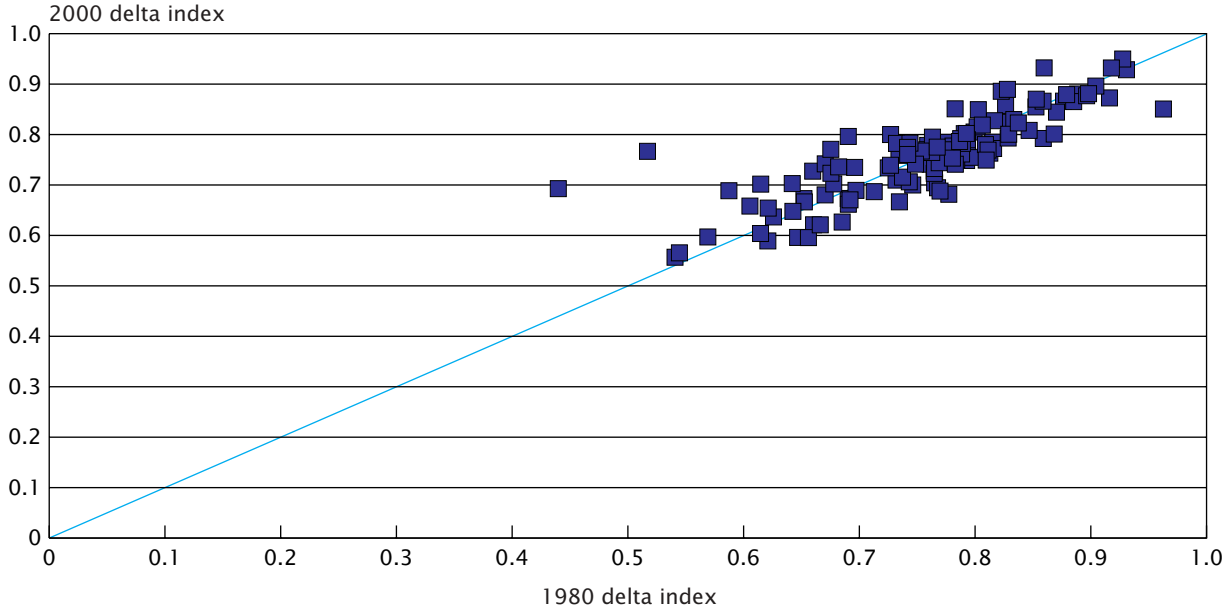
Isolation Index for Hispanics for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 6-2c.

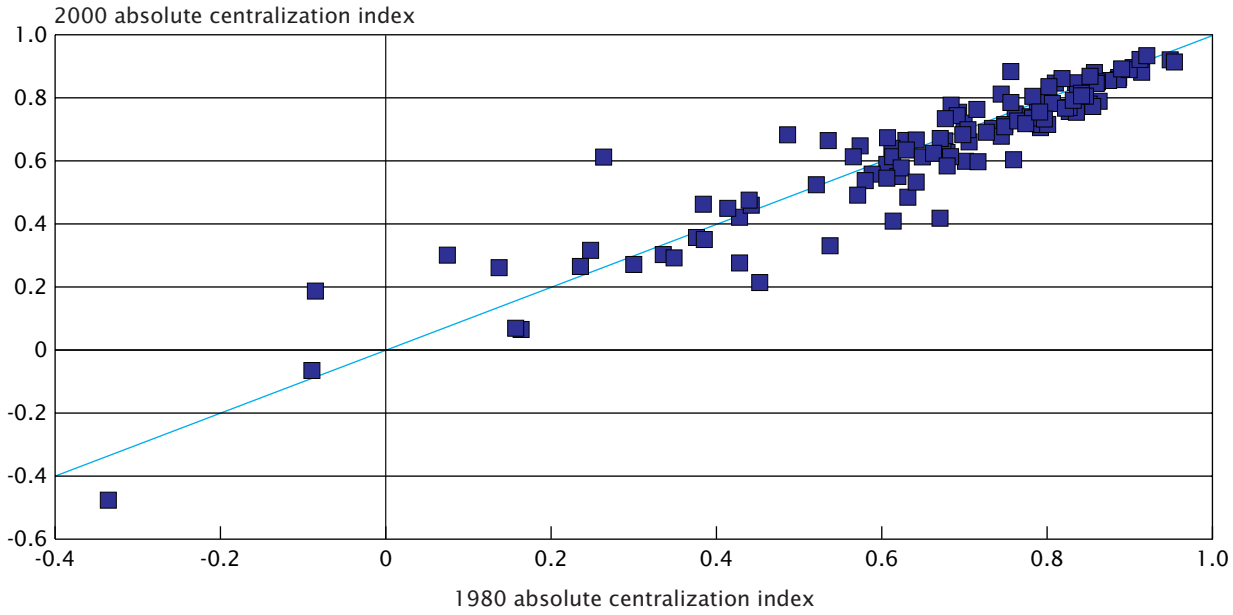
Delta Index for Hispanics for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 6-2d.

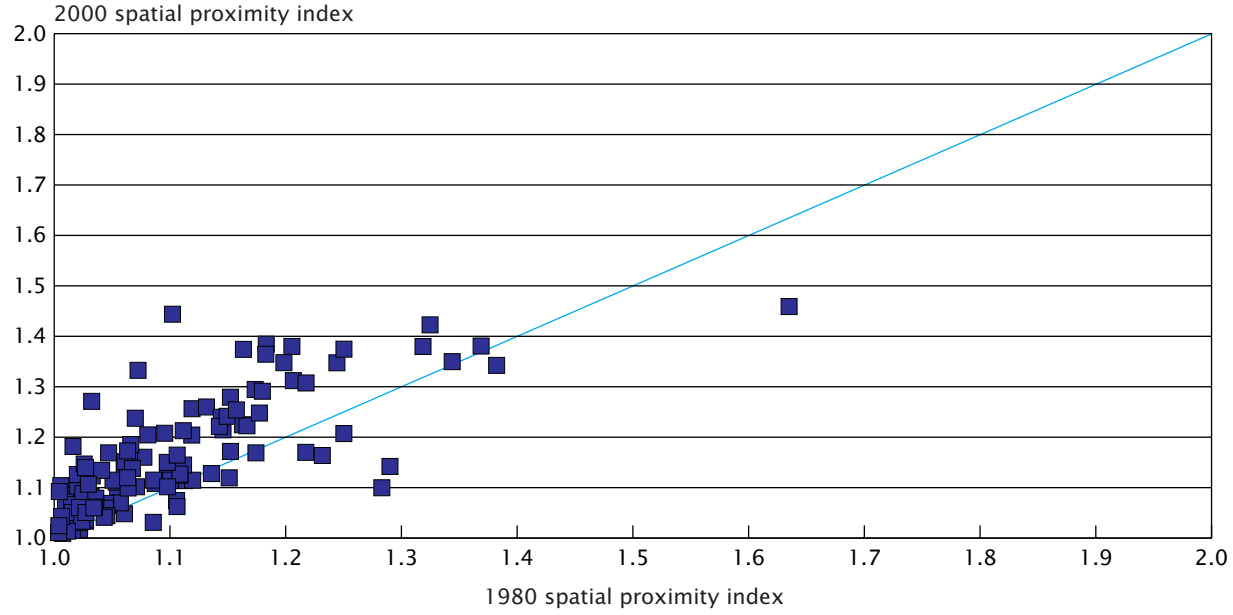
Absolute Centralization Index for Hispanics for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 6-2e.

Spatial Proximity Index for Hispanics for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

than in areas that were under 3.9 percent Hispanic (lowest quartile). When we compared the same group of metropolitan areas for the other indexes, the same pattern emerged — the isolation index was 147 percent higher, the delta index was 3 percent higher, the absolute centralization index was 1 percent higher, and the spatial proximity index was 11 percent higher. With a few minor exceptions, the increase in segregation was monotonic from the under 3.9 percent category to the 3.9 to 7.3 percent category, to the 7.3 to 17.5 percent category, and to the highest quartile.

Metropolitan areas with the largest increases (over 213.9 percent) in Hispanic or Latino population between 1980 and 2000 generally experienced larger increases in segregation than metropolitan areas with relatively small increases in the Hispanic or Latino population. The highest quartile was also the only one which experienced increases in all five dimensions of segregation over the 20-year period. In contrast, metropolitan areas with the smallest increases in the Hispanic or Latino population experienced decreases in three of the five indexes and increases in the other two.

Table 6-3 gives the distribution of percent change in each index by decade. This table also confirms the findings described earlier. The isolation and spatial proximity indexes increased over the 1980-2000 period, the absolute centralization index showed a possible decrease, and the other two

Table 6-2.
Residential Segregation Indexes for Hispanics or Latinos by Characteristics of Selected Metropolitan Areas: 1980, 1990, and 2000

(Weighted averages)

Characteristic	Number of metropolitan areas	Dissimilarity index			Isolation index			Delta index			Absolute centralization index			Spatial proximity index		
		1980	1990	2000	1980	1990	2000	1980	1990	2000	1980	1990	2000	1980	1990	2000
Selected metropolitan areas	123	0.511	0.508	0.517	0.477	0.531	0.585	0.778	0.772	0.767	0.731	0.720	0.695	1.210	1.236	1.246
Region																
Northeast	22	0.616	0.612	0.615	0.497	0.543	0.578	0.792	0.773	0.757	0.721	0.693	0.666	1.196	1.246	1.290
Midwest	13	0.571	0.560	0.567	0.336	0.384	0.449	0.779	0.786	0.765	0.736	0.744	0.710	1.226	1.307	1.328
South	38	0.479	0.456	0.461	0.547	0.563	0.601	0.770	0.759	0.736	0.744	0.741	0.706	1.203	1.186	1.182
West	50	0.477	0.494	0.514	0.449	0.529	0.597	0.777	0.777	0.791	0.726	0.715	0.695	1.218	1.252	1.261
Population Size																
1 Million or more	36	0.540	0.541	0.552	0.478	0.545	0.600	0.788	0.781	0.774	0.774	0.757	0.729	1.236	1.268	1.278
500,000-999,999	16	0.466	0.442	0.463	0.372	0.399	0.468	0.748	0.743	0.744	0.611	0.622	0.624	1.147	1.168	1.204
Under 500,000	71	0.432	0.416	0.421	0.521	0.543	0.589	0.759	0.749	0.756	0.630	0.629	0.609	1.150	1.150	1.154
Percent Hispanic/ Latino (Quartiles)																
Under 3.9 percent	31	0.437	0.444	0.483	0.153	0.207	0.291	0.751	0.754	0.751	0.719	0.719	0.706	1.058	1.094	1.144
3.9-7.3 percent	31	0.477	0.472	0.476	0.255	0.302	0.372	0.726	0.728	0.722	0.599	0.610	0.594	1.093	1.137	1.180
7.3-17.5 percent	31	0.474	0.480	0.517	0.348	0.421	0.524	0.773	0.776	0.777	0.720	0.713	0.698	1.172	1.220	1.268
Over 17.5 percent	30	0.541	0.535	0.532	0.601	0.662	0.718	0.791	0.779	0.774	0.755	0.741	0.711	1.261	1.278	1.266
Percent Change (1980-2000) Hispanic/Latino (Quartiles)																
Under 100.4 percent	30	0.546	0.539	0.538	0.559	0.603	0.647	0.791	0.778	0.759	0.740	0.727	0.698	1.216	1.240	1.249
100.4-148.2 percent	31	0.537	0.546	0.546	0.536	0.625	0.677	0.779	0.771	0.766	0.741	0.723	0.682	1.268	1.302	1.286
148.2-213.9 percent	32	0.457	0.473	0.506	0.335	0.419	0.516	0.743	0.741	0.743	0.691	0.668	0.646	1.142	1.195	1.248
Over 213.9 percent	30	0.413	0.408	0.461	0.264	0.320	0.435	0.793	0.801	0.801	0.729	0.765	0.759	1.098	1.115	1.179

Note: Includes 123 metropolitan areas with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic. Characteristics of metropolitan areas as of 1980. Segregation estimates are weighted by the size of the Hispanic/Latino population.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

indexes did not change much, on average.

Table 6-4 displays 36 large (1 million or more) metropolitan areas with 3 percent, or 20,000 or more, Hispanics in 1980. In terms of the most commonly used residential segregation index — dissimilarity — the five most segregated metropolitan areas for Hispanics were, in order: Providence-Fall River-Warwick, New York, Newark, Hartford, and Los Angeles-Long Beach. When the other four indexes are taken into account, and the ranks averaged across the five indexes, the five most segregated metropolitan areas for Hispanics in 2000 were, in order, New York, Providence-Fall River-Warwick, Phoenix-Mesa, Los Angeles-Long Beach, and Chicago and Newark (tied). The top ten were rounded out by Denver, Riverside-San Bernardino and Houston (tied), and five others that were roughly tied for tenth. Figure 6-3 presents the settlement patterns for Hispanics in New York in 2000.

While New York has been the most segregated large metropolitan area for Hispanics since 1980, Providence has risen from 27th of 36 in 1980 to 10th in 1990, and to 2nd most segregated in 2000. Miami moved in the other direction, from 3rd most segregated in 1980, to 4th in 1990, and to 17th in 2000.

The five least segregated metropolitan areas for Hispanics, based on the dissimilarity index, were, in order: St. Louis, Seattle-Bellevue-Everett, Fort Lauderdale, Portland-Vancouver, and Baltimore. Using all five indexes averaged, the five least segregated metropolitan areas for Hispanics were, in order:

Table 6-3.
Distribution of Percent Change in Residential Segregation Indexes for Hispanics or Latinos: 1980-2000

Time period change	Dissimilarity index		Isolation index		Delta index		Absolute centralization index		Spatial proximity index	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1980-1990										
Increase of 5 percent or more . .	30	24	96	78	7	6	17	14	18	15
Increase of 1-4.99 percent	16	13	12	10	37	30	24	20	46	37
Change of less than 1 percent .	8	7	4	3	28	23	25	20	43	35
Decrease of 1-4.99 percent	25	20	7	6	41	33	36	29	14	11
Decrease of 5 percent or more .	44	36	4	3	10	8	21	17	2	2
1990-2000										
Increase of 5 percent or more . .	55	45	108	88	10	8	15	12	32	26
Increase of 1-4.99 percent	24	20	9	7	30	24	12	10	52	42
Change of less than 1 percent .	6	5	4	3	30	24	19	15	33	27
Decrease of 1-4.99 percent	23	19	0	0	48	39	43	35	4	3
Decrease of 5 percent or more .	15	12	2	2	5	4	34	28	2	2
1980-2000										
Increase of 5 percent or more . .	52	42	114	93	22	18	23	19	56	46
Increase of 1-4.99 percent	9	7	6	5	29	24	14	11	35	28
Change of less than 1 percent .	9	7	1	1	18	15	9	7	20	16
Decrease of 1-4.99 percent	20	16	0	0	31	25	27	22	7	6
Decrease of 5 percent or more .	33	27	2	2	23	19	50	41	5	4

Note: Includes 123 Metropolitan Areas with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Table 6-4.
Residential Segregation for Hispanics or Latinos in Large Metropolitan Areas: 1980, 1990, and 2000

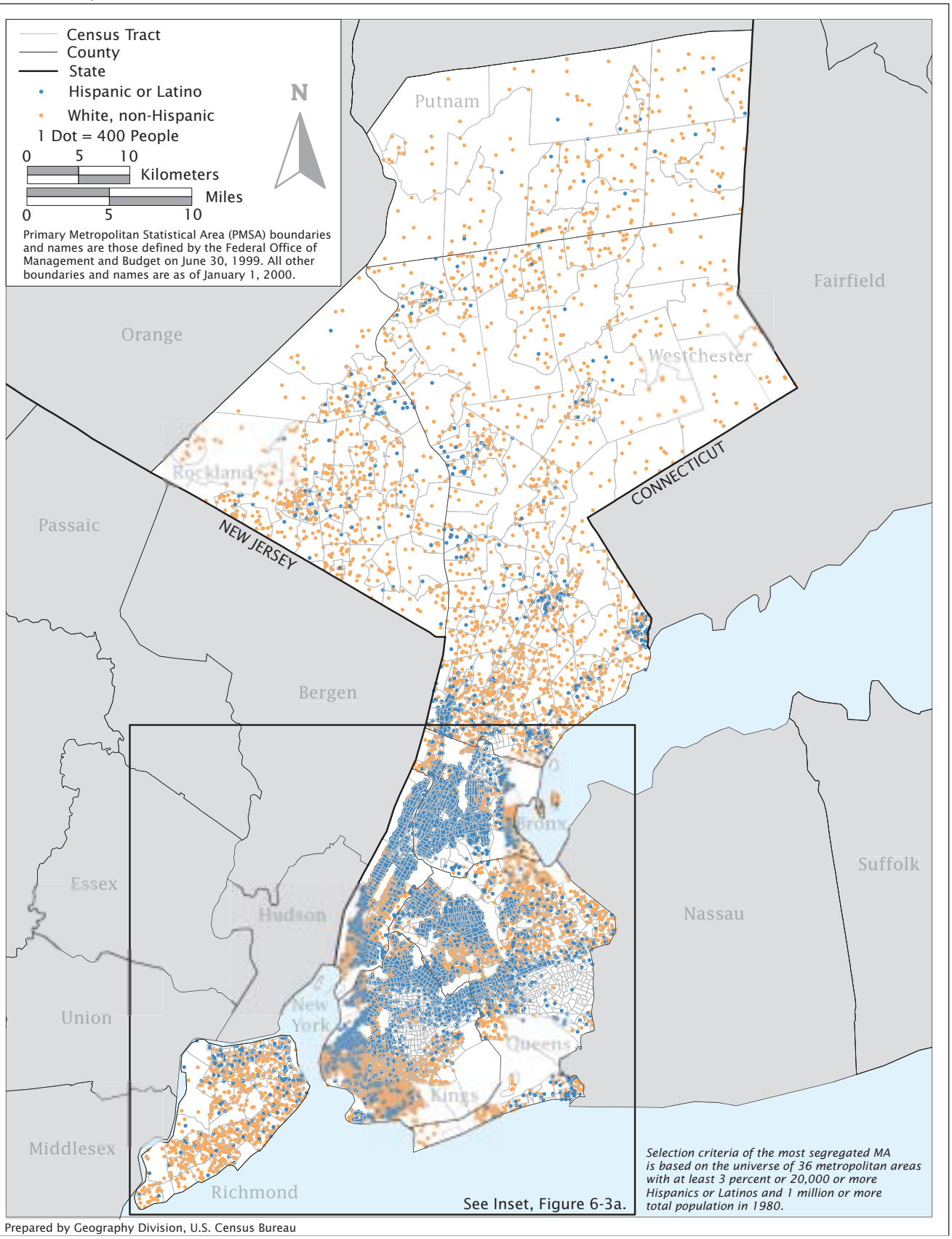
MSA/PMSA name	Dissimilarity index				Isolation index				Delta index				Absolute centralization index				Spatial proximity index				Average 2000 rank	Rank of averaged 2000 ranks
	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank	1980	1990	2000	2000 rank		
Atlanta, GA MSA	0.299	0.349	0.511	18	0.063	0.088	0.297	26	0.652	0.667	0.673	31	0.734	0.737	0.703	23	1.006	1.016	1.104	28	25.2	29
Baltimore, MD PMSA	0.326	0.301	0.358	32	0.062	0.045	0.075	35	0.652	0.651	0.666	32	0.606	0.615	0.589	32	1.011	1.012	1.017	35	33.2	36
Bergen-Passaic, NJ PMSA	0.609	0.588	0.578	10	0.396	0.475	0.528	13	0.732	0.723	0.710	28	0.676	0.653	0.629	27	1.152	1.232	1.279	12	18.0	21
Boston, MA-NH PMSA	0.553	0.547	0.587	9	0.219	0.264	0.330	24	0.759	0.764	0.779	18	0.761	0.746	0.749	15	1.077	1.109	1.160	21	17.4	20
Chicago, IL PMSA	0.635	0.619	0.611	6	0.437	0.487	0.550	9	0.792	0.803	0.774	20	0.749	0.764	0.715	21	1.325	1.426	1.423	1	11.4	5
Cleveland-Lorain-Elyria, OH PMSA	0.575	0.575	0.577	11	0.162	0.183	0.218	30	0.786	0.781	0.768	24	0.613	0.618	0.613	29	1.063	1.095	1.126	26	24.0	27
Dallas, TX PMSA	0.485	0.498	0.537	14	0.311	0.406	0.546	10	0.781	0.788	0.777	19	0.793	0.816	0.801	9	1.119	1.172	1.256	14	13.2	10
Denver, CO PMSA	0.488	0.465	0.500	21	0.323	0.338	0.434	18	0.870	0.857	0.844	4	0.914	0.897	0.881	1	1.146	1.162	1.215	16	12.0	7
Detroit, MI PMSA	0.413	0.398	0.456	26	0.105	0.128	0.244	28	0.690	0.669	0.662	33	0.679	0.651	0.627	28	1.047	1.063	1.169	20	27.0	31
Fort Lauderdale, FL PMSA	0.262	0.259	0.310	34	0.080	0.141	0.306	25	0.440	0.685	0.693	29	0.264	0.705	0.612	30	1.010	1.016	1.071	30	29.6	34
Hartford, CT MSA	0.663	0.659	0.634	4	0.383	0.444	0.447	17	0.816	0.804	0.772	21	0.745	0.731	0.678	25	1.174	1.287	1.295	10	15.4	15
Houston, TX PMSA	0.499	0.494	0.551	12	0.425	0.492	0.618	5	0.797	0.779	0.755	25	0.851	0.813	0.780	11	1.218	1.229	1.307	9	12.4	8
Kansas City, MO-KS MSA	0.404	0.394	0.455	27	0.129	0.135	0.229	29	0.791	0.811	0.802	9	0.834	0.842	0.848	4	1.032	1.035	1.083	29	19.6	23
Los Angeles-Long Beach, CA PMSA	0.573	0.611	0.631	5	0.603	0.715	0.781	2	0.778	0.771	0.770	22	0.788	0.757	0.718	19	1.344	1.379	1.350	5	10.6	4
Miami, FL PMSA	0.525	0.503	0.439	29	0.625	0.734	0.791	1	0.809	0.798	0.780	17	0.855	0.820	0.772	13	1.290	1.250	1.142	24	16.8	17
Milwaukee-Waukesha, WI PMSA	0.550	0.564	0.595	8	0.190	0.266	0.396	21	0.793	0.794	0.786	15	0.749	0.744	0.708	22	1.072	1.143	1.333	8	14.8	12
Minneapolis-St. Paul, MN-WI MSA	0.364	0.355	0.465	25	0.050	0.057	0.158	31	0.788	0.799	0.792	12	0.852	0.857	0.854	3	1.015	1.018	1.066	31	20.4	24
Nassau-Suffolk, NY PMSA	0.371	0.423	0.469	24	0.134	0.221	0.340	22	0.569	0.587	0.597	36	0.385	0.369	0.350	35	1.033	1.064	1.123	27	28.8	33
New Orleans, LA MSA	0.265	0.314	0.358	31	0.104	0.123	0.147	33	0.817	0.827	0.827	5	0.859	0.864	0.846	5	1.024	1.026	1.033	33	21.4	25
New York, NY PMSA	0.652	0.656	0.667	2	0.604	0.665	0.708	3	0.829	0.808	0.793	11	0.837	0.816	0.812	7	1.244	1.299	1.347	6	5.8	1
Newark, NJ PMSA	0.669	0.669	0.650	3	0.408	0.481	0.534	12	0.847	0.826	0.808	7	0.606	0.572	0.545	33	1.183	1.309	1.384	2	11.4	5
Oakland, CA PMSA	0.365	0.388	0.469	23	0.250	0.333	0.486	16	0.697	0.691	0.689	30	0.349	0.341	0.292	36	1.066	1.100	1.185	19	24.8	28
Orange County, CA PMSA	0.425	0.499	0.551	13	0.350	0.501	0.612	6	0.643	0.652	0.648	34	0.642	0.594	0.533	34	1.163	1.317	1.374	3	18.0	21
Philadelphia, PA-NJ PMSA	0.628	0.623	0.601	7	0.351	0.426	0.429	20	0.769	0.752	0.744	26	0.765	0.757	0.727	18	1.183	1.290	1.365	4	15.0	13
Phoenix-Mesa, AZ MSA	0.522	0.486	0.521	16	0.390	0.404	0.511	14	0.859	0.857	0.866	2	0.818	0.849	0.861	2	1.163	1.172	1.225	15	9.8	3
Portland-Vancouver, OR-WA PMSA	0.208	0.256	0.343	33	0.030	0.065	0.158	32	0.727	0.736	0.800	10	0.756	0.747	0.785	10	1.006	1.017	1.043	32	23.4	26
Providence-Fall River-Warwick, RI-MA MSA	0.497	0.614	0.676	1	0.114	0.283	0.429	19	0.783	0.829	0.851	3	0.684	0.785	0.777	12	1.032	1.122	1.271	13	9.6	2
Riverside-San Bernardino, CA PMSA	0.381	0.358	0.425	30	0.358	0.427	0.578	7	0.879	0.868	0.879	1	0.802	0.830	0.835	6	1.119	1.128	1.204	18	12.4	8
St. Louis, MO-IL MSA	0.264	0.229	0.273	36	0.046	0.029	0.057	36	0.737	0.723	0.716	27	0.782	0.755	0.736	16	1.004	1.004	1.011	36	30.2	35
San Antonio, TX MSA	0.575	0.535	0.507	19	0.699	0.688	0.704	4	0.811	0.804	0.769	23	0.827	0.810	0.769	14	1.382	1.347	1.342	7	13.4	11
San Diego, CA MSA	0.418	0.453	0.506	20	0.345	0.436	0.543	11	0.806	0.804	0.819	6	0.706	0.682	0.660	26	1.112	1.166	1.213	17	16.0	16
San Francisco, CA PMSA	0.455	0.498	0.535	15	0.309	0.411	0.497	15	0.793	0.793	0.790	13	0.801	0.764	0.716	20	1.112	1.134	1.145	23	17.2	18
San Jose, CA PMSA	0.452	0.478	0.513	17	0.378	0.471	0.570	8	0.732	0.769	0.782	16	0.704	0.707	0.699	24	1.180	1.233	1.291	11	15.2	14
Seattle-Bellevue-Everett, WA PMSA	0.191	0.207	0.303	35	0.031	0.047	0.112	34	0.787	0.785	0.786	14	0.797	0.755	0.733	17	1.004	1.007	1.025	34	26.8	30
Tampa-St. Petersburg-Clearwater, FL MSA	0.498	0.453	0.444	28	0.220	0.215	0.278	27	0.666	0.622	0.621	35	0.716	0.623	0.597	31	1.098	1.126	1.150	22	28.6	32
Washington, DC-MD-VA-WV PMSA	0.322	0.423	0.480	22	0.097	0.222	0.338	23	0.792	0.810	0.802	8	0.846	0.842	0.805	8	1.027	1.082	1.140	25	17.2	18

Note: Includes 36 Metropolitan Areas with 3 percent or 20,000 or more Hispanics or Latinos and 1,000,000 or more total population in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Figure 6-3.

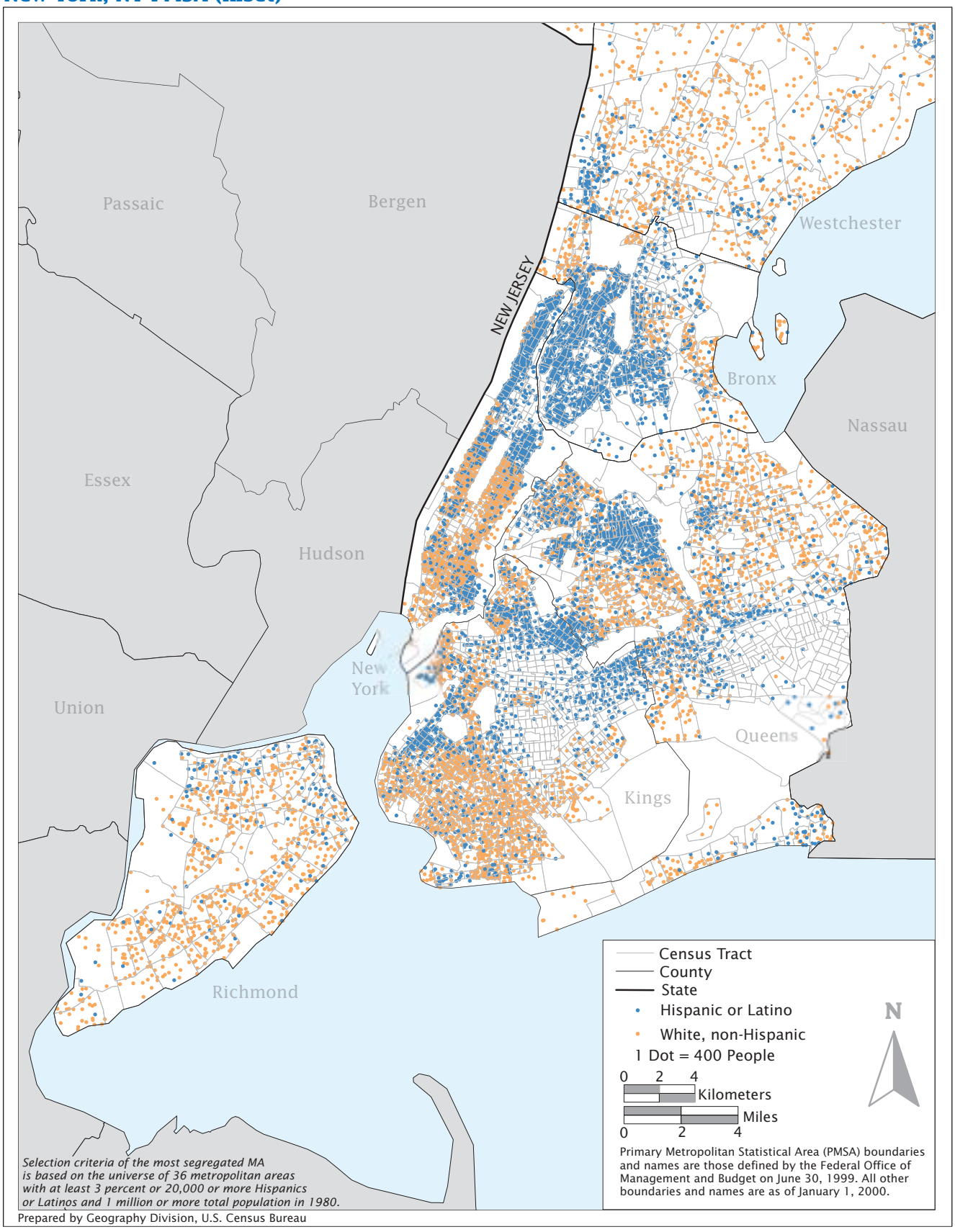
The Most Segregated Large Metropolitan Area for Hispanics or Latinos in 2000: New York, NY PMSA



Prepared by Geography Division, U.S. Census Bureau

Figure 6-3a.

The Most Segregated Large Metropolitan Area for Hispanics or Latinos in 2000: New York, NY PMSA (inset)



Prepared by Geography Division, U.S. Census Bureau

Baltimore; St. Louis; Fort Lauderdale; Nassau-Suffolk; and Tampa-St. Petersburg-Clearwater (Detroit is roughly tied with Nassau-Suffolk and Tampa-St. Petersburg). Figure 6-4 presents the settlement pattern for Hispanics in Baltimore in 2000.

Table 6-5 presents the changes by decade in the 1980 and 2000 period for these large metropolitan areas. Those showing the largest percentage declines (or smallest increases) in residential segregation of Hispanics over the 1980-2000 period (averaging ranks across the five indexes) were, in order: San Antonio, Tampa-St. Petersburg-Clearwater, Miami, Hartford, and St. Louis. The five large metropolitan areas showing the smallest percentage declines (largest increases) were, in order: Providence-Fall River-Warwick, Atlanta, Fort Lauderdale and Portland-Vancouver (tied), and Washington.

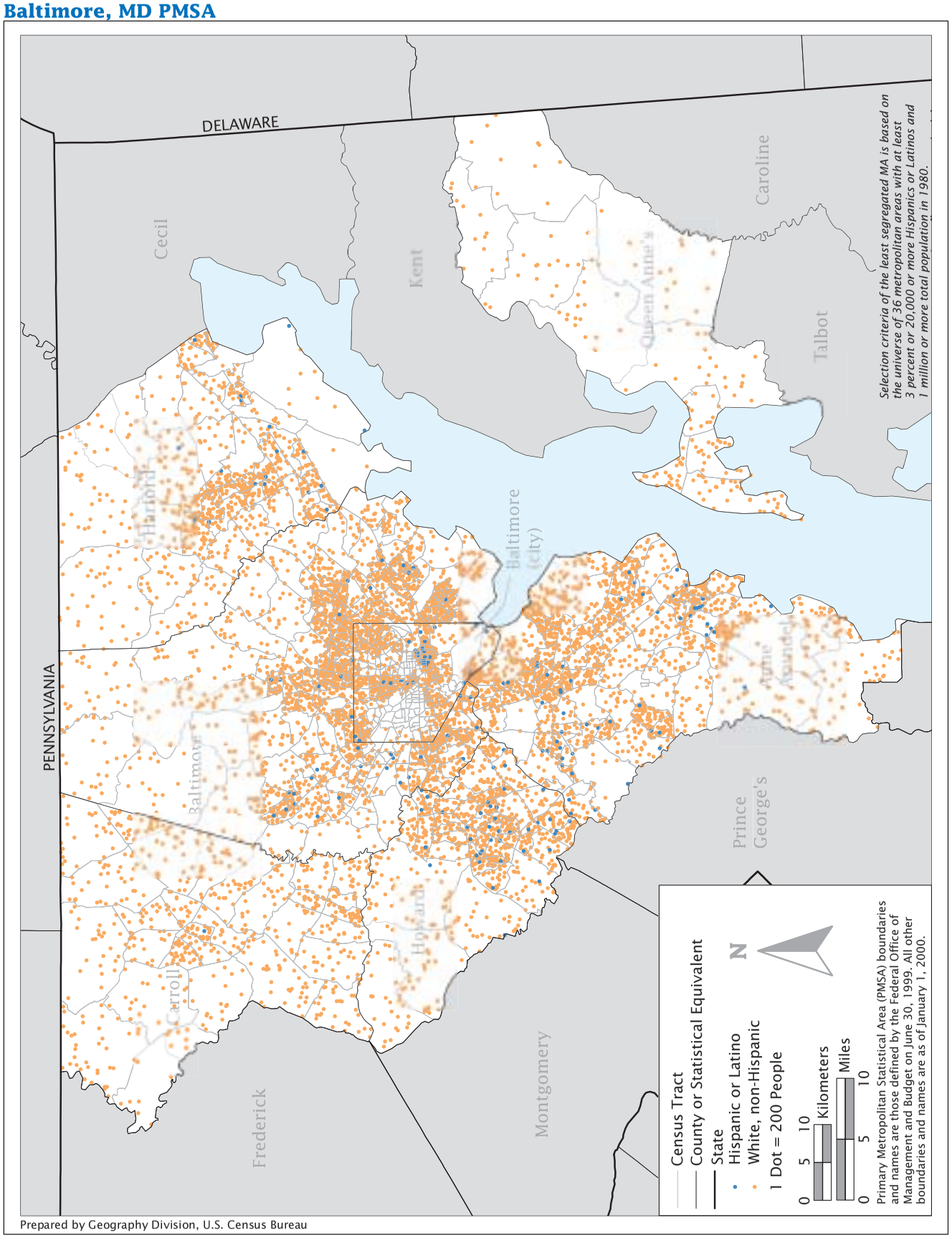
Not only was Providence-Fall River-Warwick one of the most segregated large metropolitan areas for Hispanics in 2000, it was also the metropolitan area with the largest percentage increase over the 1980-2000 period when all 123 selected areas (areas with 20,000 or 3 percent or more Hispanics in 1980) were considered. The other four with the largest increases were Fort Lauderdale, Las Vegas, Santa Rosa, and Richland-Kennewick-Pasco. In contrast to Providence-Fall River-Warwick, Fort Lauderdale was one of the least segregated large areas in 2000.

Of the five metropolitan areas showing the largest percentage decrease, based on the ranks of all selected metropolitan areas in residential segregation over the 1980-2000 period, four were in Texas: El Paso; Odessa-Midland; San Antonio; Jersey City, NJ; and Laredo (tied). Of the next five, another was in North Carolina (Fayettville), another two were also in the South (Miami FL and Galveston-Texas City TX), and two were in the Midwest (Gary IN and Saginaw-Bay City-Midland MI).

Overall, the residential segregation picture for Hispanics in the United States is mixed, with increases slightly outnumbering declines when all measures are considered. There was some slight evidence of declines in segregation in the South, but increases for medium-sized metropolitan areas, and increases in metropolitan areas with large percentages of Hispanics. While New York continued to be the most segregated large metropolitan area for Hispanics, as it had been for two decades, several areas showed significant changes — Providence-Fall River-Warwick, for example, became much more segregated and Miami much less so.

Figure 6-4.

The Least Segregated Large Metropolitan Area for Hispanics or Latinos in 2000: Baltimore, MD PMSA



Prepared by Geography Division, U.S. Census Bureau

Table 6-5.
Percent Change in Residential Segregation Indexes for Hispanics or Latinos in Large Metropolitan Areas: 1980-2000

MSA/PMSA name	Dissimilarity index				Isolation index				Delta index				Absolute centralization index				Spatial proximity index				Rank of change ranks averaged
	1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990 percent change	1990-2000 percent change	1980-2000		1980-1990	1990-2000	1980-2000		
			Percent change	Rank			Percent change	Rank			Percent change	Rank			Percent change	Rank			Percent change	Rank	
Atlanta, GA MSA	16.7	46.5	71.0	1	39.8	236.2	370.1	2	2.3	0.8	3.2	6	0.4	–4.6	–4.2	16	1.0	8.6	9.8	12	2
Baltimore, MD PMSA	–7.5	18.7	9.8	21	–26.8	65.7	21.2	33	–0.2	2.4	2.1	8	1.5	–4.3	–2.8	13	0.1	0.5	0.5	33	22
Bergen-Passaic, NJ PMSA	–3.5	–1.7	–5.2	33	20.0	11.2	33.3	24	–1.2	–1.8	–3.0	27	–3.4	–3.7	–6.9	23	6.9	3.8	11.0	9	26
Boston, MA-NH PMSA	–1.0	7.3	6.2	23	20.7	24.9	50.8	18	0.6	1.9	2.6	7	–2.1	0.4	–1.6	12	3.0	4.6	7.7	17	15
Chicago, IL PMSA	–2.6	–1.2	–3.8	30	11.4	13.0	25.9	30	1.3	–3.6	–2.3	24	2.0	–6.4	–4.5	17	7.6	–0.2	7.4	19	28
Cleveland-Lorain-Elyria, OH PMSA	0.0	0.5	0.5	27	13.3	19.3	35.1	22	–0.6	–1.6	–2.2	23	0.7	–0.7	0.0	9	3.0	2.8	5.9	23	21
Dallas, TX PMSA	2.7	7.8	10.7	17	30.7	34.4	75.7	13	0.9	–1.4	–0.5	19	2.9	–1.8	1.0	7	4.7	7.2	12.3	6	7
Denver, CO PMSA	–4.7	7.6	2.5	25	4.8	28.3	34.5	23	–1.5	–1.5	–3.0	26	–1.9	–1.8	–3.6	15	1.5	4.5	6.0	22	24
Detroit, MI PMSA	–3.8	14.6	10.3	19	22.4	90.9	133.6	9	–3.2	–1.0	–4.1	30	–4.1	–3.8	–7.7	25	1.5	10.0	11.6	7	19
Fort Lauderdale, FL PMSA	–1.2	19.5	18.1	12	76.3	117.5	283.4	3	55.7	1.2	57.5	1	167.4	–13.2	132.2	1	0.7	5.4	6.1	21	3
Hartford, CT MSA	–0.6	–3.8	–4.4	32	15.9	0.6	16.7	35	–1.5	–3.9	–5.3	35	–1.9	–7.2	–8.9	29	9.7	0.6	10.3	11	33
Houston, TX PMSA	–1.0	11.6	10.5	18	16.0	25.4	45.4	20	–2.2	–3.1	–5.2	34	–4.5	–4.0	–8.3	27	0.9	6.4	7.4	20	27
Kansas City, MO-KS MSA	–2.5	15.4	12.5	15	4.6	69.3	77.1	12	2.5	–1.1	1.4	10	0.9	0.6	1.6	6	0.3	4.6	4.9	26	10
Los Angeles-Long Beach, CA PMSA	6.6	3.3	10.2	20	18.7	9.2	29.6	27	–0.9	–0.2	–1.1	21	–4.0	–5.1	–8.9	28	2.6	–2.1	0.4	34	31
Miami, FL PMSA	–4.2	–12.7	–16.4	36	17.4	7.8	26.6	28	–1.3	–2.3	–3.6	29	–4.1	–5.8	–9.7	31	–3.1	–8.6	–11.5	36	34
Milwaukee-Waukesha, WI PMSA	2.4	5.6	8.2	22	39.7	49.0	108.2	10	0.1	–1.0	–0.9	20	–0.6	–4.8	–5.4	20	6.6	16.6	24.3	1	12
Minneapolis-St. Paul, MN-WI MSA	–2.5	31.0	27.8	9	14.0	178.6	217.6	7	1.4	–0.9	0.5	15	0.5	–0.3	0.2	8	0.3	4.7	5.1	25	8
Nassau-Suffolk, NY PMSA	13.8	10.9	26.2	10	65.0	53.7	153.5	8	3.1	1.7	4.9	5	–4.1	–5.1	–9.0	30	3.0	5.6	8.8	15	9
New Orleans, LA MSA	18.3	14.2	35.1	6	18.3	18.9	40.7	21	1.3	0.0	1.3	11	0.5	–2.1	–1.6	11	0.2	0.7	0.9	31	16
New York, NY PMSA	0.7	1.6	2.3	26	10.1	6.5	17.2	34	–2.5	–1.9	–4.3	31	–2.4	–0.6	–3.0	14	4.4	3.8	8.3	16	29
Newark, NJ PMSA	0.0	–2.9	–2.9	29	17.9	11.0	30.8	26	–2.4	–2.2	–4.5	32	–5.7	–4.6	–10.1	32	10.6	5.8	17.0	4	30
Oakland, CA PMSA	6.4	20.8	28.5	8	33.2	46.0	94.5	11	–0.9	–0.2	–1.1	22	–2.3	–14.3	–16.2	34	3.2	7.8	11.2	8	18
Orange County, CA PMSA	17.4	10.4	29.6	7	43.0	22.1	74.5	14	1.4	–0.6	0.8	14	–7.4	–10.3	–17.0	36	13.2	4.3	18.1	3	14
Philadelphia, PA-NJ PMSA	–0.8	–3.6	–4.4	31	21.3	0.7	22.2	32	–2.2	–1.1	–3.2	28	–0.9	–4.1	–5.0	19	9.0	5.8	15.4	5	25
Phoenix-Mesa, AZ MSA	–6.8	7.2	–0.1	28	3.6	26.6	31.1	25	–0.2	1.0	0.9	13	3.8	1.4	5.2	3	0.8	4.5	5.3	24	20
Portland-Vancouver, OR-WA PMSA	23.2	33.6	64.7	2	113.0	143.1	417.9	1	1.2	8.7	10.0	2	–1.2	5.1	3.8	5	1.1	2.5	3.6	28	3
Providence-Fall River-Warwick, RI-MA MSA	23.5	10.1	36.0	5	148.4	51.4	276.1	4	5.9	2.6	8.7	3	14.7	–1.0	13.6	2	8.7	13.3	23.1	2	1
Riverside-San Bernardino, CA PMSA	–6.0	18.5	11.4	16	19.5	35.2	61.5	15	–1.2	1.2	0.0	16	3.4	0.7	4.1	4	0.8	6.8	7.6	18	10
St. Louis, MO-IL MSA	–13.2	19.6	3.7	24	–36.6	94.7	23.5	31	–2.0	–1.0	–2.9	25	–3.6	–2.5	–6.0	21	0.0	0.7	0.7	32	32
San Antonio, TX MSA	–7.0	–5.1	–11.8	35	–1.5	2.4	0.8	36	–0.9	–4.3	–5.2	33	–2.0	–5.0	–6.9	24	–2.5	–0.3	–2.9	35	36
San Diego, CA MSA	8.3	11.8	21.0	11	26.5	24.4	57.4	17	–0.3	1.9	1.6	9	–3.3	–3.2	–6.4	22	4.9	4.0	9.1	14	12
San Francisco, CA PMSA	9.4	7.3	17.4	13	32.9	20.8	60.5	16	0.0	–0.4	–0.5	18	–4.5	–6.4	–10.6	33	2.0	1.0	3.0	29	23
San Jose, CA PMSA	5.9	7.2	13.5	14	24.4	21.0	50.6	19	5.0	1.8	6.9	4	0.4	–1.2	–0.8	10	4.5	4.7	9.4	13	6
Seattle-Bellevue-Everett, WA PMSA	8.0	46.3	58.0	3	49.3	138.0	255.4	5	–0.2	0.1	–0.1	17	–5.3	–2.9	–8.0	26	0.3	1.7	2.0	30	17
Tampa-St. Petersburg-Clearwater, FL MSA	–9.1	–1.9	–10.8	34	–2.2	29.2	26.3	29	–6.7	–0.1	–6.8	36	–13.0	–4.2	–16.6	35	2.6	2.1	4.8	27	35
Washington, DC-MD-VA-WV PMSA	31.3	13.3	48.8	4	129.2	52.1	248.7	6	2.2	–0.9	1.2	12	–0.5	–4.3	–4.8	18	5.4	5.3	11.0	10	5

Note: Includes 36 Metropolitan Areas with 3 percent or 20,000 or more Hispanics or Latinos and 1,000,000 or more total population in 1980. Higher values indicate more segregation; the reference group is White non-Hispanic.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

CHAPTER 7

CROSS-GROUP COMPARISONS

CHAPTER 7

CROSS-GROUP COMPARISONS

The previous four chapters discussed residential segregation within metropolitan areas separately for the four major racial and ethnic minority groups in the United States — American Indians and Alaska Natives, Asians and Pacific Islanders, Blacks or African Americans, and Hispanics or Latinos. This chapter examines these groups together and makes comparisons across them in the extent and patterns of segregation.

Because the size of these populations vary, as does their geographic distribution, this chapter examines the five residential segregation indexes by focusing mainly on all metropolitan areas, rather than the "selected" areas that were highlighted in the previous chapters. As a basis of comparison, Tables 7-1 and 7-2 include descriptive statistics both for all metropolitan areas and for the selected metropolitan areas from chapters 3-6.[1]

[1] As discussed in chapter 2, the set of indexes averaged across all metropolitan data suffers from the weakness of including metropolitan areas where the minority group is so small that segregation estimates may appear peculiar or anomalous. This weakness is at least partly compensated for by computing averages based on weights in all tables, where the weights are the number of the minority group in question present in the metropolitan area.

It is clear from Table 7-1 that Blacks were the most residentially segregated of the four groups examined. They had the highest mean index score for all metropolitan areas for all five indexes for all three censuses. They also had the highest index score for selected metropolitan areas for all five indexes for all three censuses, with only one exception (spatial proximity for American Indians and Alaska Natives for 1990).

Hispanics were the second-most segregated group, with the second-highest index score for all metropolitan areas for all five indexes for all 3 years, with the same exception as that for Blacks. Similarly, they had the second-highest index score for selected metropolitan areas for all five indexes for all 3 years, this time with only two exceptions: spatial proximity for American Indians and Alaska Natives for 1980, and Blacks with the second highest spatial proximity in 1990.

Asians and Pacific Islanders were more residentially segregated than American Indians and Alaska Natives, as measured by four of the five indexes for all years for both all metropolitan areas and selected metropolitan areas. The one exception, again, was spatial proximity.

As noted in Chapter 4, in 2000, the residential segregation indexes for Asians were close to those for Asians and Pacific Islanders (not surprising as they make up the vast majority of the combined group), while the indexes for Native Hawaiians and Other Pacific Islanders (also referred to as Pacific Islanders) tended to be somewhat lower (though not universally so). When all metropolitan areas are considered, both Asians and Pacific Islanders were more segregated than American Indians and Alaska Natives for three of the five indexes — dissimilarity, isolation, and delta — while Pacific Islanders were less segregated than American Indians and Alaska Natives for the other two indexes — absolute centralization and spatial proximity.

The distribution of index values is presented in a histogram for all

Table 7-1.

Descriptive Statistics for Residential Segregation Indexes for American Indians and Alaska Natives, Asians and Pacific Islanders, Blacks, and Hispanics: 1980, 1990, and 2000

(Weighted averages)

Index and race/ethnicity	All metropolitan areas			Selected metropolitan areas		
	1980	1990	2000	1980	1990	2000
Dissimilarity Index						
American Indians and Alaska Natives	0.373	0.368	0.333	0.414	0.404	0.390
Asians and Pacific Islanders	0.405	0.412	0.411	0.422	0.424	0.433
Asians	(NA)	(NA)	0.416	(NA)	(NA)	0.437
Native Hawaiians and Other Pacific Islanders	(NA)	(NA)	0.427	(NA)	(NA)	0.443
Blacks or African Americans	0.727	0.678	0.640	0.730	0.682	0.645
Hispanics or Latinos	0.502	0.500	0.509	0.511	0.508	0.517
Isolation Index						
American Indians and Alaska Natives	0.082	0.102	0.103	0.177	0.188	0.205
Asians and Pacific Islanders	0.233	0.264	0.306	0.292	0.330	0.395
Asians	(NA)	(NA)	0.300	(NA)	(NA)	0.386
Native Hawaiians and Other Pacific Islanders	(NA)	(NA)	0.204	(NA)	(NA)	0.290
Blacks or African Americans	0.655	0.614	0.591	0.662	0.622	0.601
Hispanics or Latinos	0.454	0.508	0.552	0.477	0.531	0.585
Delta Index						
American Indians and Alaska Natives	0.695	0.685	0.676	0.673	0.674	0.699
Asians and Pacific Islanders	0.741	0.753	0.743	0.733	0.742	0.735
Asians	(NA)	(NA)	0.747	(NA)	(NA)	0.739
Native Hawaiians and Other Pacific Islanders	(NA)	(NA)	0.712	(NA)	(NA)	0.687
Blacks or African Americans	0.834	0.816	0.793	0.835	0.816	0.793
Hispanics or Latinos	0.774	0.769	0.764	0.778	0.772	0.767
Absolute Centralization Index						
American Indians and Alaska Natives	0.622	0.619	0.611	0.627	0.646	0.658
Asians and Pacific Islanders	0.701	0.700	0.683	0.700	0.693	0.672
Asians	(NA)	(NA)	0.687	(NA)	(NA)	0.678
Native Hawaiians and Other Pacific Islanders	(NA)	(NA)	0.582	(NA)	(NA)	0.533
Blacks or African Americans	0.753	0.743	0.722	0.755	0.745	0.724
Hispanics or Latinos	0.725	0.716	0.689	0.731	0.720	0.695
Spatial Proximity Index						
American Indians and Alaska Natives	1.197	1.244	1.077	1.376	1.466	1.164
Asians and Pacific Islanders	1.057	1.083	1.096	1.071	1.104	1.124
Asians	(NA)	(NA)	1.098	(NA)	(NA)	1.127
Native Hawaiians and Other Pacific Islanders	(NA)	(NA)	1.050	(NA)	(NA)	1.071
Blacks or African Americans	1.435	1.400	1.374	1.441	1.406	1.381
Hispanics or Latinos	1.200	1.225	1.232	1.210	1.236	1.246

NA Not available.

Note: Selected Metropolitan Areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. Higher values indicate more segregation; the reference group is White non-Hispanics or Latinos. Segregation estimates are weighted by the size of the applicable minority group population.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Table 7-2.
Percent Changes in Residential Segregation Indexes for American Indians and Alaska Natives, Asians and Pacific Islanders, Blacks, and Hispanics: 1980-1990, 1990-2000, and 1980-2000

Index and race/ethnicity	All metropolitan areas			Selected metropolitan areas		
	1980-1990 percent change	1990-2000 percent change	1980-2000 percent change	1980-1990 percent change	1990-2000 percent change	1980-2000 percent change
Dissimilarity Index						
American Indians and Alaska Natives	-1.4	–9.5	–10.8	–2.5	–3.6	–6.0
Asians and Pacific Islanders	1.5	–0.2	1.4	0.4	2.1	2.5
Blacks or African Americans	-6.8	–5.6	–12.0	–6.6	–5.4	–11.7
Hispanics or Latinos	-0.3	1.8	1.5	–0.6	1.8	1.2
Isolation Index						
American Indians and Alaska Natives	24.0	0.8	25.0	5.9	9.3	15.8
Asians and Pacific Islanders	13.4	16.0	31.5	13.0	19.9	35.5
Blacks or African Americans	-6.3	–3.8	–9.9	–6.0	–3.4	–9.3
Hispanics or Latinos	11.8	8.7	21.5	11.4	10.0	22.5
Delta Index						
American Indians and Alaska Natives	-1.4	–1.4	–2.8	0.2	3.7	3.8
Asians and Pacific Islanders	1.5	–1.3	0.3	1.3	–1.0	0.3
Blacks or African Americans	-2.2	–2.8	–5.0	–2.2	–2.8	–5.0
Hispanics or Latinos	-0.7	–0.7	–1.4	–0.8	–0.6	–1.4
Absolute Centralization Index						
American Indians and Alaska Natives	-0.5	–1.2	–1.7	3.0	1.8	4.9
Asians and Pacific Islanders	-0.1	–2.4	–2.5	–1.1	–2.9	–4.0
Blacks or African Americans	-1.3	–2.8	–4.1	–1.3	–2.8	–4.1
Hispanics or Latinos	-1.2	–3.7	–4.9	–1.4	–3.5	–4.9
Spatial Proximity Index						
American Indians and Alaska Natives	4.0	–13.5	–10.0	6.5	–20.6	–15.4
Asians and Pacific Islanders	2.4	1.2	3.7	3.1	1.8	4.9
Blacks or African Americans	-2.5	–1.9	–4.3	–2.4	–1.8	–4.1
Hispanics or Latinos	2.1	0.5	2.7	2.1	0.8	3.0

Note: Selected Metropolitan Areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. Higher values indicate more segregation; the reference group is White non-Hispanica or Latinos.

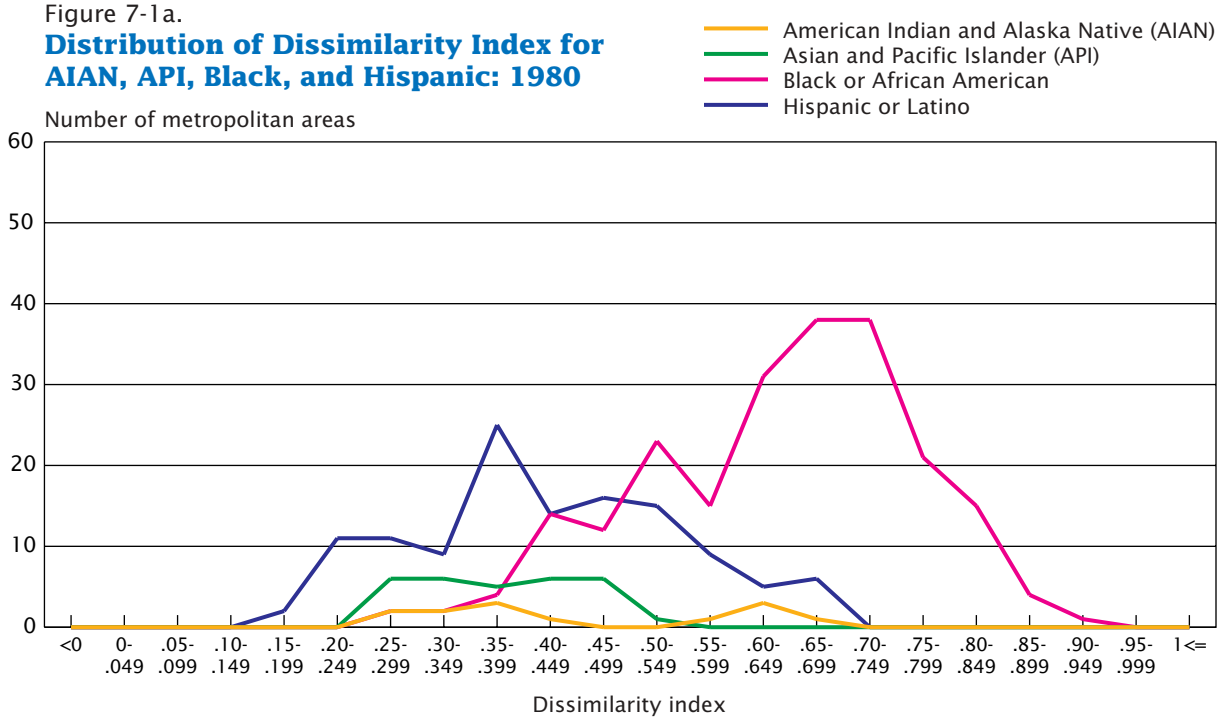
Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

metropolitan areas for 1980, 1990, and 2000 in Figures 7-1(a-e), 7-2(a-e), and 7-3(a-e), respectively. These generally confirm the findings described above. The dissimilarity index shows the same ordering from most to least segregated: Blacks, Hispanics, Asians and Pacific Islanders, American Indians and Alaska Natives. This conclusion also holds, though not as clearly because of their relatively narrower distributions, for the isolation index and the spatial proximity index.

Table 7-2 displays the percentage changes in the weighted averages for each index over each decade.

No index shows a uniform pattern for all groups. Of the five dimensions examined, declines in segregation were most evident in centralization (absolute centralization), where all groups experienced declines over the 1980 to 2000 period when all metropolitan areas were considered (declines were not registered for American Indians and Alaska Natives in their 13 selected metropolitan areas). Three of the four groups experienced declines in concentration (delta) when all metropolitan areas are considered — Asians and Pacific Islanders, who experienced no change, are the exception. Trends for the evenness (dissimilarity) and clustering (spatial proximity) dimensions were split, with two racial/ethnic groups experiencing increases and two experiencing declines. Finally, exposure (isolation) was the one dimension where increases predominated, with only African Americans experiencing declines. Because the isolation index is sensitive to the overall size of the minority group, it is unsurprising that this index showed the greatest increases as the population of all of the minority groups grew substantially over the 1980-2000 period.

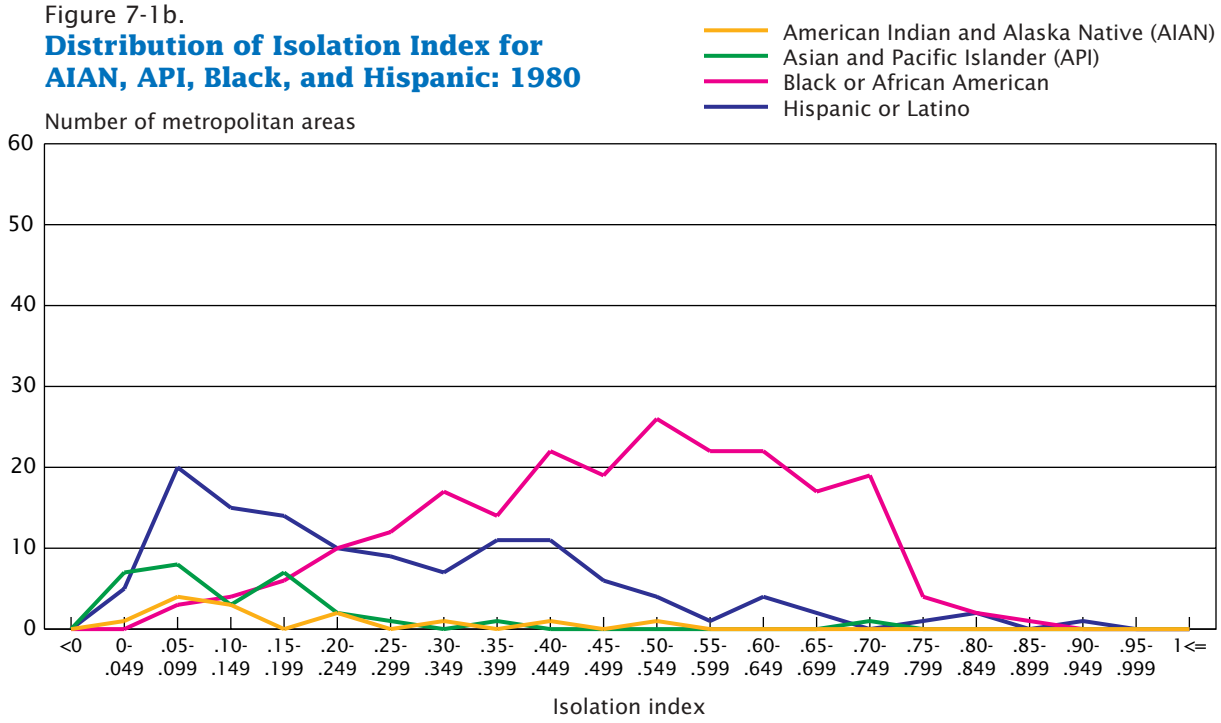
Figure 7-1a.
Distribution of Dissimilarity Index for AIAN, API, Black, and Hispanic: 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-1b.

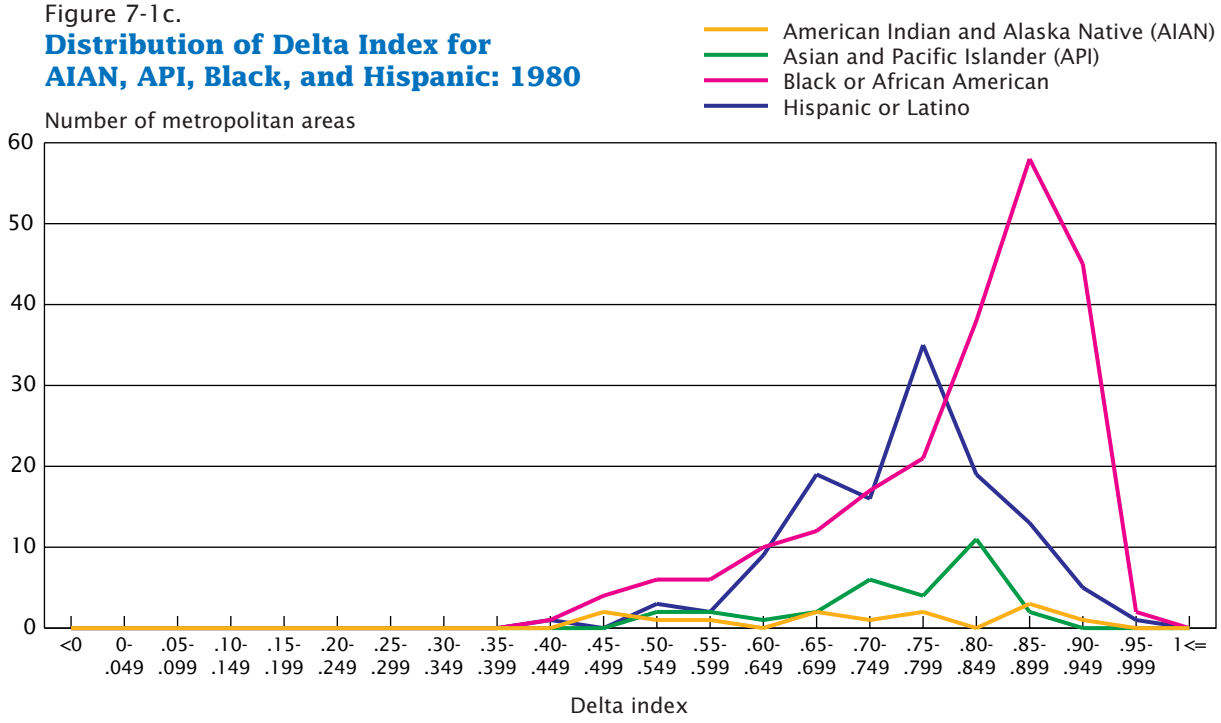
Distribution of Isolation Index for AIAN, API, Black, and Hispanic: 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-1c.

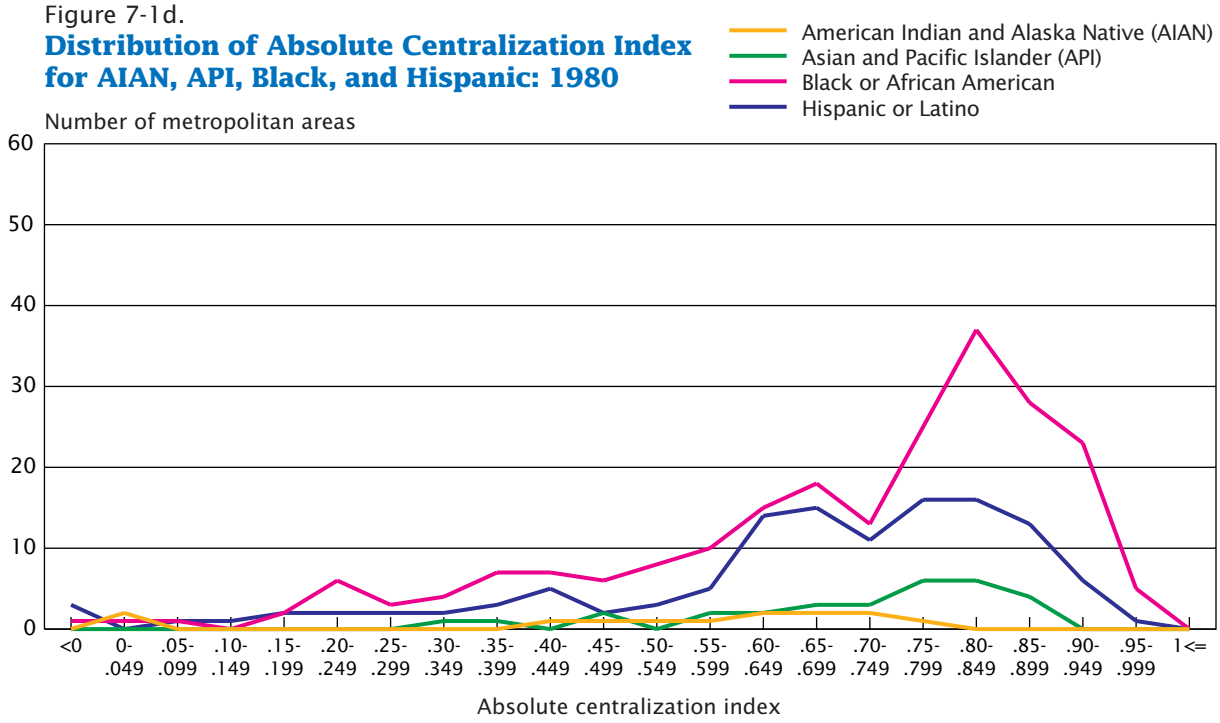
Distribution of Delta Index for AIAN, API, Black, and Hispanic: 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-1d.

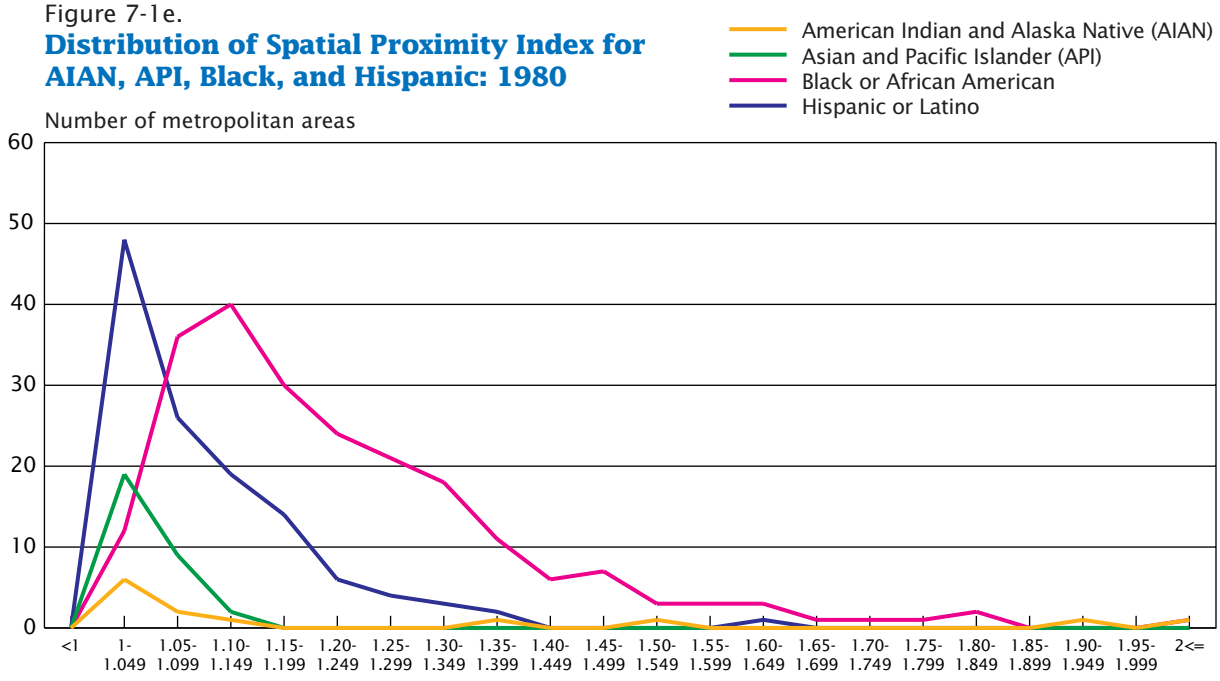
Distribution of Absolute Centralization Index for AIAN, API, Black, and Hispanic: 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-1e.

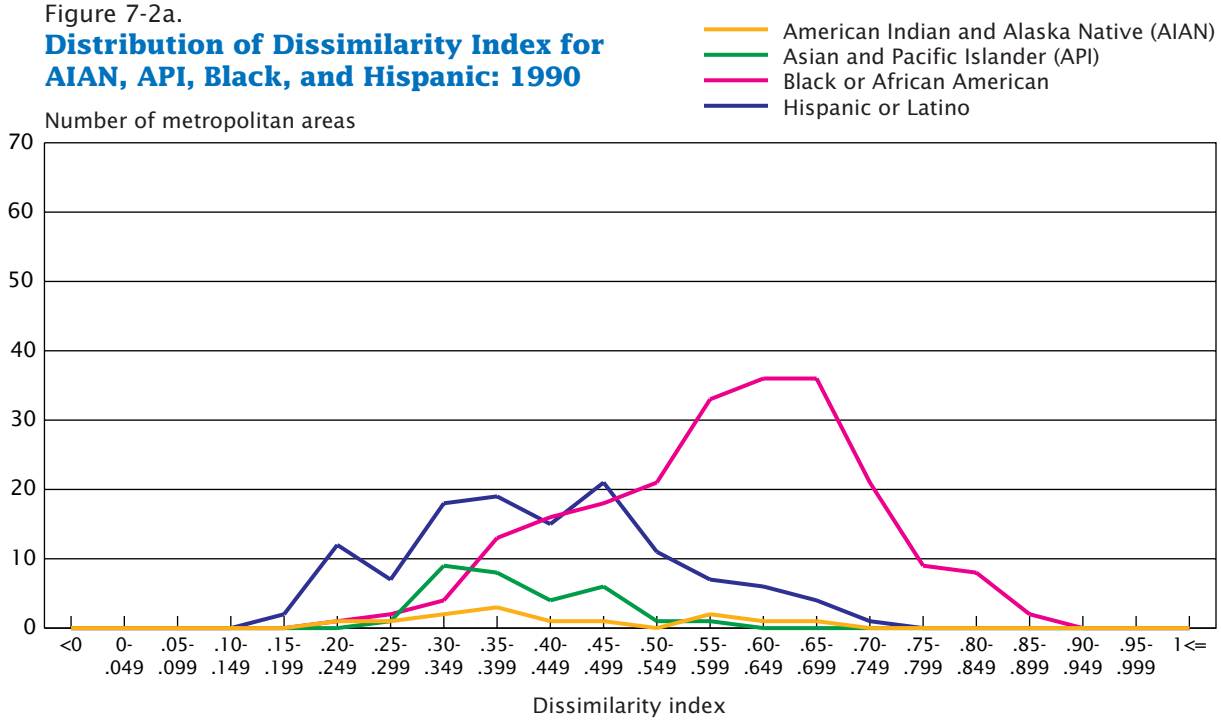
Distribution of Spatial Proximity Index for AIAN, API, Black, and Hispanic: 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-2a.

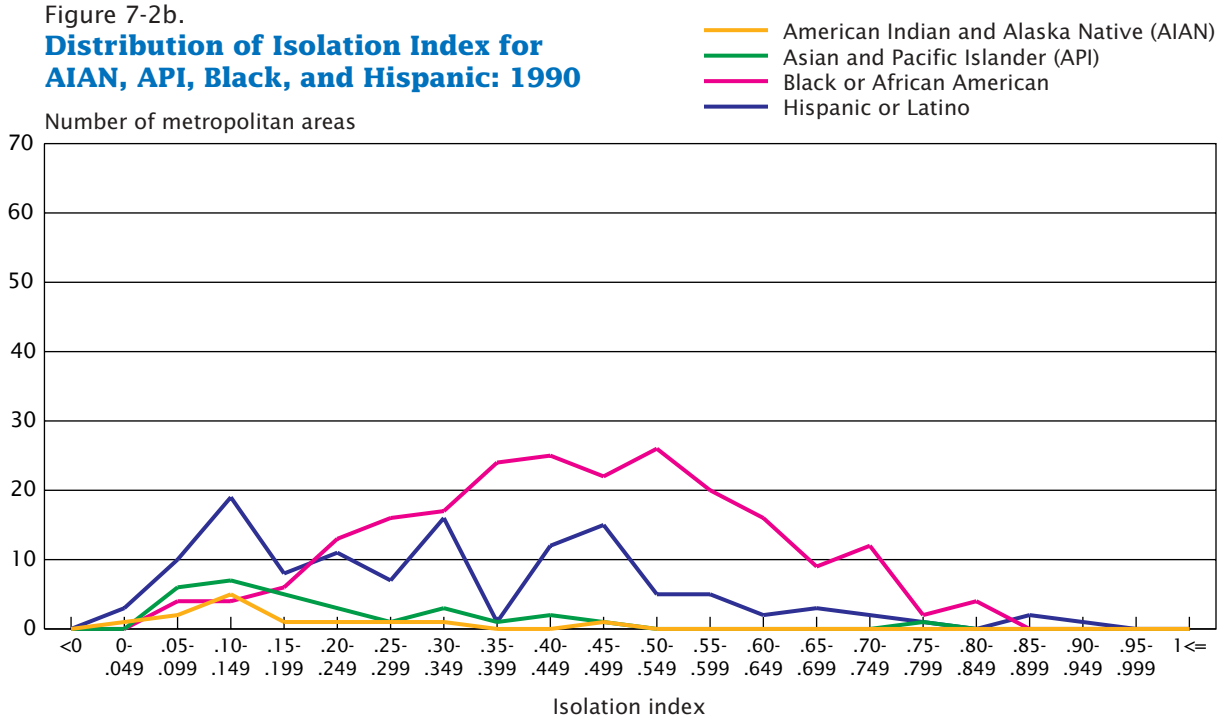
Distribution of Dissimilarity Index for AIAN, API, Black, and Hispanic: 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-2b.

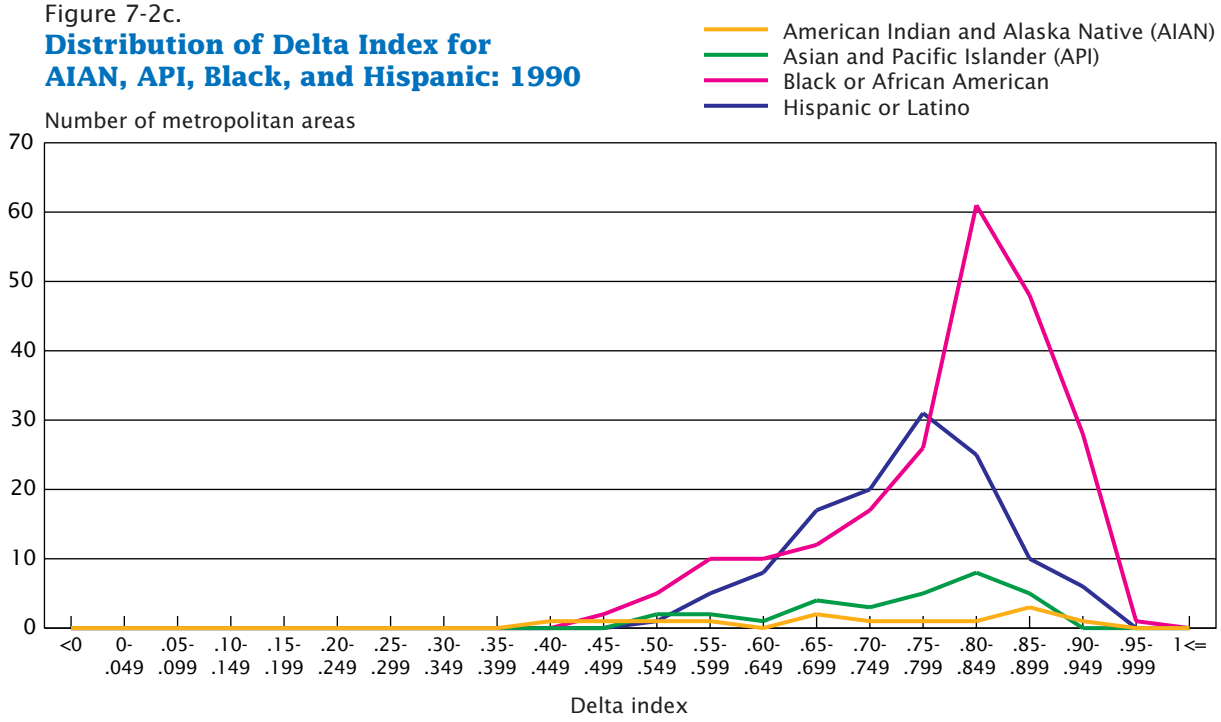
Distribution of Isolation Index for AIAN, API, Black, and Hispanic: 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-2c.

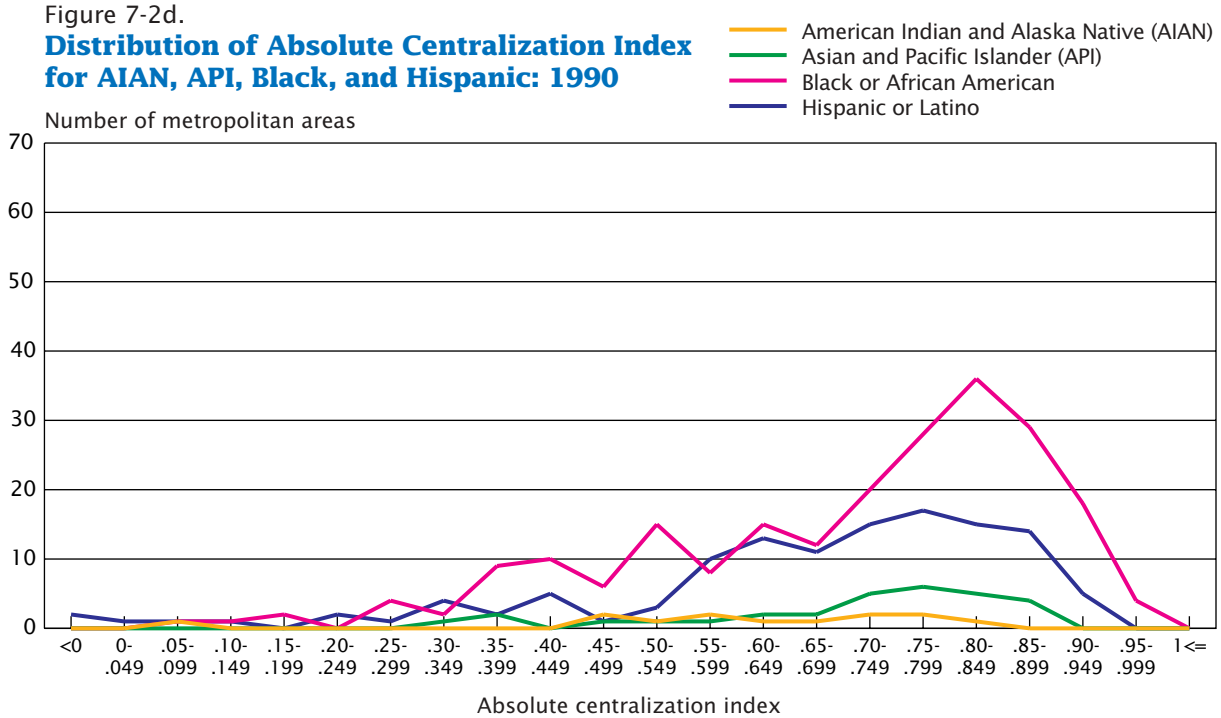
Distribution of Delta Index for AIAN, API, Black, and Hispanic: 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-2d.

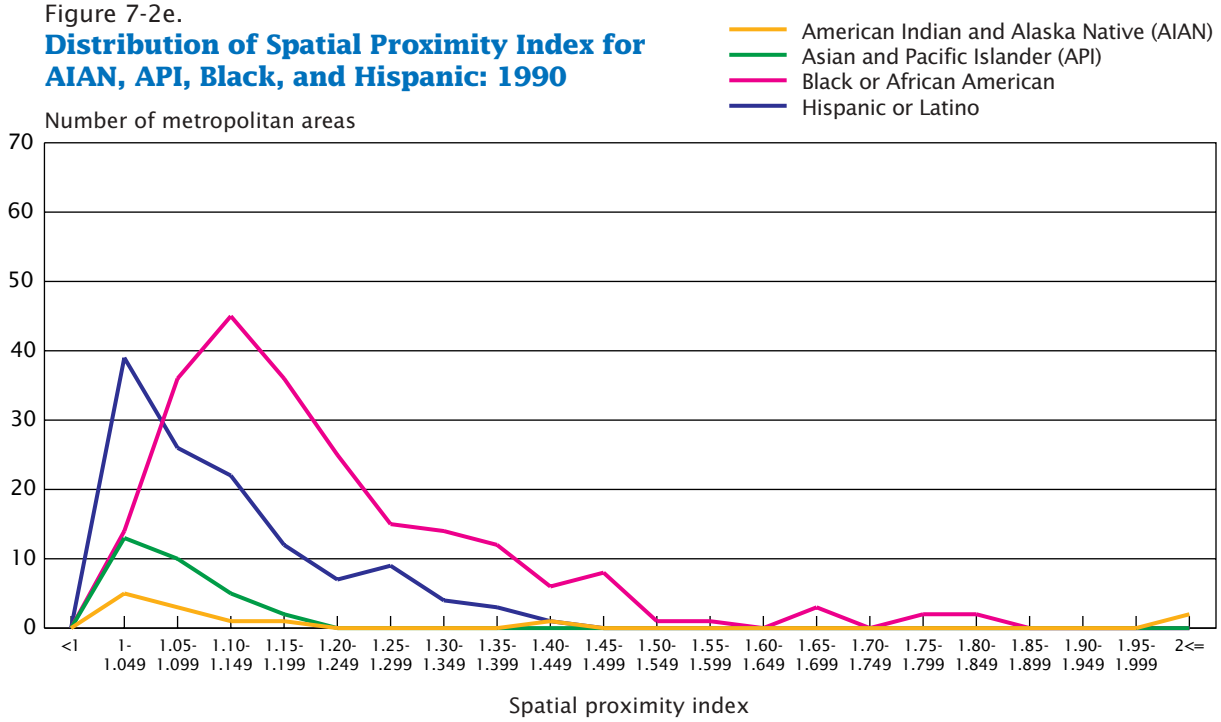
Distribution of Absolute Centralization Index for AIAN, API, Black, and Hispanic: 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-2e.

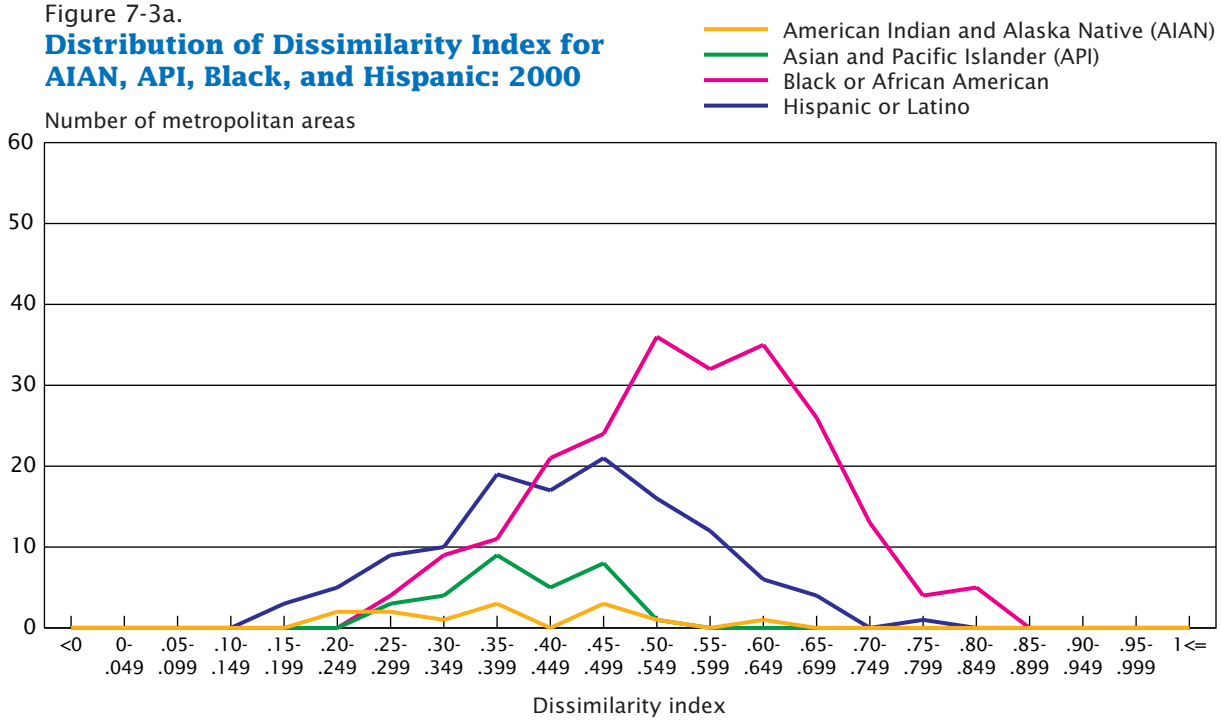
Distribution of Spatial Proximity Index for AIAN, API, Black, and Hispanic: 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-3a.

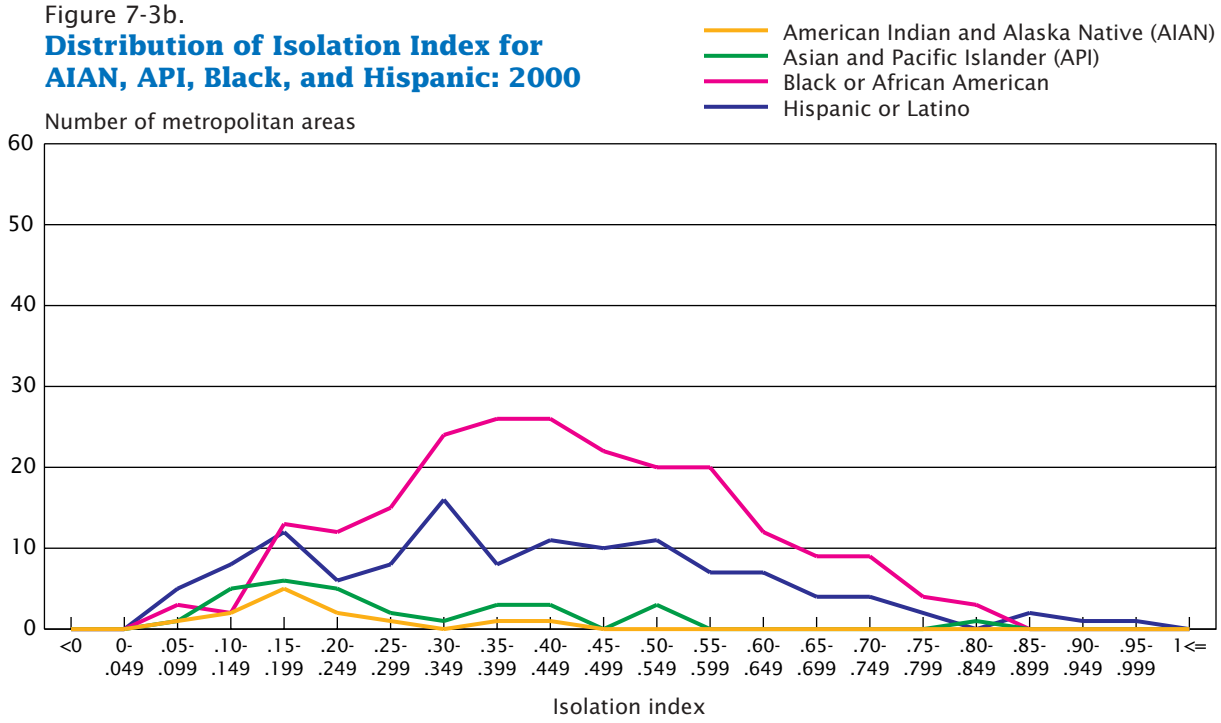
Distribution of Dissimilarity Index for AIAN, API, Black, and Hispanic: 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-3b.

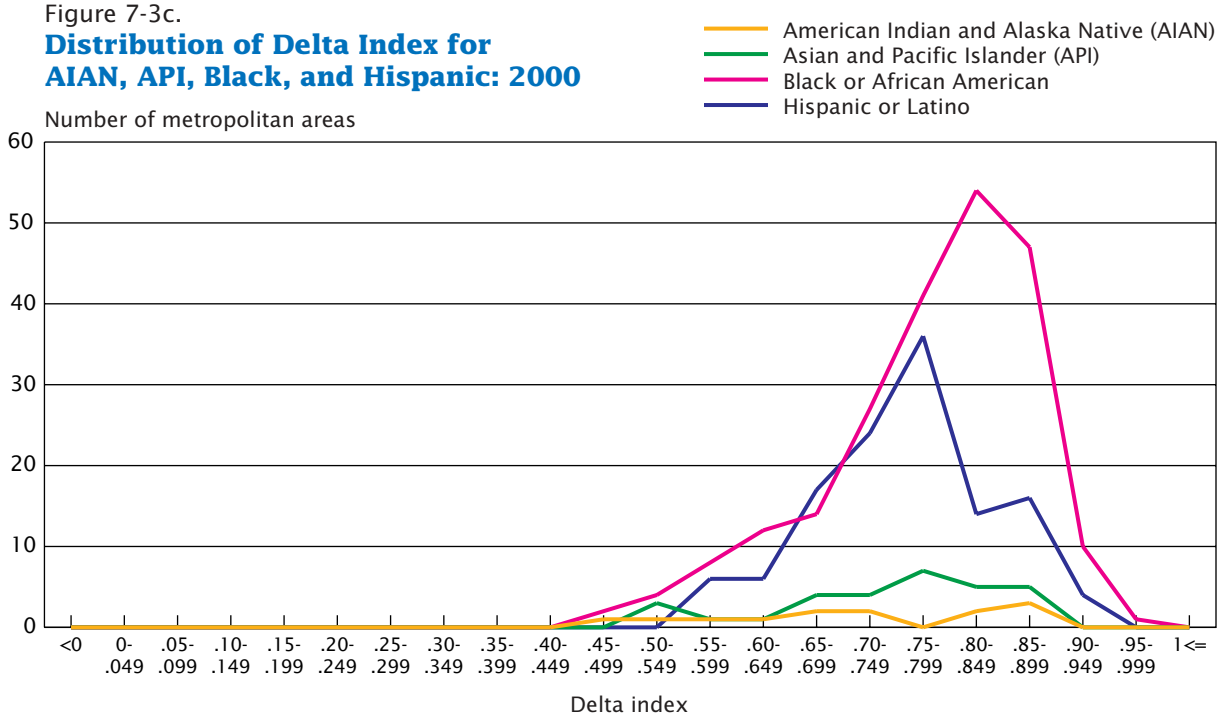
Distribution of Isolation Index for AIAN, API, Black, and Hispanic: 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-3c.

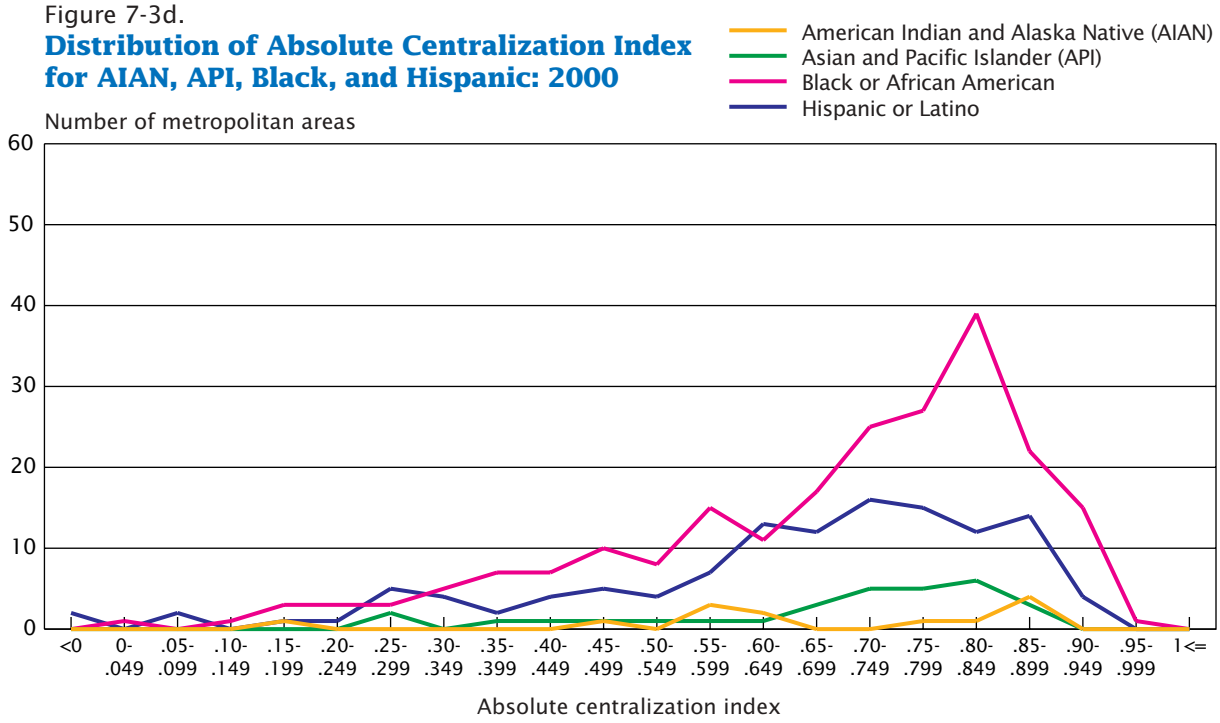
Distribution of Delta Index for AIAN, API, Black, and Hispanic: 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-3d.

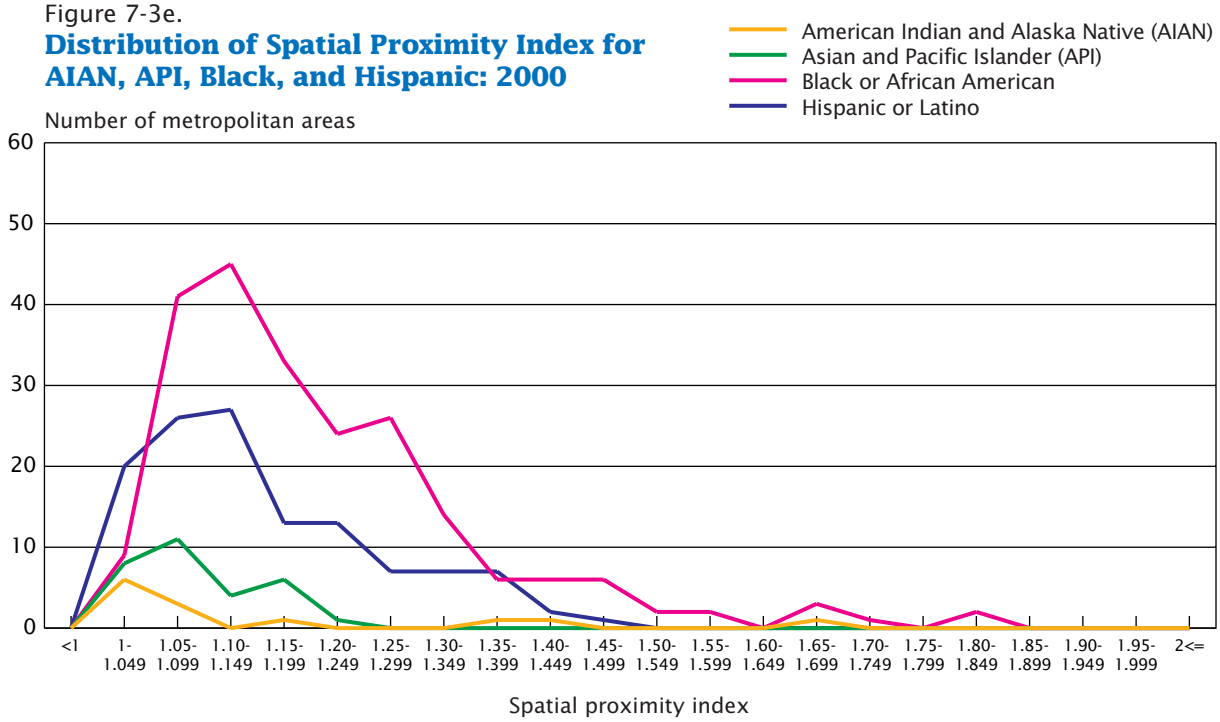
Distribution of Absolute Centralization Index for AIAN, API, Black, and Hispanic: 2000



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-3e.

Distribution of Spatial Proximity Index for AIAN, API, Black, and Hispanic: 2000



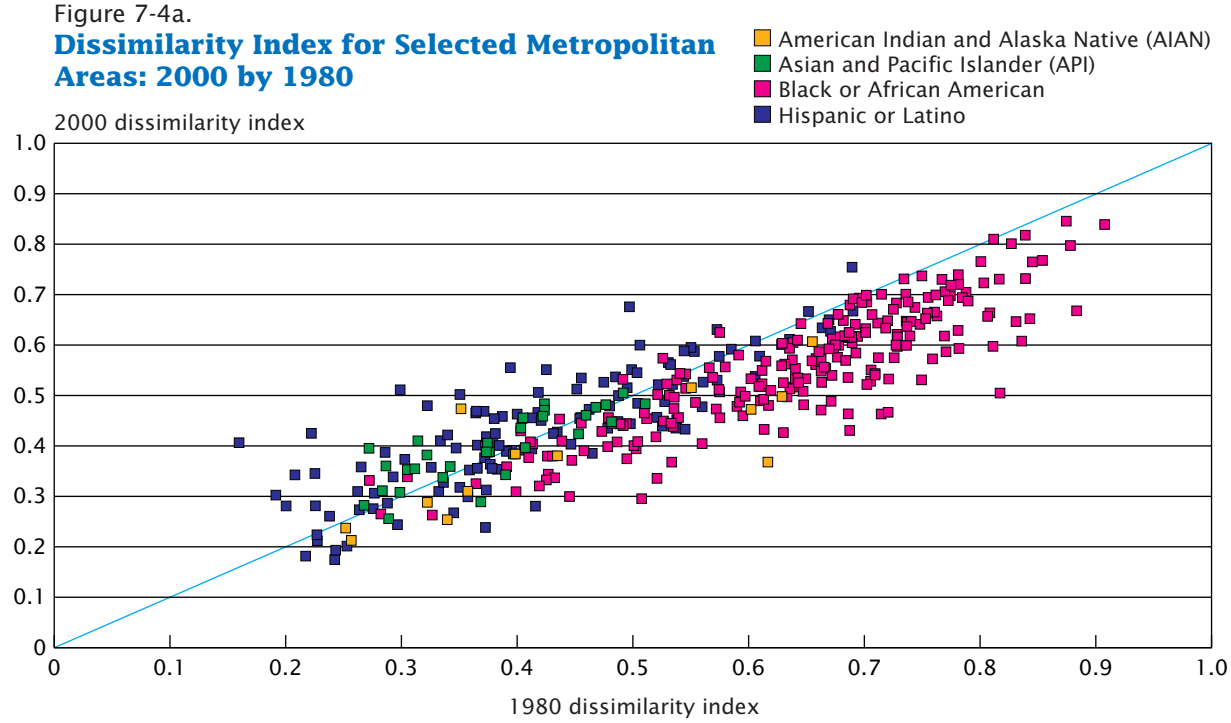
Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-4(a-e) shows the change in the indexes between 1980 and 2000 for all "selected" metropolitan areas graphically (use of all metropolitan areas for such a figure would not give the reader much information because the extent of the overlap obscures too many individual points). Not only do the figures confirm the findings from Table 7-1 (Blacks tend to be more highly segregated than other groups), they also show groups that experienced changes in the indexes from 1980 to 2000 (as shown in Table 7-2).

It is again clear that Blacks or African Americans had the biggest declines in dissimilarity (Figure 7-4a) and delta (Figure 7-4c) and almost all the declines in isolation (Figure 7-4b), since those points lie below the 45-degree line. The other groups are clustered around the 45-degree line for dissimilarity and delta, indicating little change over the 20-year period, with perhaps a preponderance of increases for Hispanics for dissimilarity. American Indians and Alaska Natives experienced increases in isolation for low levels of that index and decreases for higher levels; the other two groups — Asians and Pacific Islanders, as well as Hispanics — experienced increases in segregation using the isolation index (and Hispanics had the four highest isolation scores for 2000).

The absolute centralization index (Figure 7-4d) does not show much change from 1980 to 2000, with most of the points scattered fairly closely around the 45-degree line. Spatial proximity (Figure 7-4e) also clusters around the 45-degree line, indicating little change. Blacks experienced a decrease in this index between 1980 and 2000, while Hispanics experienced an increase in this index.

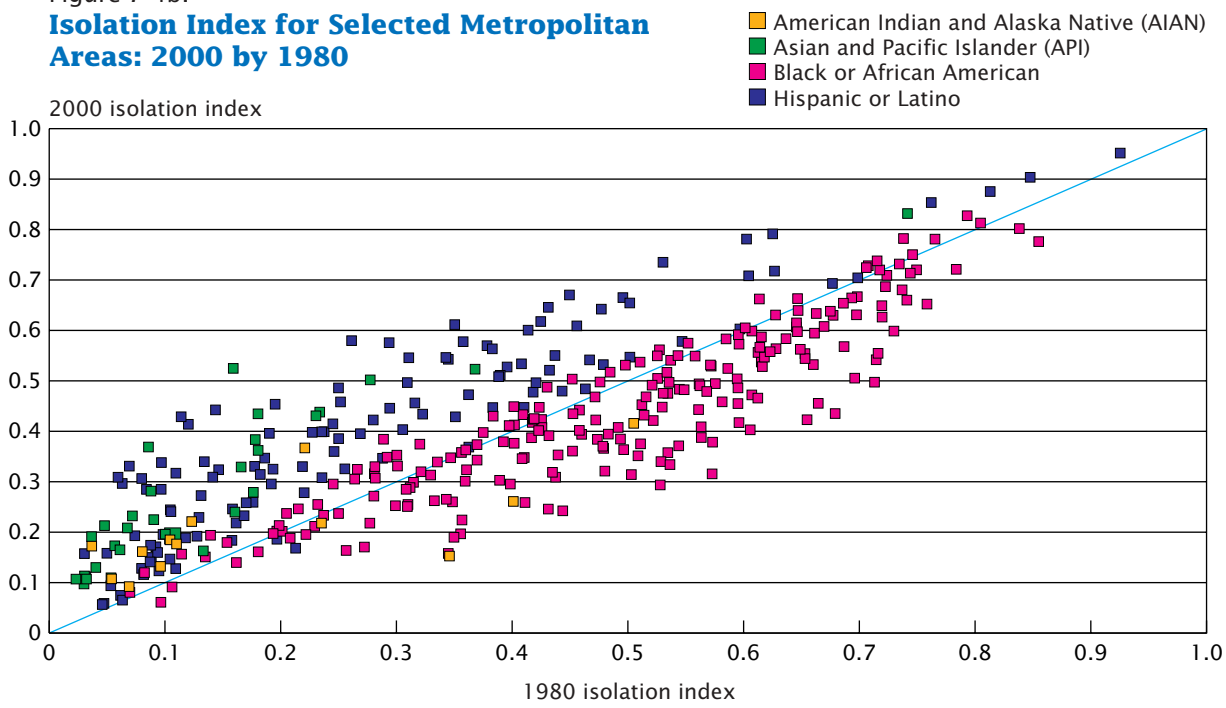
Figure 7-4a.
Dissimilarity Index for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-4b.

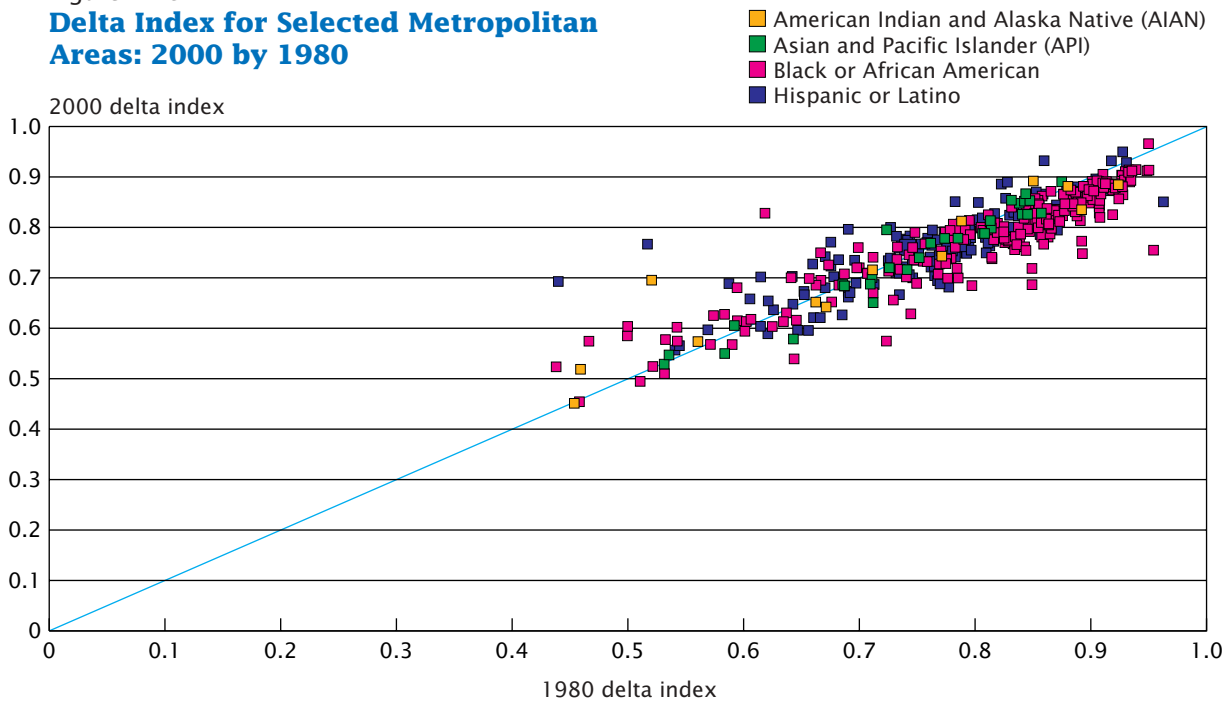
Isolation Index for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-4c.

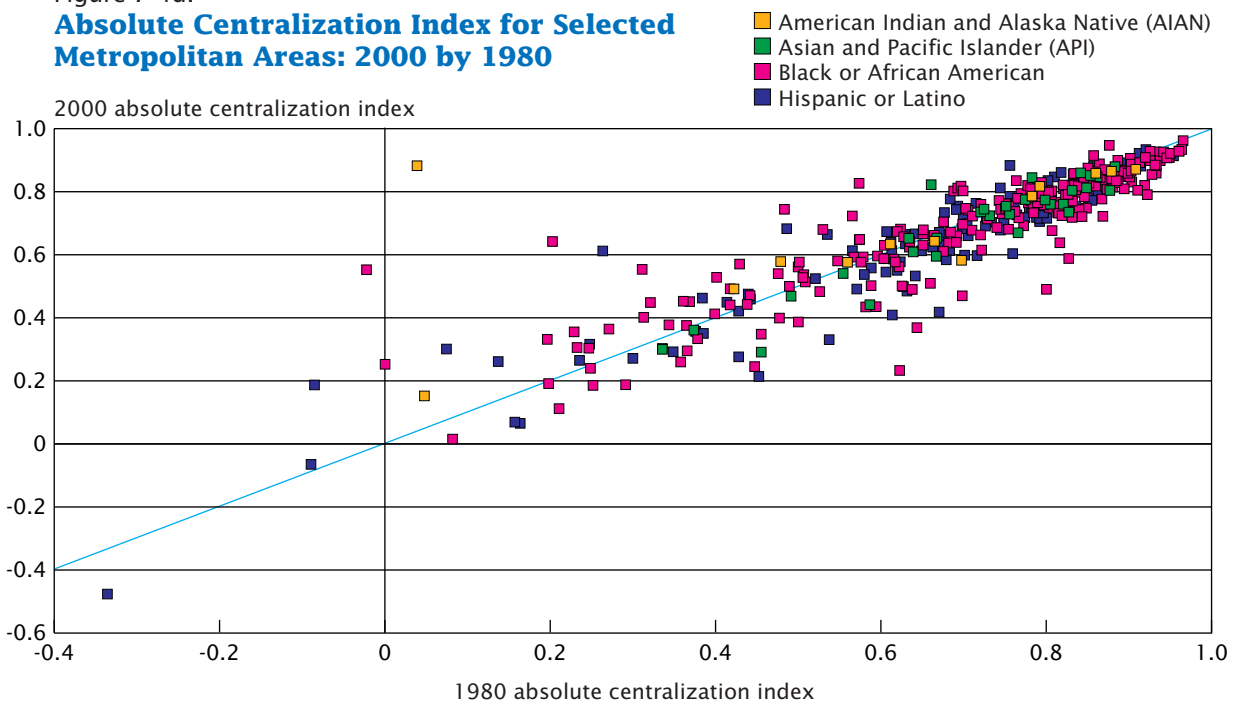
Delta Index for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-4d.

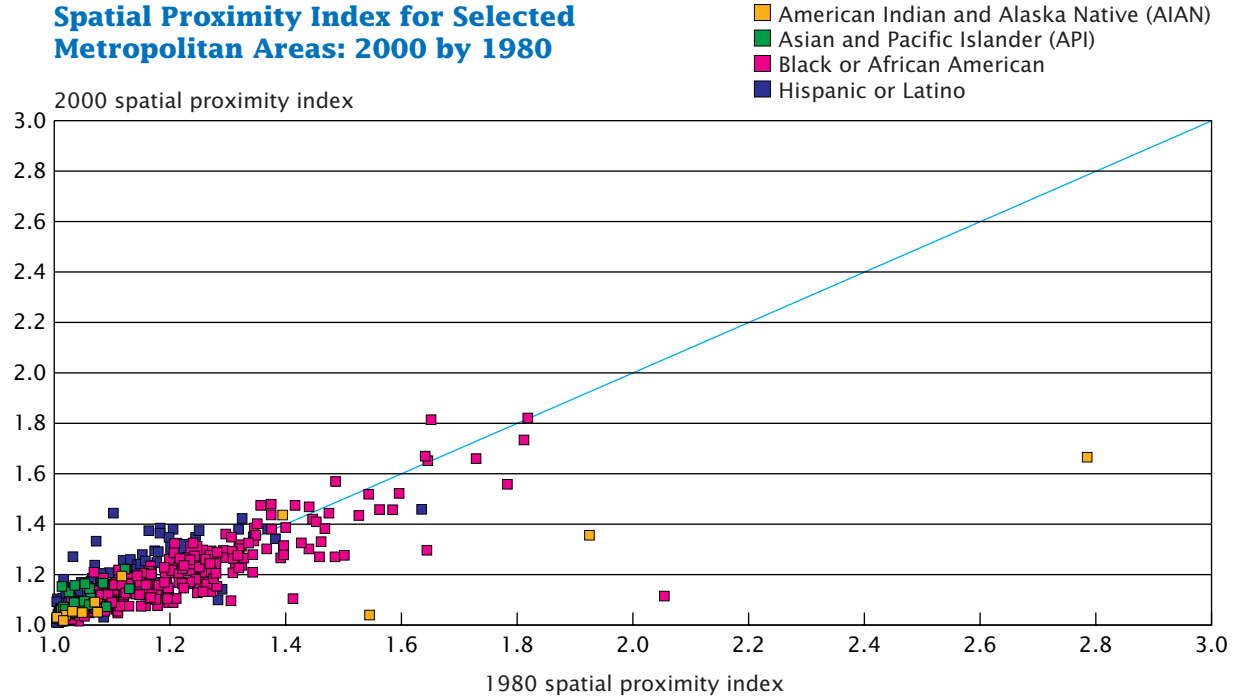
Absolute Centralization Index for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure 7-4e.

Spatial Proximity Index for Selected Metropolitan Areas: 2000 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more of the racial/ethnic group in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Table 7-3.
Residential Segregation Indexes for Los Angeles-Long Beach PMSA: 1980, 1990, and 2000

Race/ethnicity	Minority group population			Dissimilarity index			Isolation index			Delta index			Absolute centralization index			Spatial proximity index		
	1980	1990	2000	1980	1990	2000	1980	1990	2000	1980	1990	2000	1980	1990	2000	1980	1990	2000
American Indians and Alaska Natives	48,095	45,388	138,696	0.351	0.390	0.474	0.037	0.050	0.172	0.711	0.703	0.716	0.665	0.641	0.643	1.005	1.006	1.031
Asians and Pacific Islanders	434,713	954,065	1,282,466	0.468	0.463	0.477	0.277	0.405	0.502	0.752	0.740	0.740	0.766	0.713	0.670	1.123	1.190	1.222
Asians	(NA)	(NA)	1,245,019	(NA)	(NA)	0.479	(NA)	(NA)	0.499	(NA)	(NA)	0.743	(NA)	(NA)	0.671	(NA)	(NA)	1.225
Native Hawaiians and Other Pacific Islanders	(NA)	(NA)	49,514	(NA)	(NA)	0.506	(NA)	(NA)	0.112	(NA)	(NA)	0.739	(NA)	(NA)	0.626	(NA)	(NA)	1.021
Blacks or African Americans	943,544	991,581	999,747	0.808	0.728	0.664	0.758	0.693	0.652	0.865	0.817	0.787	0.843	0.789	0.721	1.783	1.652	1.558
Hispanics or Latinos	2,065,906	3,350,638	4,242,213	0.573	0.611	0.631	0.603	0.715	0.781	0.778	0.771	0.770	0.788	0.757	0.718	1.344	1.379	1.350
Total population	7,473,856	8,856,074	9,519,338	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)

NA Not available. X Not applicable.

Note: All groups include multi-race reporters. Higher values indicate more segregation; the reference group is White non-Hispanic.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1.

Only one metropolitan area, Los Angeles-Long Beach, had sufficient minority group population in 1980 to qualify as a selected metropolitan area in chapters 3 through 6, which analyzed the groups individually. For that reason, we thought it worthwhile to present those data in Table 7-3 and discuss their consistency with the general findings stated above. Blacks and Hispanics were the two most segregated groups in Los Angeles, with Blacks more segregated than Hispanics according to most measures in most years. Hispanics were, however, more isolated than Blacks in 1990 and 2000, and were tied in their absolute centralization index in 2000.

In all 3 years, Asians and Pacific Islanders were more segregated in Los Angeles than American Indians and Alaska Natives (tied for one measure, dissimilarity, in 2000) but less segregated than Hispanics or Blacks. In 2000, Asians were also more segregated in Los Angeles than American Indians and Alaska Natives (and tied for dissimilarity), but less segregated than Hispanics or Blacks. Pacific Islanders had a higher dissimilarity index in Los Angeles than either Asians or American Indians and Alaska Natives, were tied with Asians for delta (both higher than American Indians and Alaska Natives), but were the least segregated group using the other three segregation measures (and substantially less isolated, a function of their relatively small size). So, in general, the patterns in Los Angeles-Long Beach seem to mirror the patterns in the Nation as a whole.

Table 7-4 presents the percentage changes in residential segregation over the 1980-2000 period for Los Angeles-Long Beach. It should be noted that while there was a decline of 6 percent in the number of American Indians and Alaska Natives between 1980 and 1990, there was a tremendous growth between 1990 and 2000 (a tripling of the population). Much of this growth is attributable to multiple-race identification, as only 76,988 people identified as American Indian and Alaska Native only, whereas 138,696 identified either as American Indian and Alaska Native alone or in combination with at least one other race.

For the other three minority groups, there were the expected changes — decreases in dissimilarity and spatial proximity for Blacks and increases in isolation for Hispanics and for Asians and Pacific Islanders. Delta and absolute centralization, however, showed declines in segregation for all groups (with the exception of no change for American Indians and Alaska Natives).

Figure 7-5(a-d) presents a map of the population distribution of all four groups, contrasted with the settlement pattern of non-Hispanic Whites.

Table 7-4.
Percent Change in Residential Segregation Indexes for Los Angeles-Long Beach PMSA: 1980-2000

Race/ethnicity	Minority group population			Dissimilarity index			Isolation index			Delta index			Absolute centralization index			Spatial proximity index		
	1980-1990 percent change	1990-2000 percent change	1980-2000 percent change	1980-1990 percent change	1990-2000 percent change	1980-2000 percent change	1980-1990 percent change	1990-2000 percent change	1980-2000 percent change	1980-1990 percent change	1990-2000 percent change	1980-2000 percent change	1980-1990 percent change	1990-2000 percent change	1980-2000 percent change	1980-1990 percent change	1990-2000 percent change	1980-2000 percent change
American Indians and Alaska Natives.	-6.0	205.6	188.4	9.8	21.6	34.7	26.2	246.3	368.9	–1.3	1.9	0.6	–3.7	0.3	–3.3	0.1	2.5	2.6
Asians and Pacific Islanders	54.4	34.4	195.0	–1.2	3.1	1.9	31.4	24.1	81.0	–1.6	0.0	–1.6	–7.4	–6.1	–12.6	5.6	2.7	8.8
Blacks or African Americans	4.8	0.8	6.0	–11.0	–8.9	–17.9	–9.4	–5.9	–14.0	–5.9	–3.7	–9.0	–6.9	–8.6	–14.5	–8.0	–5.6	–12.6
Hispanics or Latinos.	38.3	26.6	105.3	6.2	3.3	10.2	15.7	9.2	29.6	–0.9	–0.2	–1.1	–4.1	–5.1	–8.9	2.5	–2.1	0.4
Total Population . .	15.6	7.5	27.4	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)

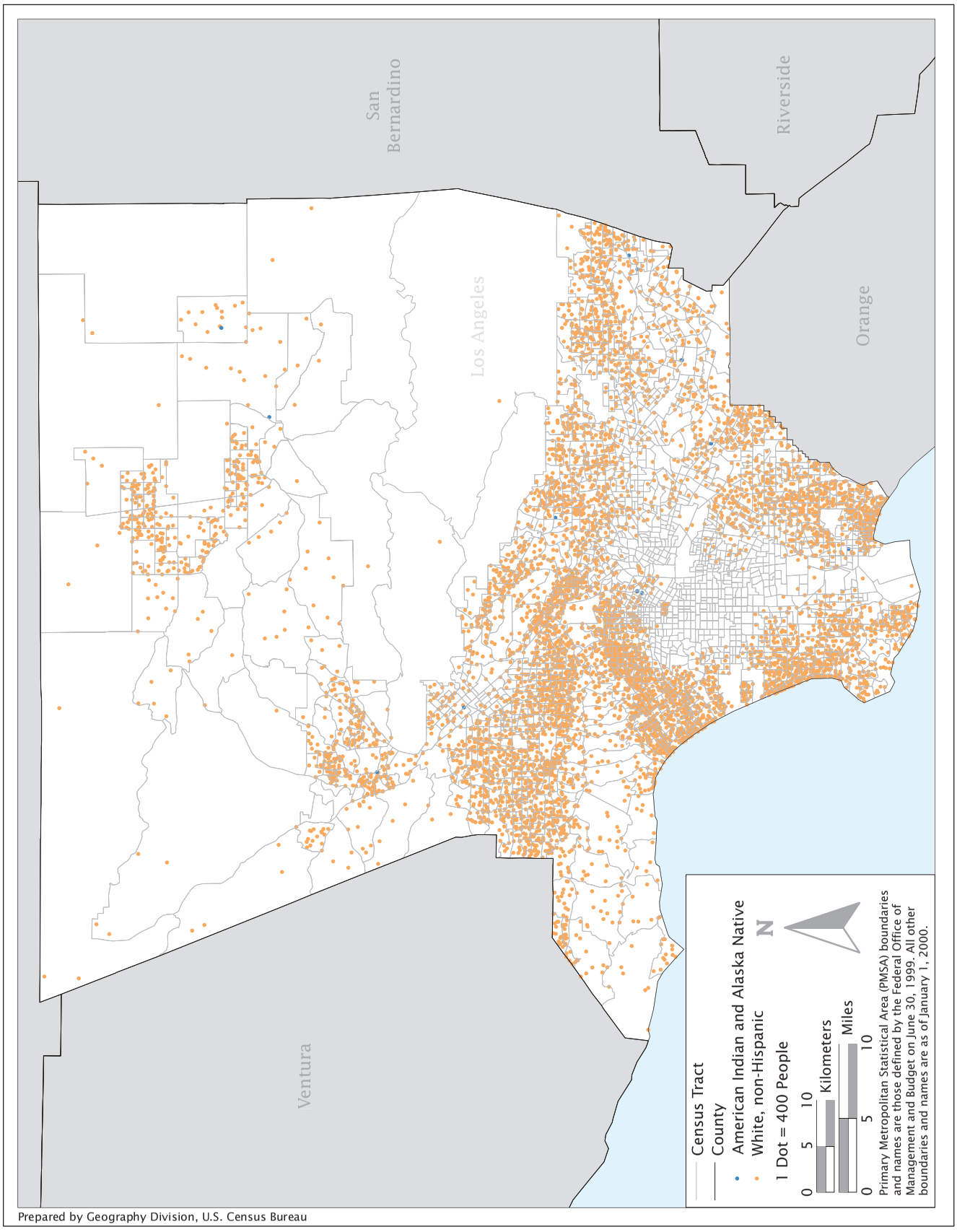
X Not applicable.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 percent change Summary File 1.

To recap, a comparison of segregation patterns of the different groups indicated that African Americans were the most segregated (vis-a-vis the reference group, non-Hispanic Whites). Hispanics or Latinos were generally the next most highly segregated, followed by Asians and Pacific Islanders, and then American Indians and Alaska Natives across a majority of the measures. However, African Americans experienced declines, albeit modest ones, in segregation across all dimensions, while other groups showed either mixed patterns or small increases over the 1980-2000 period.

Figure 7-5a.

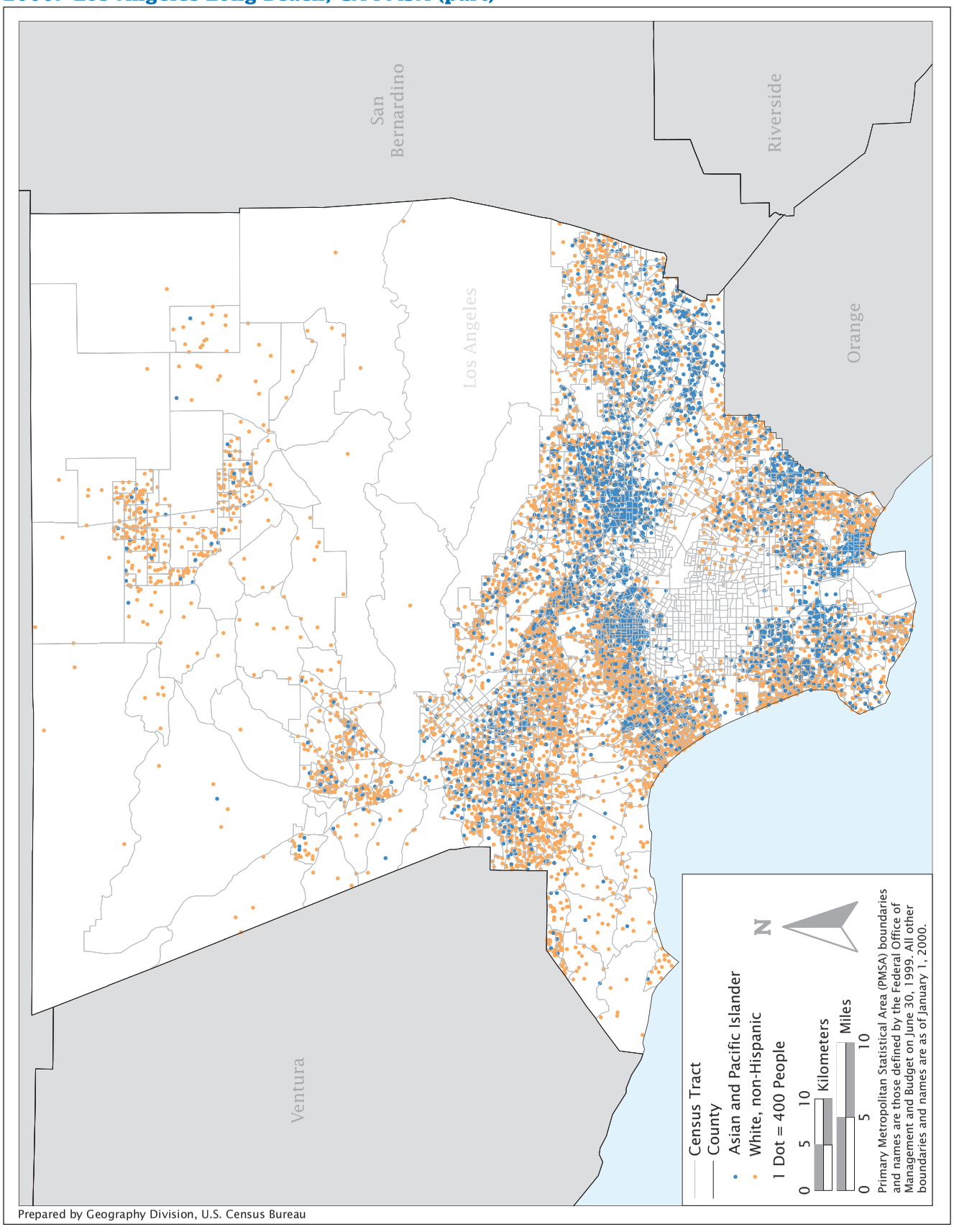
The Residential Segregation of American Indians and Alaska Natives and non-Hispanic Whites in 2000: Los Angeles-Long Beach, CA PMSA (part)



Prepared by Geography Division, U.S. Census Bureau

Figure 7-5b.

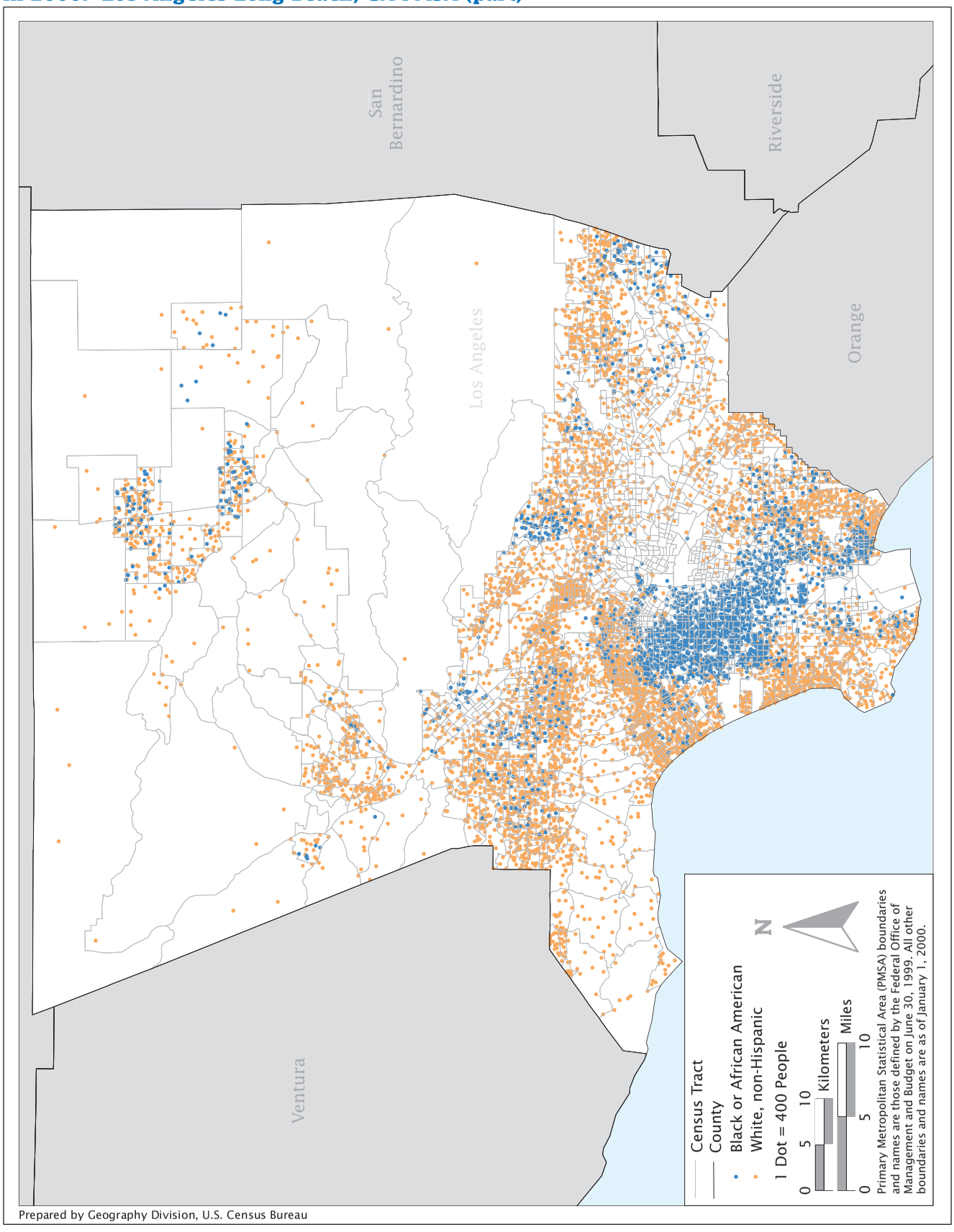
The Residential Segregation of Asians and Pacific Islanders and non-Hispanic Whites in 2000: Los Angeles-Long Beach, CA PMSA (part)



Prepared by Geography Division, U.S. Census Bureau

Figure 7-5c.

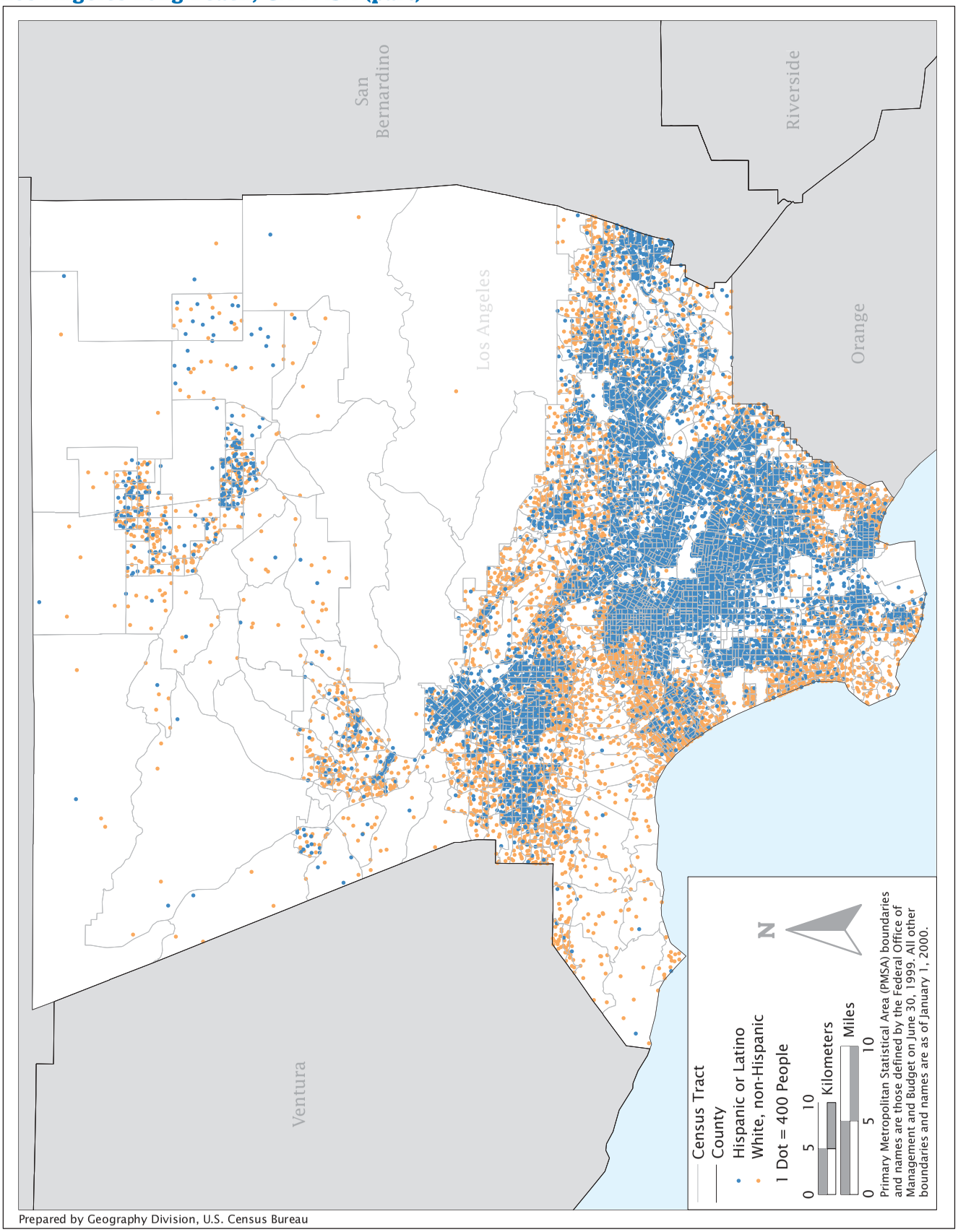
The Residential Segregation of Blacks or African Americans and non-Hispanic Whites in 2000: Los Angeles-Long Beach, CA PMSA (part)



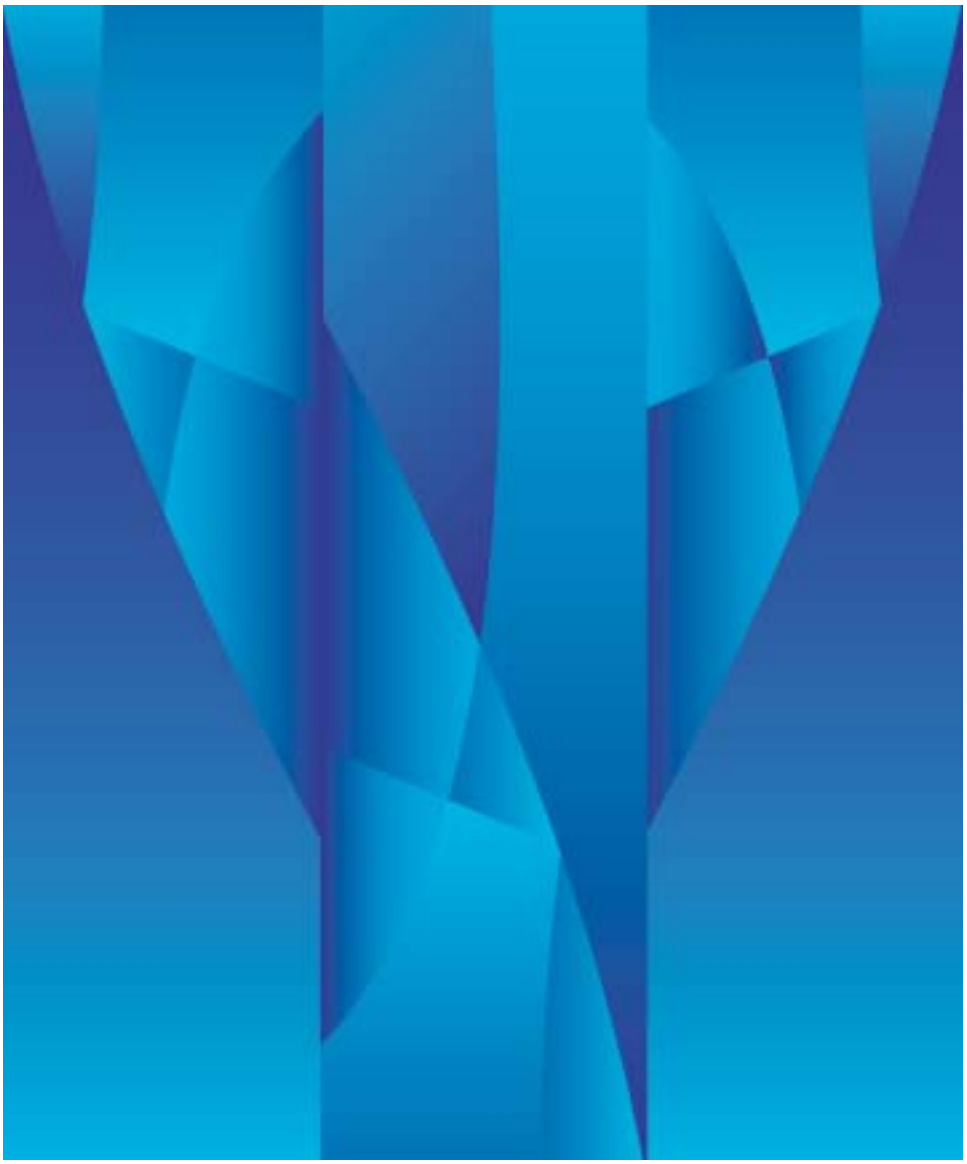
Prepared by Geography Division, U.S. Census Bureau

Figure 7-5d.

The Residential Segregation of Hispanics or Latinos and non-Hispanic Whites in 2000: Los Angeles-Long Beach, CA PMSA (part)



Prepared by Geography Division, U.S. Census Bureau



APPENDIXES

APPENDIX A

MEASURING SEGREGATION USING ALTERNATIVE METHODS OF IDENTIFYING RACIAL/ETHNIC GROUP MEMBERS: "ALONE" VS. "ALONE OR IN COMBINATION"

Census 2000 was the first to allow respondents to identify themselves using multiple race categories. This change raises concerns of how to classify multi-race individuals when making demographic comparisons over time. One possibility is to include in the minority group of interest anyone designating themselves as a member of that racial group, e.g., people who self-identified as Black or African American alone or in combination with another group. An alternative is to include in a group's count only individuals identifying with that group alone. We have decided to use the first method ("alone or in combination") in this report for reasons described in Chapter 2. This means that the minority group definitions used in this report are not mutually exclusive. The purpose of this appendix is to show how segregation statistics differ across the two racial classification schemes. The reference group — non-Hispanic Whites — is always defined as those who report being White alone, and who are not of Hispanic origin. The count of Hispanics or Latinos is not affected by this issue since Hispanic ethnicity is determined by a separate census question, and Hispanics or Latinos can be of any race.

Table A-1 indicates that the differences across the methods are generally small across the 19 segregation indexes examined. The indexes in bold are the ones used throughout this report. As might be expected, segregation tends to be a little higher when using the "alone" classification scheme than the "alone or in combination" one (which includes multiracial individuals). Differences tend to be particularly small for African Americans, and modest for Asians and Pacific Islanders; conclusions about the patterns of segregation for these groups would change slightly if the "alone" methodology were used instead of the "alone or in combination" one. The differences are moderately larger for American Indians and Alaska Natives. Whereas declines in segregation from 1980 to 2000 are registered across four of the five measures used in this report for this group when the "alone or in combination" scheme is used and all metropolitan areas are considered, this number falls to three when the "alone" category is used.

In short, racial classification methods have only a modest effect on our conclusions about trends in segregation over the 1980 to 2000 period. Alternative methods have a somewhat larger effect on American Indian and Alaska Native segregation scores than on the African American or Asian and Pacific Islander ones.

Table A-1.

Comparison of Segregation Indexes for Racial Groups Defined Alone vs. Alone or in Combination: 1980 and 2000

Index	African American or Black			American Indian and Alaska Native			Asian and Pacific Islander (API)				
		2000			2000			2000			
	1980	Alone	Alone or in combo	1980	Alone	Alone or in combo	1980	API Alone	Asian Alone	NHOPI Alone	API Alone or in combo
EVENNESS MEASURES											
Dissimilarity	**0.727**	**0.651**	**0.640**	**0.373**	**0.393**	**0.333**	**0.405**	**0.434**	**0.439**	**0.493**	**0.411**
Gini	0.864	0.798	0.787	0.502	0.522	0.450	0.545	0.578	0.584	0.650	0.550
Entropy	0.546	0.447	0.434	0.125	0.144	0.111	0.151	0.180	0.183	0.177	0.165
Atkinson with b=.1	0.232	0.156	0.148	0.073	0.064	0.041	0.062	0.065	0.067	0.162	0.058
Atkinson with b=.5	0.701	0.587	0.570	0.252	0.266	0.198	0.261	0.286	0.291	0.392	0.258
Atkinson with b=.9	0.883	0.801	0.789	0.402	0.435	0.346	0.423	0.454	0.461	0.559	0.418
EXPOSURE MEASURES											
Interaction	0.345	0.403	0.409	0.918	0.887	0.897	0.767	0.700	0.705	0.848	0.694
Isolation	**0.655**	**0.597**	**0.591**	**0.082**	**0.113**	**0.103**	**0.233**	**0.300**	**0.295**	**0.152**	**0.306**
Correlation ratio	0.571	0.478	0.468	0.068	0.089	0.071	0.120	0.168	0.170	0.099	0.158
CONCENTRATION MEASURES											
Delta	**0.834**	**0.796**	**0.793**	**0.695**	**0.692**	**0.676**	**0.741**	**0.753**	**0.756**	**0.747**	**0.743**
Absolute concentration	0.888	0.883	0.881	0.863	0.871	0.882	0.869	0.892	0.899	0.894	0.876
Relative concentration	0.627	0.662	0.658	–1.423	–0.622	–0.261	0.483	0.614	0.622	0.346	0.588
CENTRALIZATION MEASURES											
Absolute centralization	**0.753**	**0.724**	**0.722**	**0.622**	**0.610**	**0.611**	**0.701**	**0.691**	**0.694**	**0.593**	**0.683**
Relative centralization	0.314	0.294	0.290	0.003	0.051	0.067	0.194	0.214	0.218	0.097	0.202
CLUSTERING MEASURES											
Absolute clustering	0.416	0.365	0.360	0.086	0.095	0.061	0.087	0.124	0.125	0.053	0.116
Spatial proximity	**1.435**	**1.382**	**1.374**	**1.197**	**1.131**	**1.077**	**1.057**	**1.103**	**1.104**	**1.053**	**1.096**
Relative clustering	2.139	1.259	1.192	6.605	2.731	1.206	0.766	0.555	0.584	0.712	0.454
Distance decay interaction	0.493	0.496	0.499	0.929	0.910	0.923	0.808	0.746	0.752	0.886	0.736
Distance decay isolation	0.507	0.504	0.501	0.069	0.090	0.077	0.189	0.254	0.248	0.114	0.264

Notes: Segregation scores represent weighted averages across all metropolitan areas. Indexes in bold are those highlighted in this report. NHOPI = Native Hawaiian and Other Pacific Islander.

Source: U.S. Census Bureau, Census 1980 and 2000 Summary File 1.

APPENDIX B

MEASURES OF RESIDENTIAL SEGREGATION

Massey and Denton (1988) used an extensive literature search and cluster analysis to identify 20 different indexes of segregation and classify them into five key dimensions of segregation. Basically, **evenness** involves the differential distribution of the subject population, **exposure** measures potential contact, **concentration** refers to the relative amount of physical space occupied, **centralization** indicates the degree to which a group is located near the center of an urban area, and **clustering** measures the degree to which minority group members live disproportionately in contiguous areas. Below we describe the 19 measures we have calculated, though we focus on only one per dimension, as described in Chapter 2. In all of the calculations, non- Hispanic Whites are considered the "majority" (reference) population. The formulas for the 19 indexes are listed at the end of this appendix.

I. MEASURES OF EVENNESS

Evenness measures of segregation compare the spatial distributions of different groups among units in a metropolitan area. Segregation is smallest when majority and minority populations are evenly distributed. The most widely used measure of evenness is the **dissimilarity** index. Conceptually, dissimilarity measures the percentage of a group's population that would have to change residence for each neighborhood to have the same percentage of that group as the metropolitan area overall. The index ranges from 0.0 (complete integration) to 1.0 (complete segregation).

A second measure of evenness is the **Gini** coefficient. Like the index of dissimilarity, it can be derived from the Lorenz curve, and varies between 0.0 and 1.0, with 1.0 indicating maximum segregation. The Gini coefficient is "the mean absolute difference between minority proportions weighted across all pairs of areal units, expressed as a proportion of the maximum weighted mean difference" (Massey and Denton, p. 285). A third evenness measure is **entropy**, proposed originally by Theil (Theil 1972; Theil and Finizza, 1971). The entropy index (also called the information index) measures the (weighted) average deviation of each areal unit from the metropolitan area's "entropy" or racial and ethnic diversity, which is greatest when each group is equally represented in the metropolitan area. The entropy index, like the other two evenness measures, also varies between 0.0 (when all areas have the same composition as the entire metropolitan area) and 1.0 (when all areas contain one group only).

The only evenness measures to satisfy the four criteria established by James and Taeuber (1985) for an ideal segregation index[1] are the Gini index and the **Atkinson** index, often used to evaluate inequality.[2] The Atkinson index

[1] The four criteria are: 1) the "transfer principle", which states that a measure should be sensitive to the redistribution or "transfer" of minorities among areal units with minority proportions above or below the metropolitan area's minority proportion (and not just transfers from areas above to areas below that proportion); 2) "compositional invariance", which states that the relative size of minority population should not affect the index; 3) "size invariance", which states that the measure should not be affected if the number of people in each group is multiplied by a constant; and 4) "organizational equivalence", which holds that an index should be unaffected by aggregating units with the same minority composition.

[2] See Jones and Weinberg (2000) for an application to income inequality.

(Atkinson, 1970) allows the researcher to differentially weight areal units at different points along the Lorenz curve, allowing, for example, areal units where minorities are under- or over-represented to contribute more heavily to the overall index. For values of the shape parameter of 0.0 or more but less than 0.5, areal units where the proportion of minorities is smaller than the metropolitan area's average (i.e., where minorities are "underrepresented") contribute more to the segregation index; for large values of the shape parameter (more than 0.5 up to 1.0), the reverse is true — areas of "overrepresentation" contribute more. When the shape parameter is 0.5, such areas contribute equally. For values of the parameter between 0.0 and 1.0, the Atkinson index also varies in that range, with 1.0 indicating maximum segregation. Three shape parameters — 0.1, 0.5, and 0.9 — are used in our analysis, resulting in three separate Atkinson indexes.

II. MEASURES OF EXPOSURE

"Exposure measures the degree of potential contact, or possibility of interaction, between minority and majority group members" (Massey and Denton, p. 287). Exposure thus depends on the extent to which two groups share common residential areas, and hence, on the degree to which the average minority group member "experiences" segregation. As Massey and Denton point out, indexes of evenness and exposure are correlated but measure different things: exposure measures depend on the relative sizes of the two groups being compared, while evenness measures do not.

The two basic, and related, measures of exposure are **interaction** and **isolation**. The two indexes, respectively, reflect the probabilities that a minority person shares a unit area with a majority person or with another minority person. The interaction index measures the exposure of minority group members to members of the majority group as the minority-weighted average of the majority proportion of the population in each areal unit. The isolation index measures "the extent to which minority members are exposed only to one another," (Massey and Denton, p. 288) and is computed as the minority-weighted average of the minority proportion in each area.

When there are only two groups, the isolation and interaction indexes sum to 1.0, so lower values of interaction and higher values of isolation each indicate higher segregation. However, when there are more than two groups, the interaction and isolation indexes will not sum to 1.0 (one must add the interaction indexes for all other minority groups to the interaction and isolation indexes for the original minority group to obtain unity).[3] Furthermore, the interaction indexes representing minority exposure to majority members and majority exposure to minority members will be equal only if the two groups constitute the same proportion of the population. An adjustment of the isolation index to control for this asymmetry yields a third exposure index, the **correlation** ratio, also known as eta-squared.

[3] The interaction and isolation indices reported here are calculated with the non-Hispanic White population as the referent group rather than the total population (excluding the minority group of interest). Our interaction and isolation indices therefore do sum to unity for each group.

III. MEASURES OF CONCENTRATION

"Concentration refers to the relative amount of physical space occupied by a minority group in the metropolitan area" (Massey and Denton, p. 289). Minority groups of the same relative size occupying less space would be considered more concentrated and consequently more segregated.

One measure of concentration, originally proposed by Hoover (1941), is **delta**, which "computes the proportion of [minority] members residing in areal units with above average density of [minority] members" (Massey and Denton, p. 290). The index gives the proportion of a group's population that would have to move across areal units to achieve a uniform density.

Massey and Denton propose two additional measures. The first, **absolute concentration**, computes the total area inhabited by a group and compares this with the minimum and maximum areas (the areal sum, respectively, of the fewest number of the geographically smallest and the greatest number of the geographically largest areal units) that could accommodate a group of that size (at observed densities). The index varies from 0.0 to 1.0, where a score of 1.0 means that a group has achieved the maximum spatial concentration possible (all minority members live in the smallest areal units). The second, **relative concentration**, is measured similarly, but takes account of the distribution of the majority group as well. This measure varies from -1.0 to 1.0.[4] A score of 0.0 means that the

[4] In fact we obtained values below -1.0, and Massey and Denton (personal communication) indicate that they did as well in calculating indices for the 60 largest metropolitan areas.

minority and majority groups are equally concentrated. An index of -1.0 means that the concentration of the majority exceeds that of the minority to the maximum extent, and an index of 1.0 the reverse.

IV. MEASURES OF CENTRALIZATION

"Centralization is the degree to which a group is spatially located near the center of an urban area" (Massey and Denton, p. 291). As for concentration, absolute and relative measures are presented. **Relative centralization** compares the areal profile of the majority and minority populations, and may be interpreted as the relative share of the minority population that would have to change their area of residence to match the centralization of the majority. The index varies between -1.0 and 1.0 with positive values indicating that minority members are located closer to the center than majority, and negative values the reverse. An index of 0.0 indicates that the two groups have the same spatial distribution around the center. **Absolute centralization** examines only the distribution of the minority group around the center and also varies between -1.0 and 1.0. "Positive values indicate a tendency for [minority] group members to reside close to the city center, while negative values indicate a tendency to live in outlying areas. A score of 0 means that a group has a uniform distribution throughout the metropolitan area" (Massey and Denton, p. 293).

Most analysts using a centralization measure define it in terms of access to the traditional Central Business District (CBD). We feel that this concept is increasingly outmoded as jobs, retail sales, and other CBD functions continue to decentralize. Similarly, the transitional zones that once developed around CBDs should, following Hoover's (1941) logic, also develop around many of the "multiple nuclei" that also have partially supplanted CBDs (see Garreau, 1991). Accordingly, we have defined an alternative to CBD-centered indexes that are based on distance from the population centroid.

V. MEASURES OF CLUSTERING

Clustering measures "the extent to which areal units inhabited by minority members adjoin one another, or cluster, in space" (Massey and Denton, p. 293). A high degree of clustering indicates a racial or ethnic enclave. The first measure of clustering is **absolute clustering**. This index "expresses the average number of [minority] members in nearby [areal units] as a proportion of the total population in those nearby [areal units]", where distances between areal units are measured from their centroids (Massey and Denton, p. 294). It varies from 0.0 to 1.0.[5]

White's (1986) index of **spatial proximity** is the average of intragroup proximities for the minority and majority populations, weighted by the proportions each group represents of the total population. Spatial proximity equals 1.0 if there is no differential clustering between minority and majority group members. It is greater than 1.0 when members of each group live nearer to one another than to members of the other group, and is less than 1.0 if minority and majority members live nearer to members of the other group than to members of their own group.

Massey and Denton derive from these two measures an index of **relative clustering**, which "compares the average distance between [minority] members...with the average distance between [majority] members" (Massey and Denton, p. 295). The index equals 0.0 when minority members display the same amount of clustering as the majority, is positive when minorities display greater clustering than the majority, and is negative if they are less clustered than the majority.

If there is clustering, the number of majority persons with whom a minority might potentially interact should increase with increasing distance from the minority's area of residence. However, the likelihood of actual encounters and interaction with majority persons should decay rapidly. The **distance-decay interaction** index measures this as the sum of the probabilities that a minority person in each tract i, weighted by the minority proportion in that tract, would encounter a resident in another tract j, weighted by the proportion of majority persons in tract j. The index can be interpreted as measuring the probability that the next person a minority group member meets anywhere in the city is a majority member.

Corresponding to this is a **distance-decay isolation** index, which measures the probability that the person a minority next encounters is also a minority. Massey and Denton note that Morgan's (1983) paper proposing these distance-decay indexes did not describe their behavior or provide an empirical example. However, as a distance

[5] We have obtained negative values, though these have been close to zero. Rounding error in calculations could play a role.

weighted function of the exposure interaction and isolation indexes, one might expect the distance-decay measures to also to vary between 0.0 and 1.0, with 0.0 representing maximum segregation on the distance-decay interaction index and 1.0 indicating this on the distance-decay isolation index. The values obtained from census data suggest such a range.

VI. TECHNICAL DESCRIPTION OF SEGREGATION INDEXES

Definitions

n the number of areas (census tracts) in the metropolitan area, ranked smallest to largest by land area

m the number of areas (census tracts) in the metropolitan area, ranked by increasing distance from the Central Business District (m = n)

x_i the minority population of area i

y_i the majority population (non-Hispanic Whites in this report) of area i

y_j the majority population of area j

t_i the total population of area i

t_j the total population of area j

X the sum of all x_i (the total minority population)

Y the sum of all y_i (the total majority population)

T the sum of all t_i (the total population)

pi the ratio of xi to ti (proportion of area i's population that is minority)

P the ratio of X to T (proportion of the metropolitan area's population that is minority)

a_i the land area of area i

A the sum of all a_i (the total land area)

n1 rank of area where the sum of all t_i from area 1 (smallest in size) up to area n1 is equal to X

T_1 the sum of all t_i in area 1 up to area n1

n2 rank of area where the sum of all t_i from area n (largest in size) down to area n2 is equal to X

T_2 the sum of all t_i in area n2 up to area n

d_{ij} the distance between area i and area j centroids, where $d_{ii} = (0.6a_i)^{0.5}$

c_{ij} the exponential transform of $-d_{ij}$ [= $\exp(-d_{ij})$]

b a shape parameter that determines how to weight the increments to segregation contributed by different portions of the Lorenz curve

Index Formulas

Note: Indexes in this report were calculated as if non-Hispanic Whites and the minority group in question were the only two groups present in the total population. Formulas are from Massey and Denton (1988).

1.Dissimilarity

$$\frac{\sum_{i=1}^{n}\left[t_i\left|(p_i - P)\right|\right]}{[2TP(1-P)]}$$

2.Gini

$$\frac{\sum_{i=1}^{n}\sum_{j=1}^{n} t_i t_j\left|(p_i - p_j)\right|}{2T^2P(1-P)}$$

3.Entropy

$$\sum_{i=1}^{n}\left[\frac{t_i(E-E_i)}{ET}\right]$$

where $E_i = p_i \ln\left(\frac{1}{p_i}\right) + (1-p_i)\ln\left(\frac{1}{1-p_i}\right)$

and $E = P\ln\left(\frac{1}{P}\right) + (1-P)\ln\left(\frac{1}{1-P}\right)$

4.Atkinson (parameter b)

$$1 - \left(\frac{P}{1-P}\right)\left|\sum_{i=1}^{n}\left[\frac{(1-p_i)^{1-b}p_i^{\,b}t_i}{PT}\right]\right|^{\frac{1}{1-b}}$$

5.Interaction

$$\sum_{i=1}^{n}\left[\left(\frac{x_i}{X}\right)\left(\frac{y_i}{t_i}\right)\right]$$

6.Isolation

$$\sum_{i=1}^{n}\left[\left(\frac{x_i}{X}\right)\left(\frac{x_i}{t_i}\right)\right]$$

7.Correlation

$$\frac{(I-P)}{(1-P)}$$

where I is the isolation index

8.Delta

$$0.5\sum_{i=1}^{n}\left|\left(\frac{x_i}{X}\right)-\left(\frac{a_i}{A}\right)\right|$$

9.Absolute Concentration

$$1-\left\{\frac{\left[\left[\sum_{i=1}^{n}\left(\frac{x_i a_i}{X}\right)-\sum_{i=1}^{n1}\left(\frac{t_i a_i}{T_1}\right)\right]\right]}{\left[\left[\sum_{i=n2}^{n}\left(\frac{t_i a_i}{T_2}\right)-\sum_{i=1}^{n1}\left(\frac{t_i a_i}{T_1}\right)\right]\right]}\right\}$$

10.Relative Concentration

$$\left\{\frac{\left[\frac{\sum_{i=1}^{n}\left(\frac{x_i a_i}{X}\right)}{\sum_{i=1}^{n}\left(\frac{y_i a_i}{Y}\right)}\right]-1}{\left[\frac{\sum_{i=1}^{n1}\left(\frac{t_i a_i}{T_1}\right)}{\sum_{i=n2}^{n}\left(\frac{t_i a_i}{T_2}\right)}\right]-1}\right\}$$

11.Absolute Centralization

$$\sum_{i=1}^{m}\left(X_{i-1}A_i\right)-\sum_{i=1}^{m}\left(X_i A_{i-1}\right)$$

12.Relative Centralization

$$\sum_{i=1}^{m}\left(X_{i-1}Y_i\right)-\sum_{i=1}^{m}\left(X_i Y_{i-1}\right)$$

13.Absolute Clustering

$$\frac{\left\{\sum_{i=1}^{n}\left[\frac{x_i}{X}\sum_{j=1}^{n}c_{ij}x_j\right]-\left[\frac{X}{n^2}\sum_{i=1}^{n}\sum_{j=1}^{n}c_{ij}\right]\right\}}{\left\{\sum_{i=1}^{n}\left[\frac{x_i}{X}\sum_{j=1}^{n}c_{ij}t_j\right]-\left[\frac{X}{n^2}\sum_{i=1}^{n}\sum_{j=1}^{n}c_{ij}\right]\right\}}$$

14.Spatial Proximity

$$\frac{\left(XP_{xx}+YP_{yy}\right)}{TP_{tt}}$$

where $P_{gg}=\sum_{i=1}^{n}\sum_{j=1}^{n}\left[\frac{\left(g_i g_j c_{ij}\right)}{G^2}\right]$

and $\{g,G\}=\{x,X\},\{y,Y\},\{t,T\}$

15.Relative Clustering

$$\left(\frac{P_{xx}}{P_{yy}}\right)-1$$

16.Distance-Decay Interaction

$$\sum_{i=1}^{n}\left[\frac{x_i}{X}\sum_{j=1}^{n}\left(\frac{k_{ij}y_j}{t_j}\right)\right]$$

where $k_{ij}=\left[\frac{t_j^{(-d_{ij})}}{\sum_{i=1}^{n}t_{ij}^{(-d_{ij})}}\right]$

17.Distance-Decay Isolation

$$\sum_{i=1}^{n}\left[\frac{x_i}{X}\sum_{j=1}^{n}\left(\frac{k_{ij}x_j}{t_j}\right)\right]$$

APPENDIX C

COMPARISON WITH OTHER SOURCES

How do the racial and ethnic residential segregation indexes in this report compare with those of others? The residential segregation estimates in this report were calculated by examining the distribution of the population across census tracts within Metropolitan Areas (MAs) and Primary Metropolitan Statistical Areas (PMSAs), as defined by the Office of Management and Budget on June 30, 1999, and used in Census 2000. Minor Civil Division-based MAs and PMSAs were used in New England. Indexes for different minority groups were calculated using non-Hispanic Whites as the reference group. Since segregation indexes for metropolitan areas with small minority populations are less reliable than those with larger ones, we have also focused on MAs where the minority population comprises at least 3 percent of the MA population or numbers over 20,000.

We evaluated our estimates using two strategies. First, we compared our estimates with those generated by three different institutes: the Ralph and Goldy Lewis Center at the University of California in Los Angeles (UCLA), the Center on Urban and Metropolitan Policy at the Brookings Institution, and the Lewis Mumford Center at State University of New York (SUNY)-Albany. Second, because these research centers only calculate one or two different measures of residential segregation, we compared our other segregation measures to those generated by Massey and Denton (1988) using 1980 Census data.

The Ralph and Goldy Lewis Center at UCLA focuses mainly on the dissimilarity index, calculating it by using census tract information and Census 2000 boundaries for MAs for Blacks or African Americans, Latinos, and Asians and Pacific Islanders. The Lewis Center also analyzes only MAs where the minority population of the group in question numbers over 20,000 or constitutes 3 percent of more of the total population. In addition, the reference group is non-Hispanic Whites and the overall mean dissimilarity score is weighted by the size of the racial/ethnic group population in the MA.

The Brookings Institution uses two basic measures of African American residential segregation in 1980, 1990, and 2000: the dissimilarity and isolation indexes. Census tracts are again used to proxy for neighborhoods, and indexes are calculated at the MA level. Brookings only calculates indexes for MAs with at least 1,000 African American residents in 1990. The 2000 segregation indexes presented by Brookings does not take into account the recent change in the Census 2000 that allowed respondents to identify themselves with multiple race categories. The report defines African Americans as those who checked that category only. The non-Black population serves as the reference group.

The Mumford Center at SUNY-Albany also uses two measures of segregation: dissimilarity and isolation. They calculate both indexes using census tract data and the Census 2000 boundaries for MAs. Federal Information Processing Standards (FIPS) place codes are used to determine which tracts should be located in each MA, whereas we use the state and county code to determine the allocation of tracts in MAs. Using FIPS place codes makes places with populations of less than 10,000 unidentifiable, in which case the Mumford Center assigns those tracts to their original 1990 MA/PMSA location. The 2000 segregation indexes presented by the Mumford Center also take into account the recent change in the Census 2000 that allows respondents to identify themselves with multiple races categories. The Mumford Center's racial and ethnic categories are coded slightly different than in this report. Aside from those in the reference group — non-Hispanic Whites — we allow individuals to fall into more than one racial or ethnic minority category. Hispanics and non-Hispanic Whites are coded similarly by the Mumford Center and this report, but their Black category contains all non-Hispanics who self-identified as Black alone or in combination with another race group, and Asians consist of those who marked Asian but not Black. The Mumford Center alternatively uses Whites, Blacks, Hispanics, and Asians as reference groups in some

of their calculations. In Tables C-1 and C-2, we compare our segregation estimates to those from the Mumford Center where Whites serve as their reference group.

Given the striking similarity in methodologies between the Lewis Center and those used in this report, it should be no surprise then that the Lewis Center's dissimilarity index estimates are virtually the same as ours. Additionally, the Mumford Center dissimilarity scores are not that different from ours. Comparing our figures for all 331 MAs for 1990 and 2000 and 330 for 1980 to the Mumford Center's figures reveals prominent similarities. The Mumford Center's analysis uses the same number of MAs as we do in 1990 and 2000, but includes only 325 MAs in 1980. The unweighted dissimilarity scores have slight differences, with Blacks and Hispanics having the largest differences. Brookings, which calculates indexes for MAs with at least 1,000 African Americans in 1990, are compared against our numbers for all MAs for better comparability. The Brookings' weighted and unweighted dissimilarity index scores for Blacks in 1990 and 2000 are very close to numbers in this report, with ours always higher. The Brookings figure for Black dissimilarity in 1980 is similar to ours, but with a slightly higher difference.

Another index used to measure segregation by two of the three institutes is the isolation index. Brookings' isolation index scores are notably different from our scores. These differences are not trivial, with our numbers consistently higher than Brookings. At least part of the reason for this is the fact that Brookings uses the non-Black population as the reference group, while this report calculates isolation in a two-group context — where only non-Hispanic Whites and the minority group in question are considered in the metropolitan area population. Supporting this explanation, the difference in the scores is larger in 2000 (when the U.S. population was more diverse) than in 1990. The same observation can be seen with the Mumford Center weighted

Table C-1.
Comparison of Dissimilarity Scores in This Report With Those From Other Sources

Source	1980			1990						2000					
	Weighted			Weighted			Unweighted			Weighted			Unweighted		
	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders
This report—selected MAs	0.729	0.509	0.422	0.681	0.505	0.424	0.587	0.408	0.393	0.643	0.515	0.433	0.550	0.432	0.397
This report—all MAs	0.727	0.502	0.405	0.678	0.500	0.412	0.541	0.343	0.366	0.640	0.509	0.411	0.500	0.374	0.338
Brookings Institution	0.700	(NA)	(NA)	0.659	(NA)	(NA)	0.559	(NA)	(NA)	0.620	(NA)	(NA)	0.495	(NA)	(NA)
Mumford Center 10/31/01[1]	0.738	0.507	0.412	0.688	0.506	0.420	0.557	0.361	0.384	0.650	0.515	0.421	0.514	0.386	0.355
Lewis Center 7/19/01	(NA)	(NA)	(NA)	0.674	0.484	0.409	(NA)	(NA)	(NA)	0.646	0.513	0.420	(NA)	(NA)	(NA)

NA Not available.

[1]Unweighted dissimilarity scores were calculated by using metropolitan area data obtained through the Mumford Center website.

Note: Selected MAs are those with 3 percent or 20,000 or more of minority group in 1990. See text for methodological differences across studies.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1 and studies listed.

and unweighted isolation scores. Comparing our figures for all MAs to the Mumford Center's weighted and unweighted isolation scores reveals moderate to high differences, with our scores primarily higher than those of the Mumford Center's. The differences observed in 1990 are not as great as those in 2000, with Asians having the highest differences for the unweighted scores and Hispanics for the weighted scores. Again, the method that the Mumford Center employs for calculating the isolation index is not the same as in this report. Our isolation index numbers are once again higher, in general, probably because only the minority and reference group population (non-Hispanic Whites) are considered in the calculation, while the Mumford Center calculates isolation vis-a-vis the total population.

After comparing our numbers with those of the Brookings Institution, the SUNY-Albany Lewis Mumford Center, and the UCLA Ralph and Goldy Lewis Center, we feel confident that the numbers presented in this report are valid. Our dissimilarity index scores for 1990 and 2000 were very close to those posted by all three research centers, though isolation index scores differed somewhat, but for an understandable reason. These differences are in large part due to the fact that the various Institutes used different methods. The numbers in this report are, unsurprisingly, closest to those who used the most similar methods.

While the above analysis compared segregation scores from Census 2000, it focused only on the two segregation measures calculated by the three research centers. However, in a detailed review of segregation measures, Massey and Denton (1988) described five general dimensions of segregation, each of which have several potential measures (See Appendix B). Following this lead, we calculated 19 of their 20 measures of segregation. So, to evaluate the 17 measures not mentioned above plus the isolation index, we compared our estimates to Massey and Denton's. Massey and Denton calculated their indexes using 1980 census data on the 50 largest Standard Metropolitan Statistical Areas (the forerunner of

Table C-2.
Comparison of Isolation Scores in This Report With Those From Other Sources

Source	1980			1990						2000					
	Weighted			Weighted			Unweighted			Weighted			Unweighted		
	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders	Blacks	Hispanics	Asians and Pacific Islanders
This report—selected MAs	0.661	0.468	0.292	0.622	0.521	0.330	0.441	0.282	0.213	0.599	0.572	0.395	0.428	0.354	0.285
This report—all MAs	0.655	0.454	0.233	0.614	0.508	0.264	0.327	0.140	0.059	0.591	0.552	0.306	0.320	0.207	0.081
Brookings Institution	0.548	(NA)	(NA)	0.467	(NA)	(NA)	0.255	(NA)	(NA)	0.391	(NA)	(NA)	0.205	(NA)	(NA)
Mumford Center 10/31/01[1]	0.618	0.384	0.184	0.559	0.424	0.191	0.300	0.128	0.447	0.514	0.455	0.210	0.277	0.167	0.557

NA Not available.

[1]Weighted and unweighted isolation scores were calculated by using metropolitan area data obtained through the Mumford Center Web site. Tabulations weighted by the number of members in the minority group in question in each metropolitan area.

Note: Selected MAs are those with 3 percent or 20,000 or more of minority group in 1990. See text for methodological differences across studies.

Source: U.S. Census Bureau, Census 1980, 1990, and 2000 Summary File 1 and studies listed.

MAs), plus 10 others with sizeable concentrations of Hispanics. Their study defines neighborhoods in terms of census tracts. For an approximate comparison, we selected the 58 largest MAs in 1980, whose total population was greater than 810,000.

When one compares Massey and Denton's estimates to our 1980 segregation calculations, the values are quite similar (see Table C-3). Differences between the calculations were generally below 0.05. Because we used the same method to calculate the isolation index, these scores differed only slightly. The indexes that exhibited high differences in unweighted averages were the relative clustering index, the relative concentration index, the relative centralization index, and Atkinson with its shape parameter, b, equal to 0.1. Each had differences above 0.05 but below 0.065, with the exception of the relative clustering index, which had a high difference of 0.238. This index, though, has a greater range (from -0.729 to 10.086 according to Massey and Denton calculations) and standard deviation than any other measure. Our median values tended to be lower than Massey and Denton's, with the relative clustering index, the relative concentration index, and Atkinson (b=0.1) again exhibiting the greatest differences. Our minimum values also tended to be smaller than Massey and Denton's while our maximum values were not that different from Massey and Denton's. Overall, our 1980 calculations were not that different from Massey and Denton's calculations. Differences can likely be attributed, at least in part, to the difference in the method in which these MAs were chosen.

In sum, the indexes presented in this report are robust, but the reader is warned that differences in approach, whether in geographic unit of analysis, the reference group, the treatment of multirace individuals, or the inclusion/exclusion or weighting of metropolitan areas, can have an effect on the indexes. It is, however, our conclusion that the comparisons over time and among groups would likely be consistently found across studies that use slightly different approaches.

Table C-3.
Medians and Unweighted Means for Segregation Indexes by Source

Index	Census Bureau calculations for 58 MAs, 1980					Massey and Denton calculations for 60 MAs, 1980				
	Median	Unweighted Mean	Unweighted Standard Deviation	Minimum	Maximum	Median	Unweighted Mean	Unweighted Standard Deviation	Minimum	Maximum
Dissimilarity	**0.457**	**0.500**	**0.184**	**0.191**	**0.878**	**0.465**	**0.510**	**0.169**	**0.215**	**0.906**
Gini	0.609	0.636	0.191	0.276	0.971	0.620	0.654	0.171	0.318	0.974
Entropy	0.187	0.262	0.207	0.031	0.781	0.198	0.267	0.196	0.042	0.780
Atkinson with b=.1	0.076	0.110	0.087	0.013	0.436	0.148	0.170	0.114	0.024	0.553
Atkinson with b=.5	0.315	0.397	0.235	0.069	0.908	0.358	0.427	0.214	0.097	0.922
Atkinson with b=.9	0.514	0.574	0.263	0.129	0.988	0.551	0.599	0.237	0.171	0.994
Interaction	0.827	0.724	0.263	0.145	0.991	0.805	0.713	0.261	0.147	0.989
Isolation	**0.173**	**0.276**	**0.263**	**0.009**	**0.855**	**0.195**	**0.287**	**0.261**	**0.011**	**0.853**
Correlation ratio	0.122	0.231	0.237	0.003	0.813	0.126	0.232	0.230	0.006	0.811
Delta	**0.792**	**0.781**	**0.096**	**0.437**	**0.935**	**0.781**	**0.774**	**0.097**	**0.416**	**0.937**
Absolute concentration	0.951	0.933	0.059	0.609	0.990	0.936	0.901	0.098	0.468	0.990
Relative concentration	0.554	0.522	0.269	–0.582	0.965	0.469	0.458	0.291	–0.483	0.945
Absolute centralization	**0.765**	**0.724**	**0.156**	**0.264**	**0.948**	**0.778**	**0.744**	**0.154**	**0.128**	**0.969**
Relative centralization	0.216	0.238	0.195	–0.222	0.696	0.265	0.291	0.202	–0.142	0.742
Absolute clustering	0.051	0.145	0.180	–0.003	0.667	0.060	0.137	0.168	0.006	0.668
Spatial proximity	**1.057**	**1.148**	**0.192**	**1.001**	**1.818**	**1.053**	**1.133**	**0.182**	**1.000**	**1.844**
Relative clustering	0.875	1.436	1.598	–0.351	9.983	0.518	1.198	1.742	–0.729	10.086
Distance decay interaction	0.891	0.802	0.206	0.304	0.994	0.886	0.790	0.214	0.216	0.993
Distance decay isolation	0.103	0.195	0.207	0.005	0.696	0.114	0.210	0.214	0.007	0.739

Note: Indexes in bold are those highlighted in this report.

Source: U.S. Census Bureau figures from Census Summary File 1 for 1980. Others are from Massey and Denton, 1988.

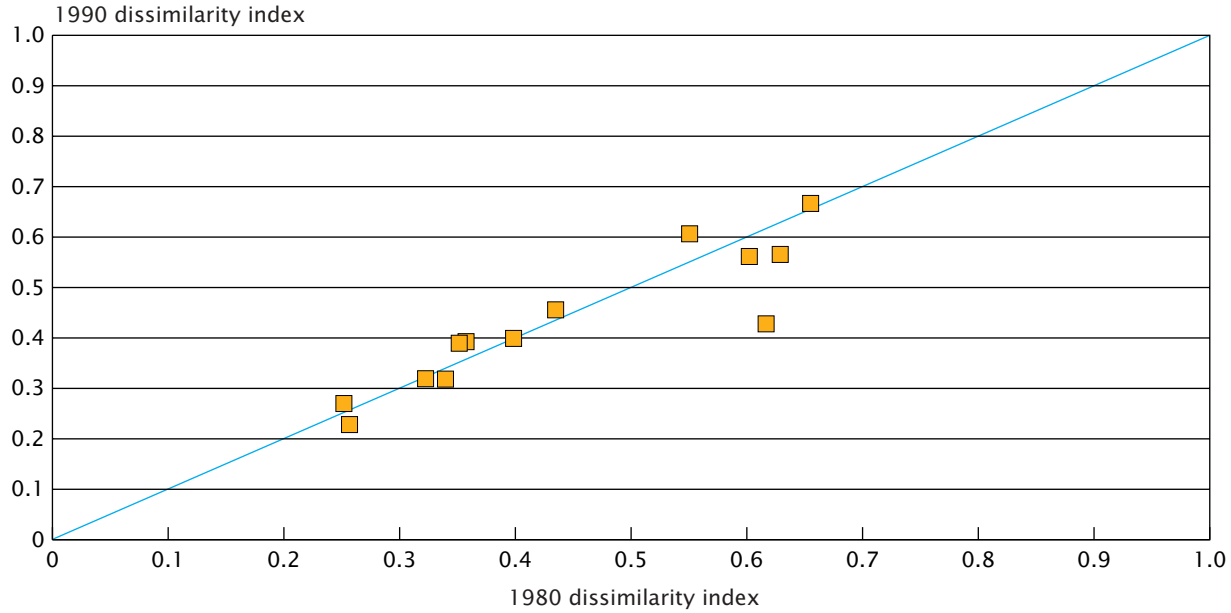
APPENDIX D

DETAILED FIGURES

The following detailed figures show 2-decade changes for selected individual metropolitan areas for each racial/ethnic group for each of the five indexes. The 2-decade changes include 1980 versus 1990 and 1990 versus 2000. Those metropolitan areas above the 45 degree line indicate an increase in segregation between the two decades, while those below the line indicate a decrease.

Figure D-1a.

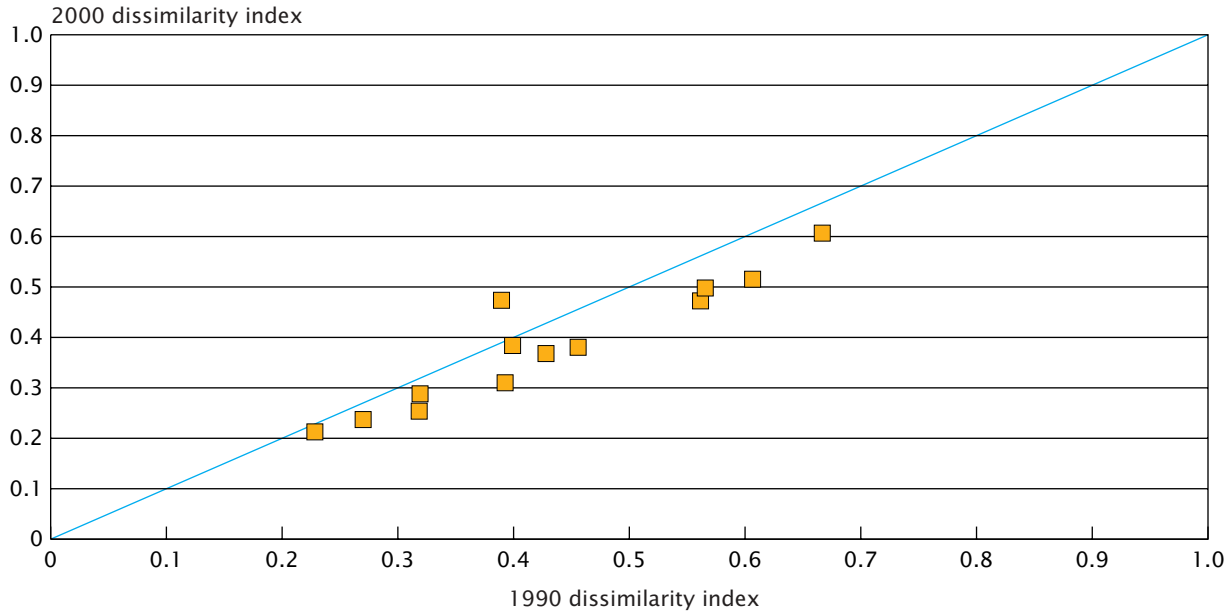
Dissimilarity Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-1b.

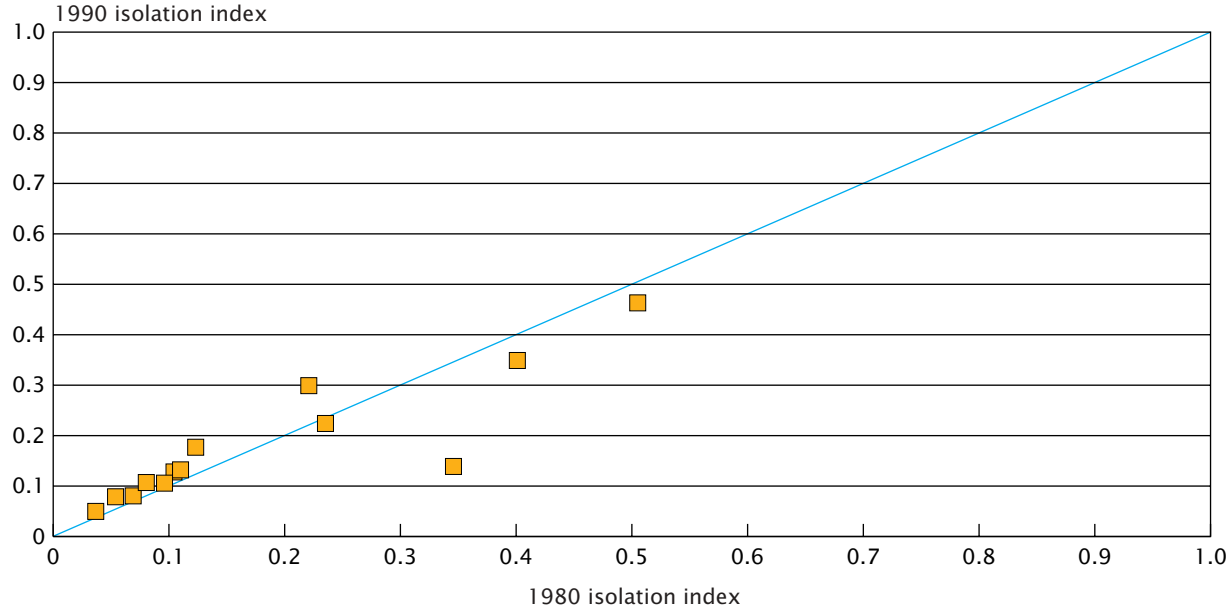
Dissimilarity Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-1c.

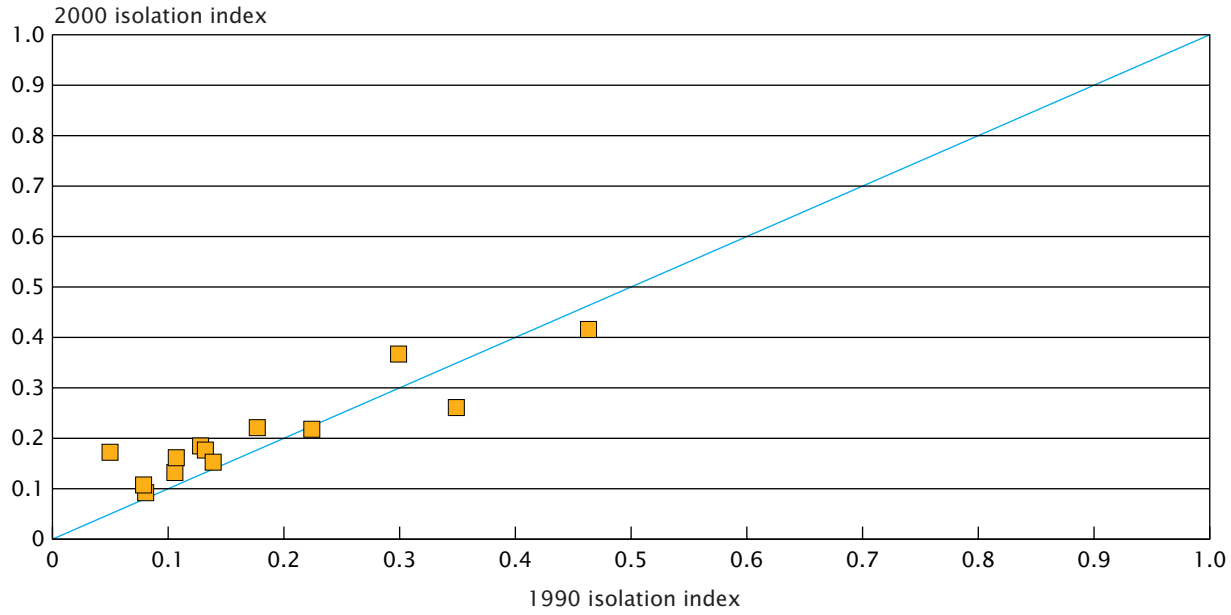
Isolation Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-1d.

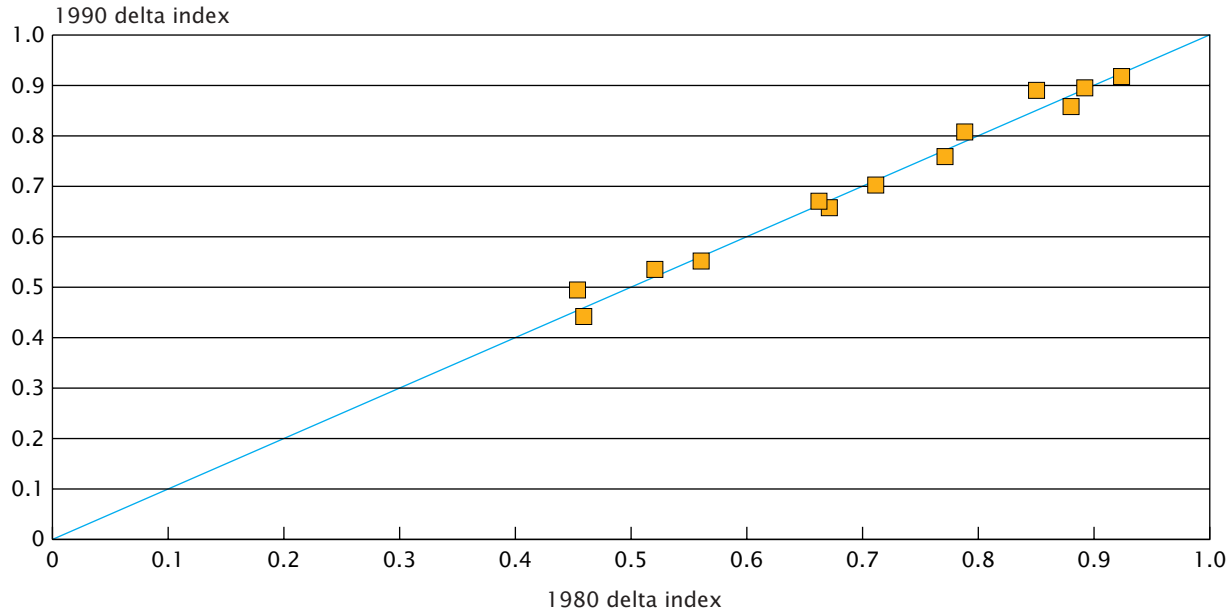
Isolation Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-1e.

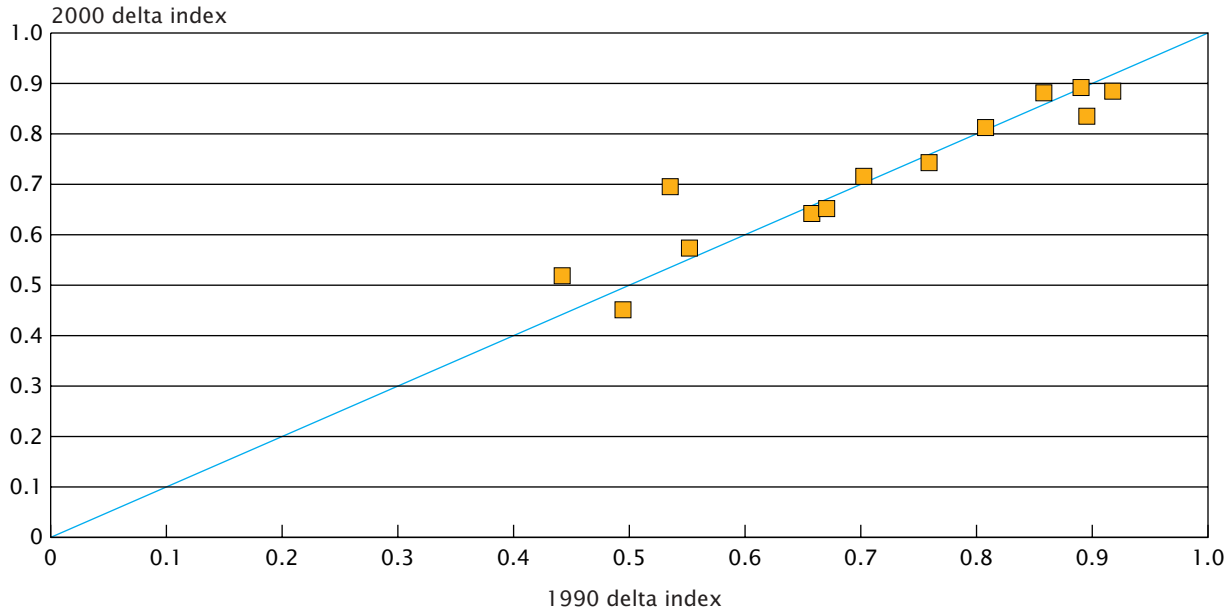
Delta Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-1f.

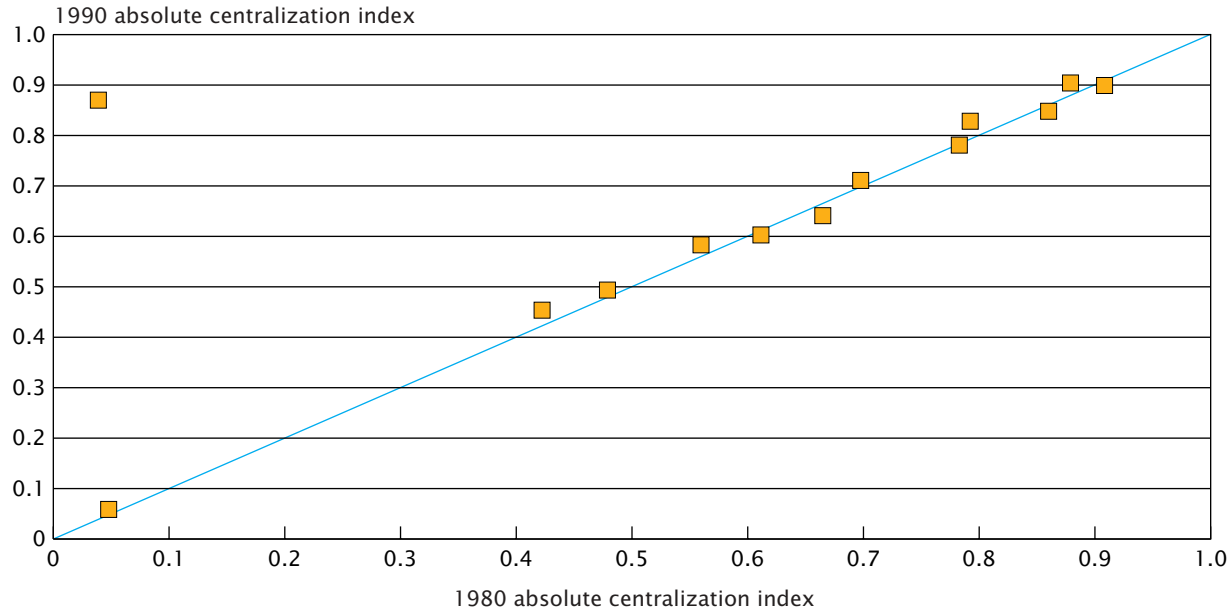
Delta Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-1g.

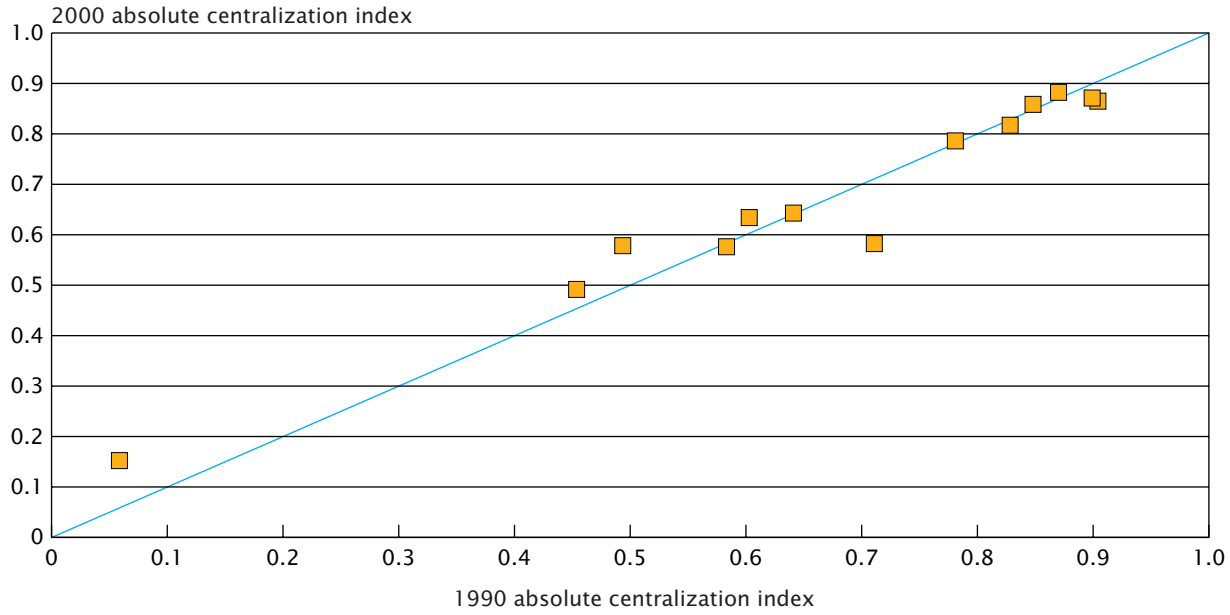
Absolute Centralization Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-1h.

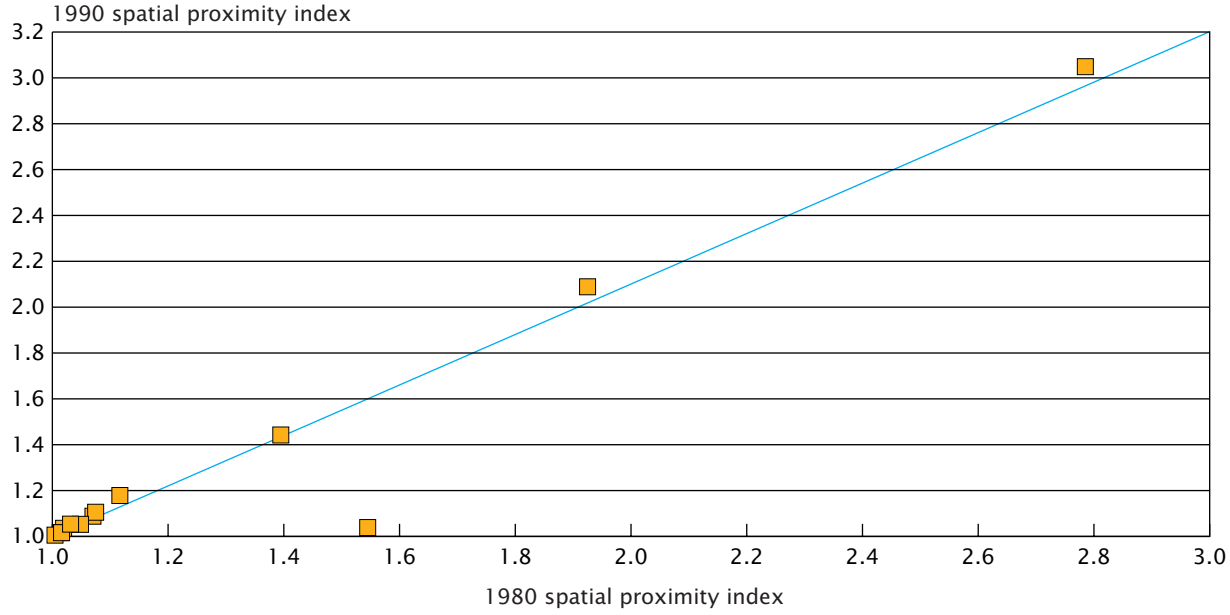
Absolute Centralization Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-1i.

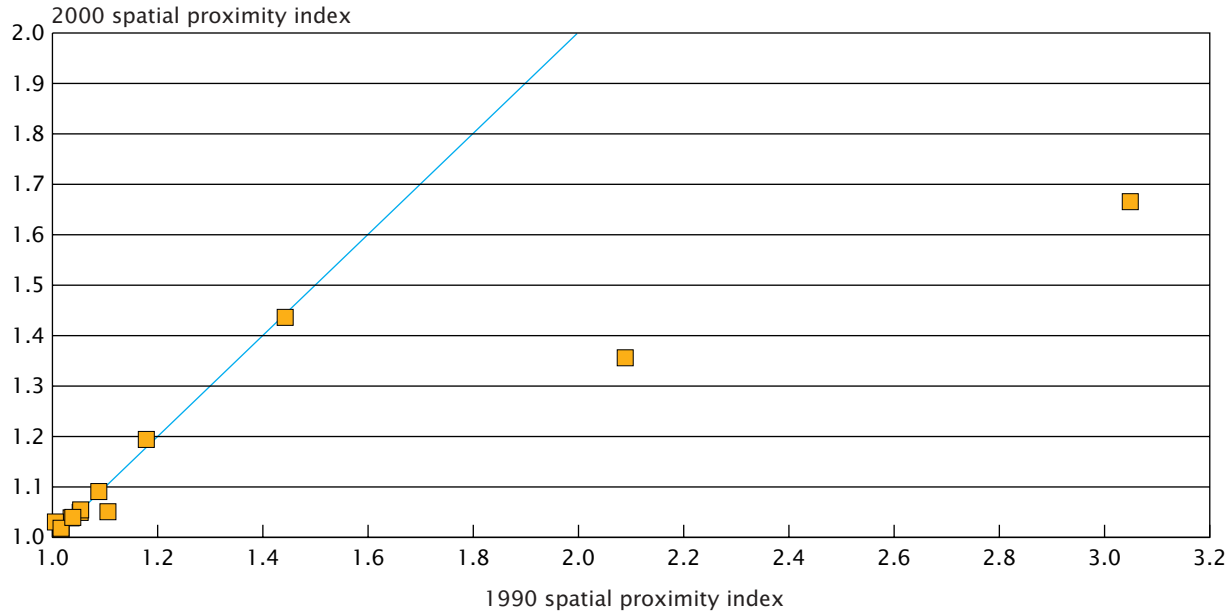
Spatial Proximity Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-1j.

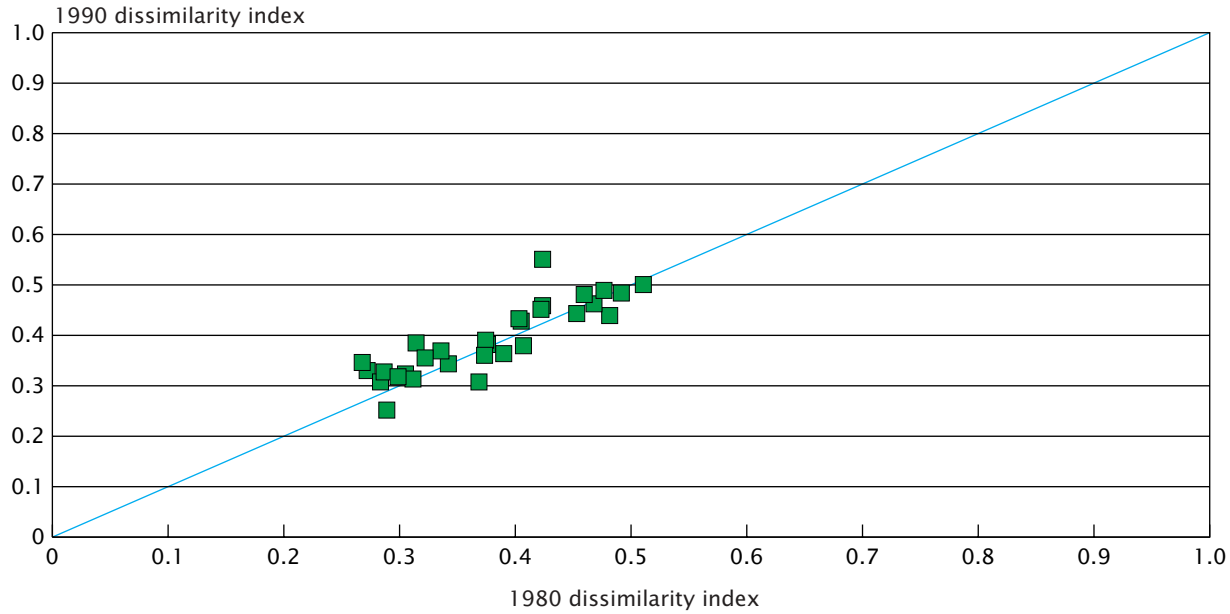
Spatial Proximity Index for American Indians and Alaska Natives for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more American Indians and Alaska Natives in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-2a.

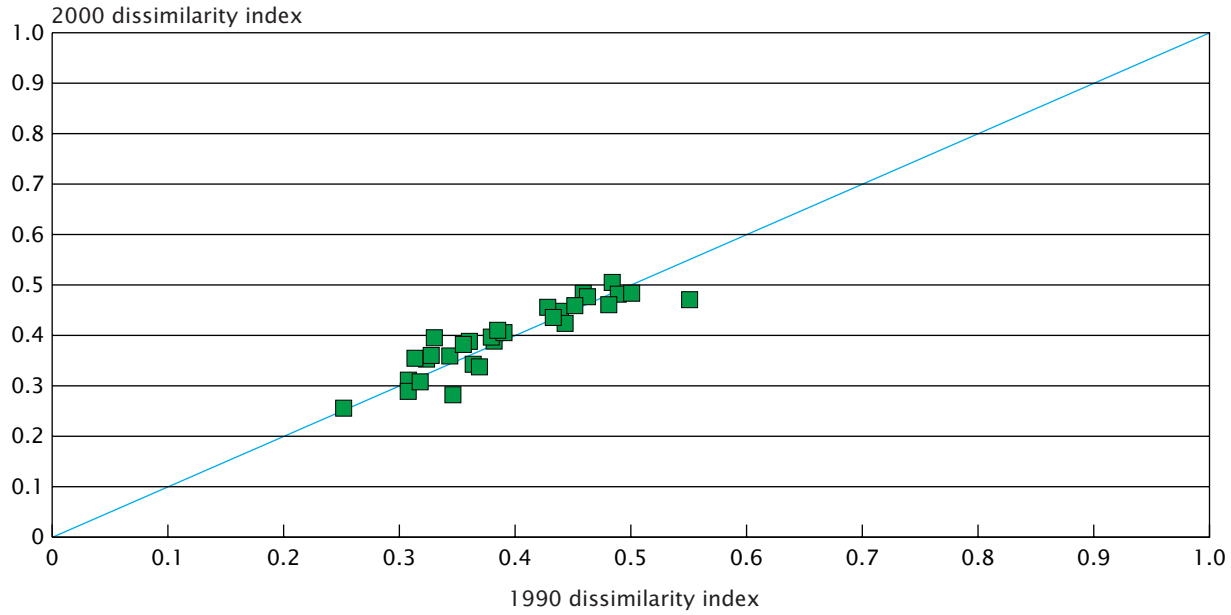
Dissimilarity Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-2b.

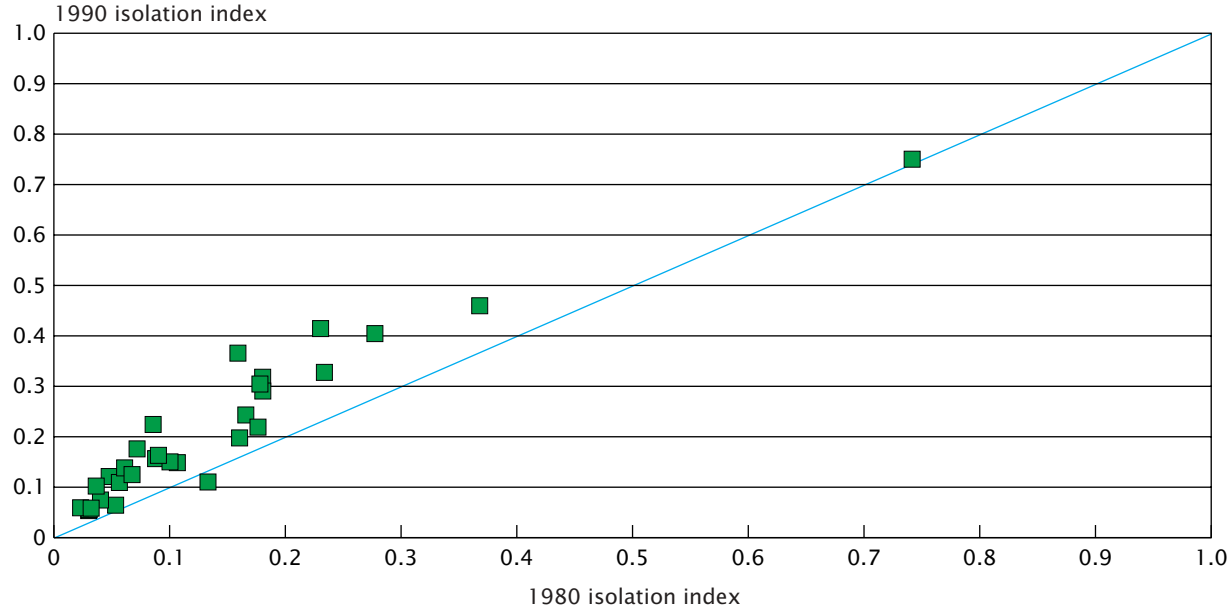
Dissimilarity Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-2c.

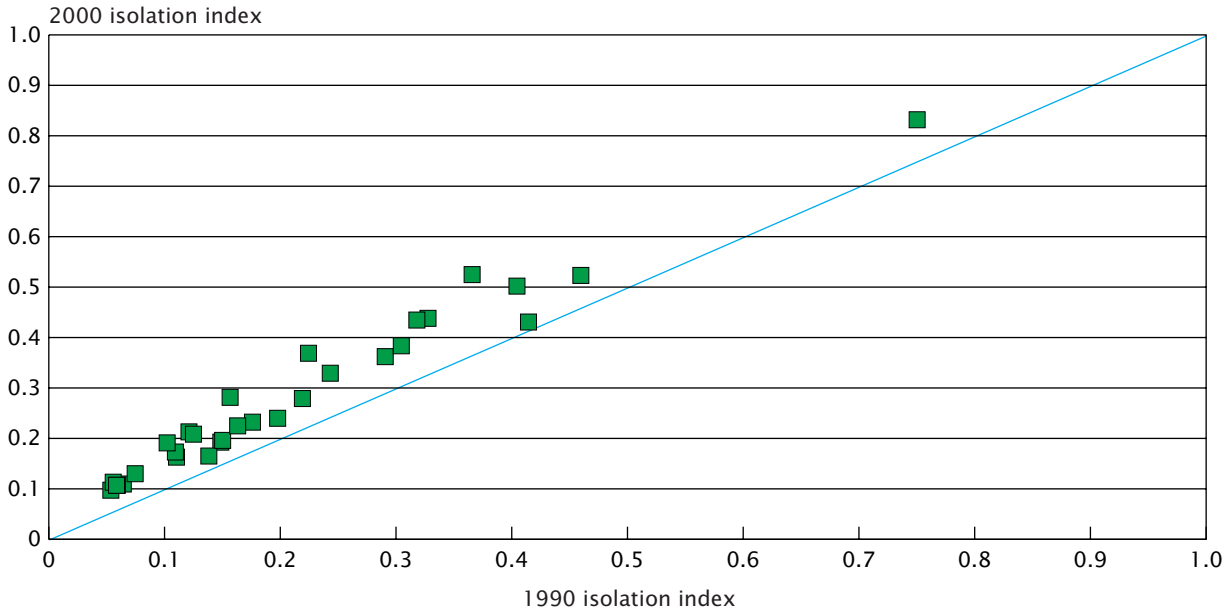
Isolation Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-2d.

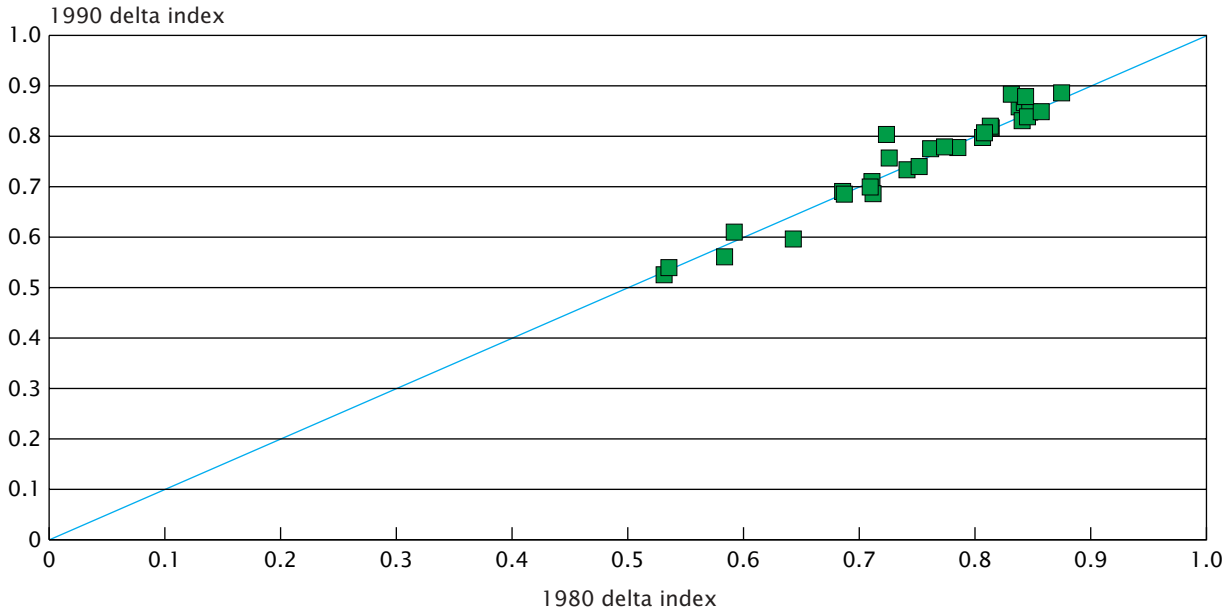
Isolation Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-2e.

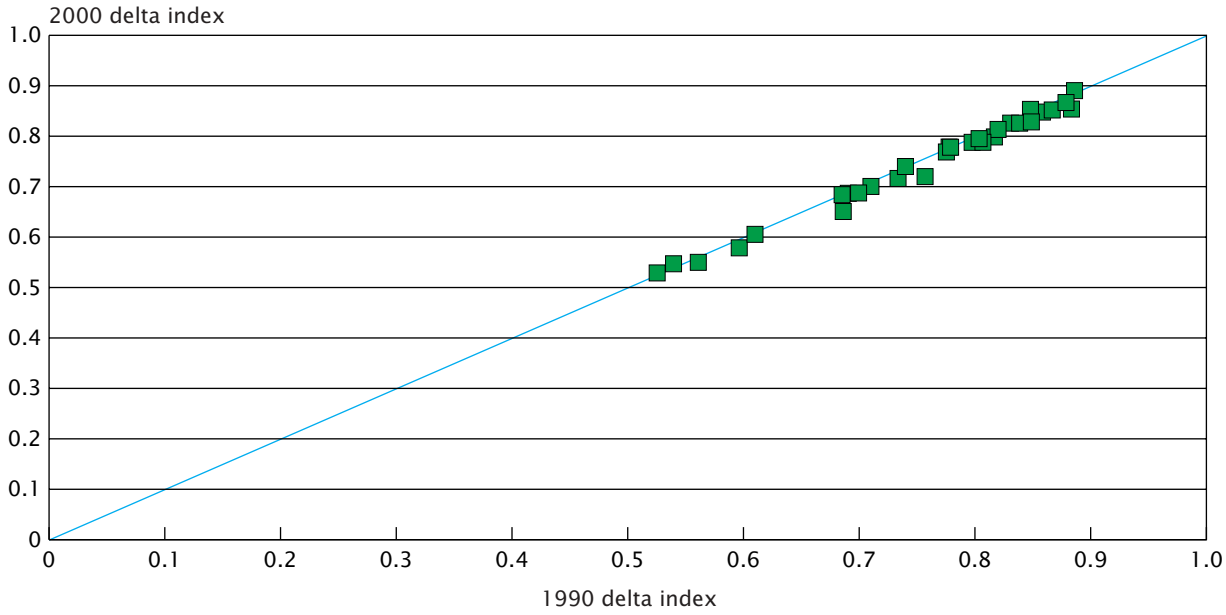
Delta Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-2f.

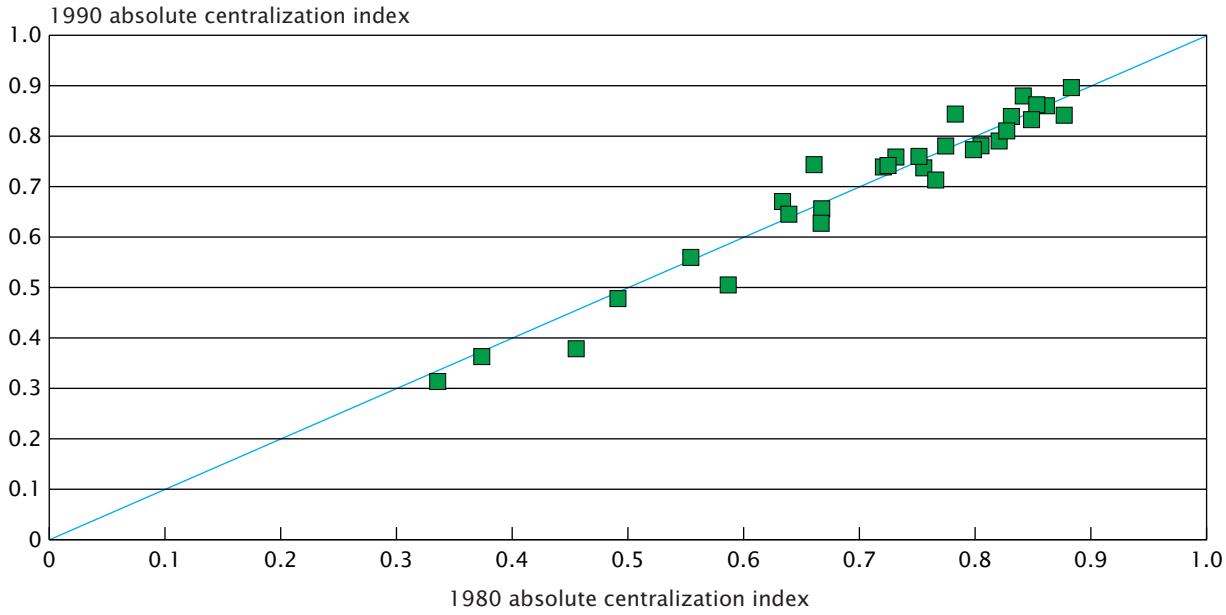
Delta Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-2g.

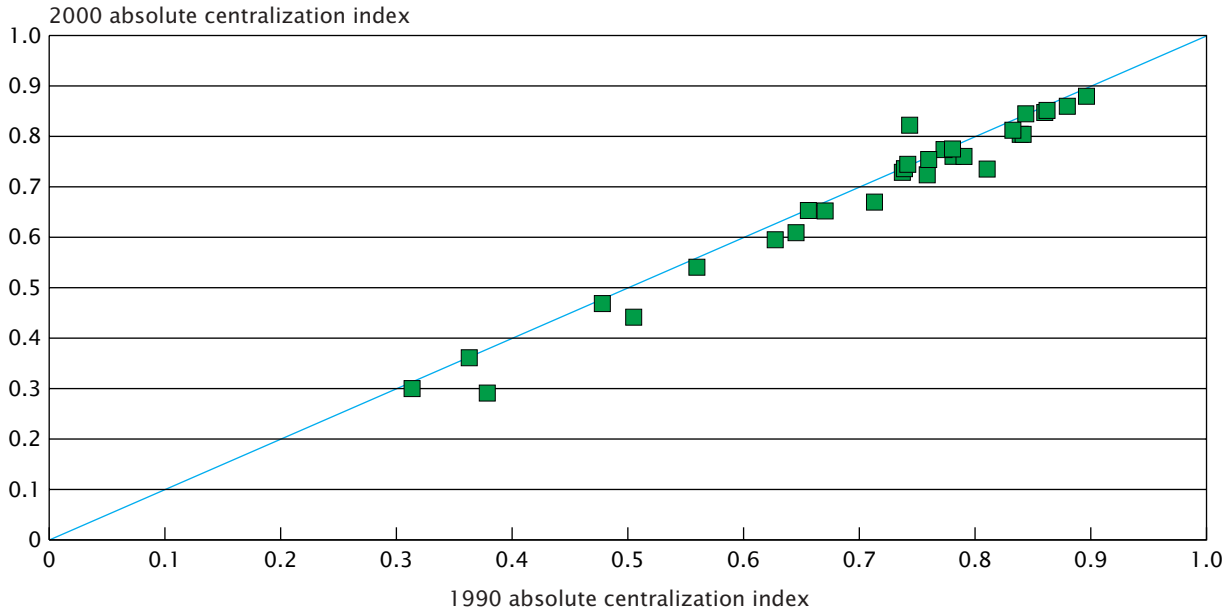
Absolute Centralization Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-2h.

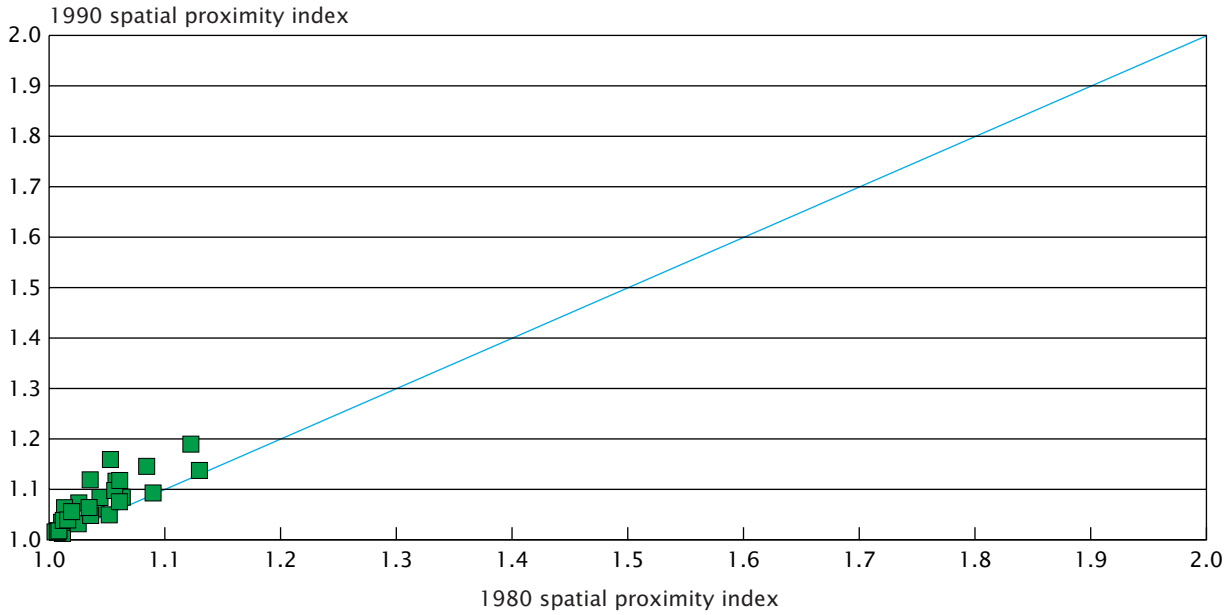
Absolute Centralization Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-2i.

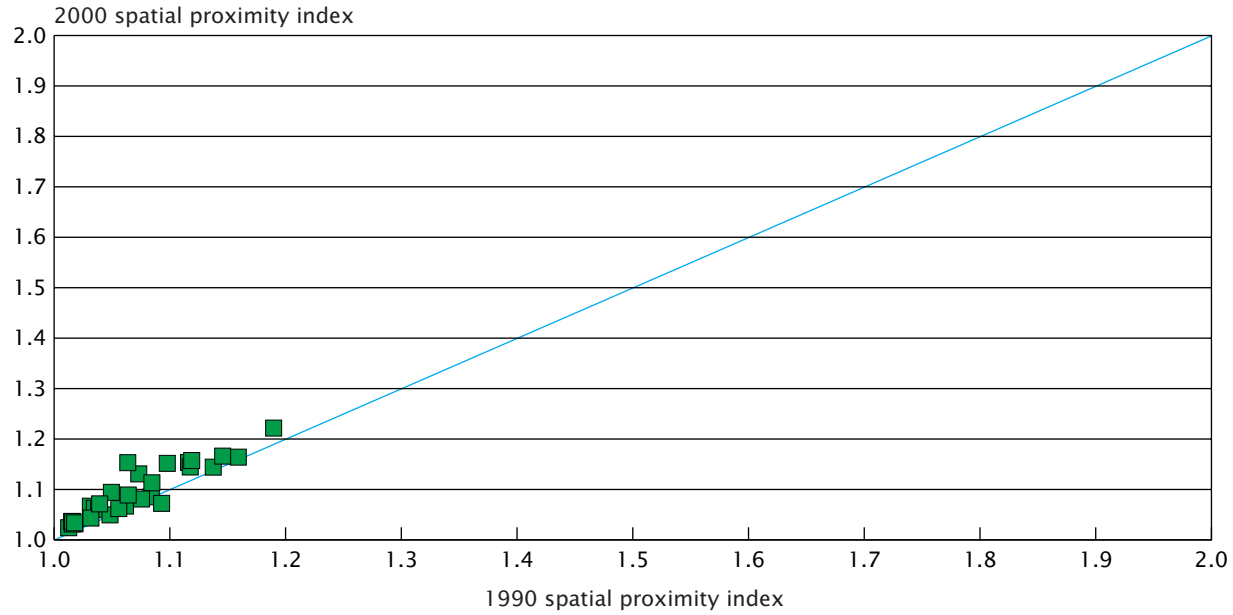
Spatial Proximity Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-2j.

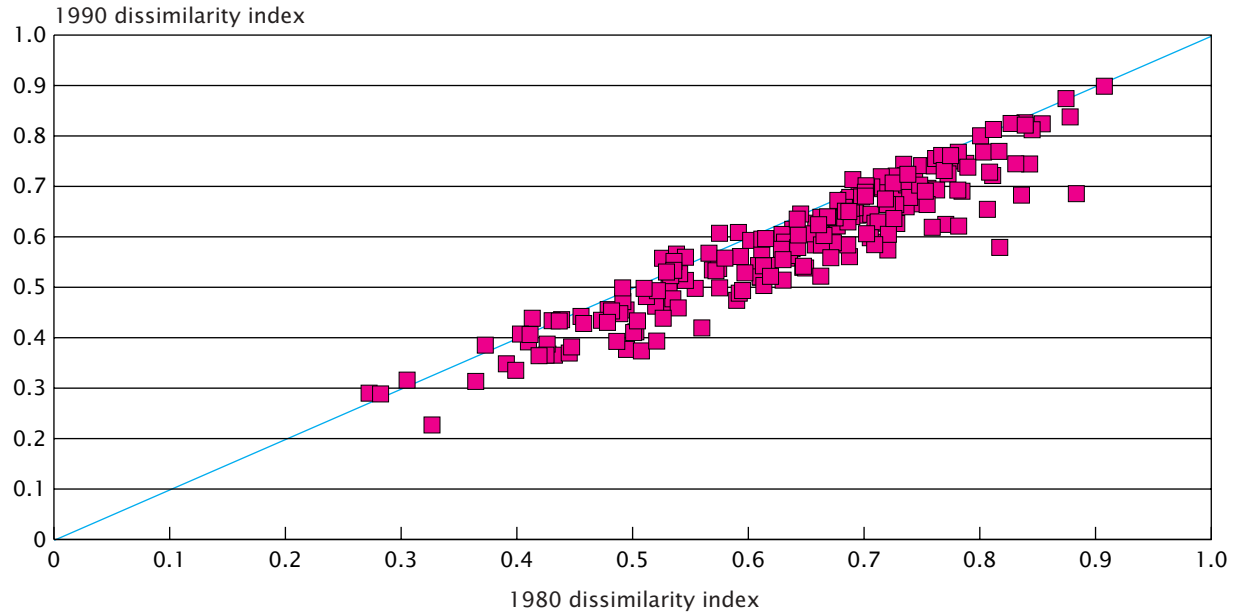
Spatial Proximity Index for Asians and Pacific Islanders for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Asians and Pacific Islanders in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-3a.

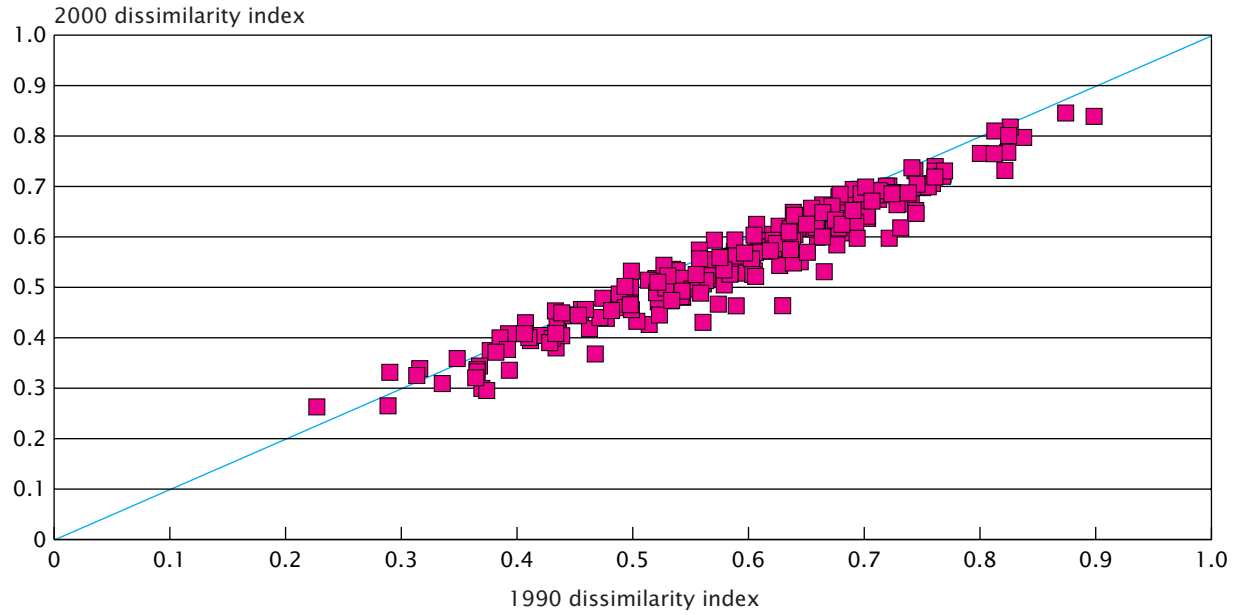
Dissimilarity Index for Blacks for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-3b.

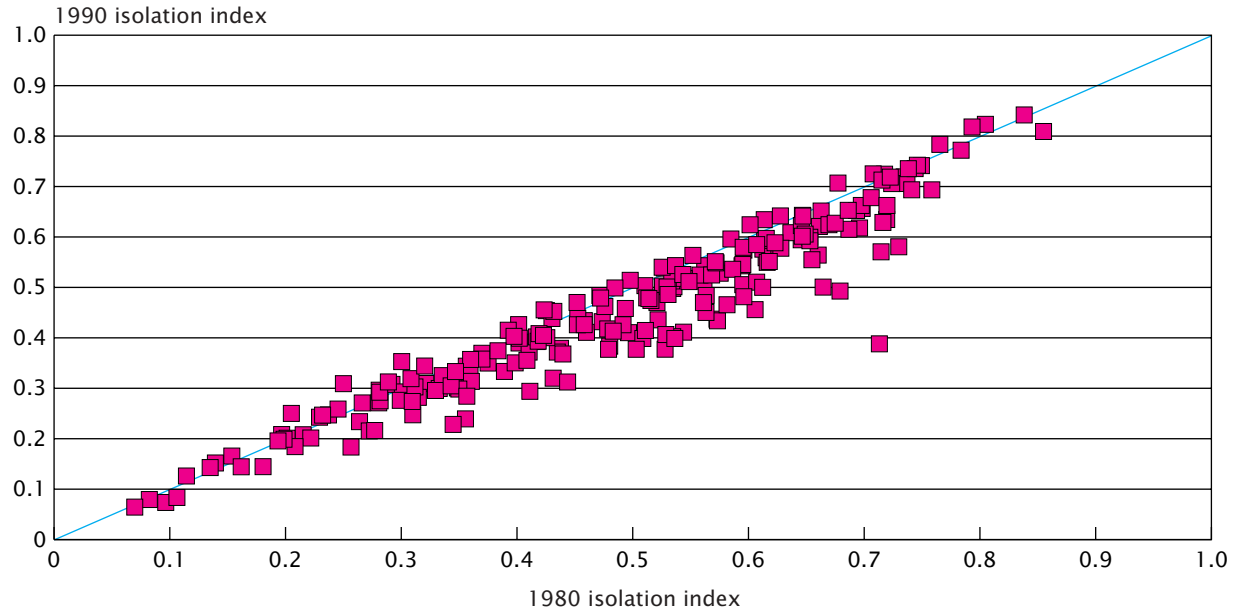
Dissimilarity Index for Blacks for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-3c.

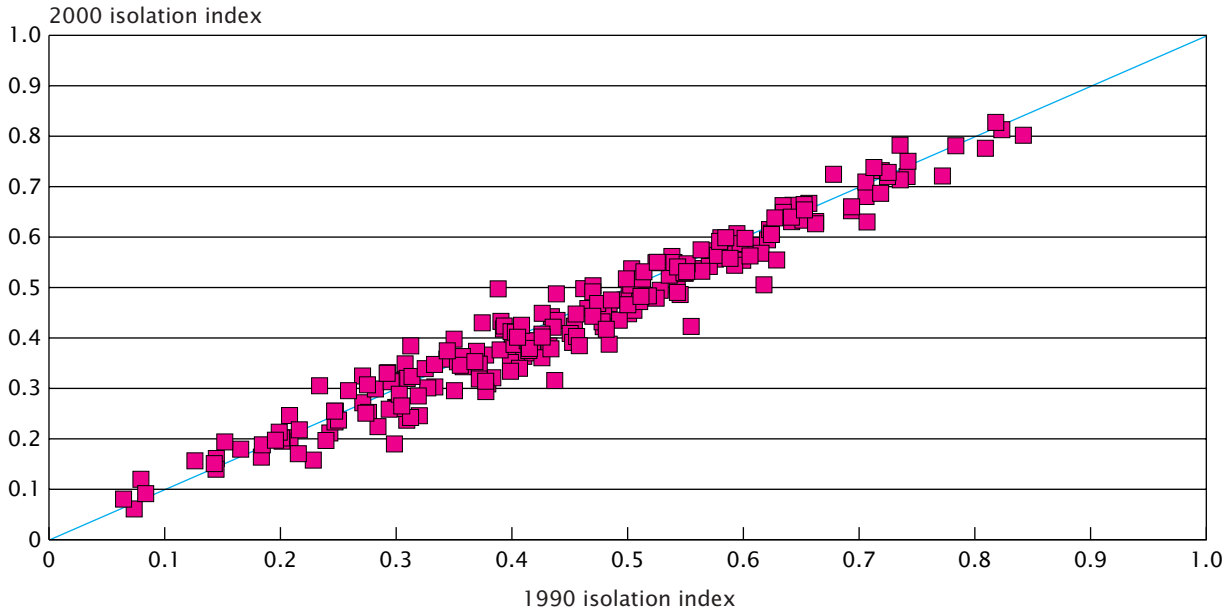
Isolation Index for Blacks for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-3d.

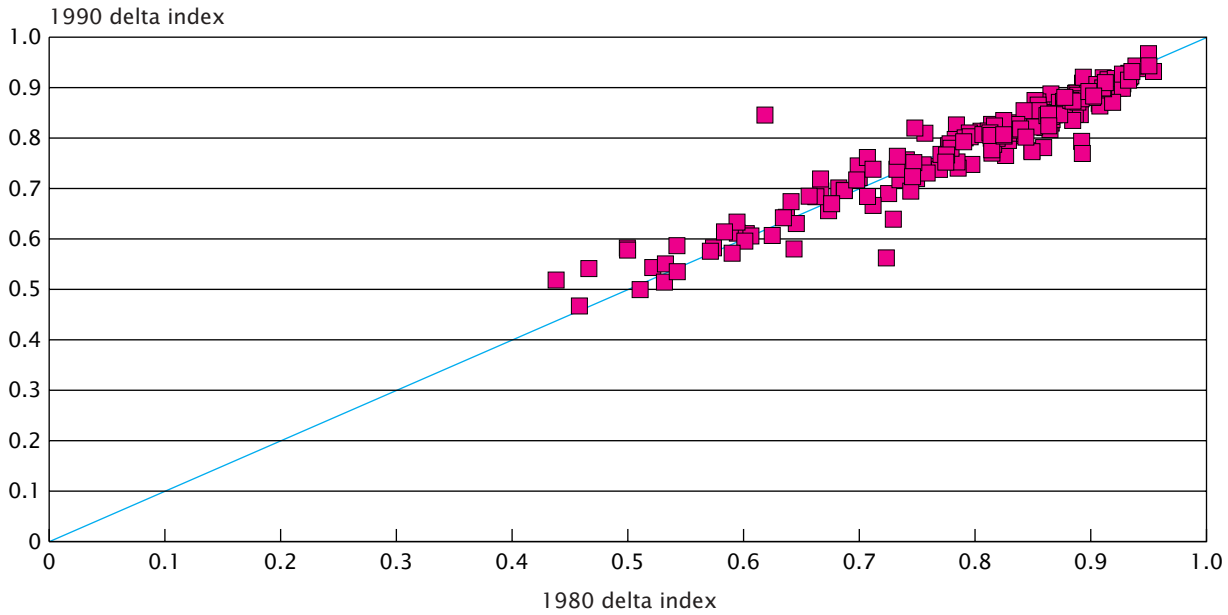
Isolation Index for Blacks for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-3e.

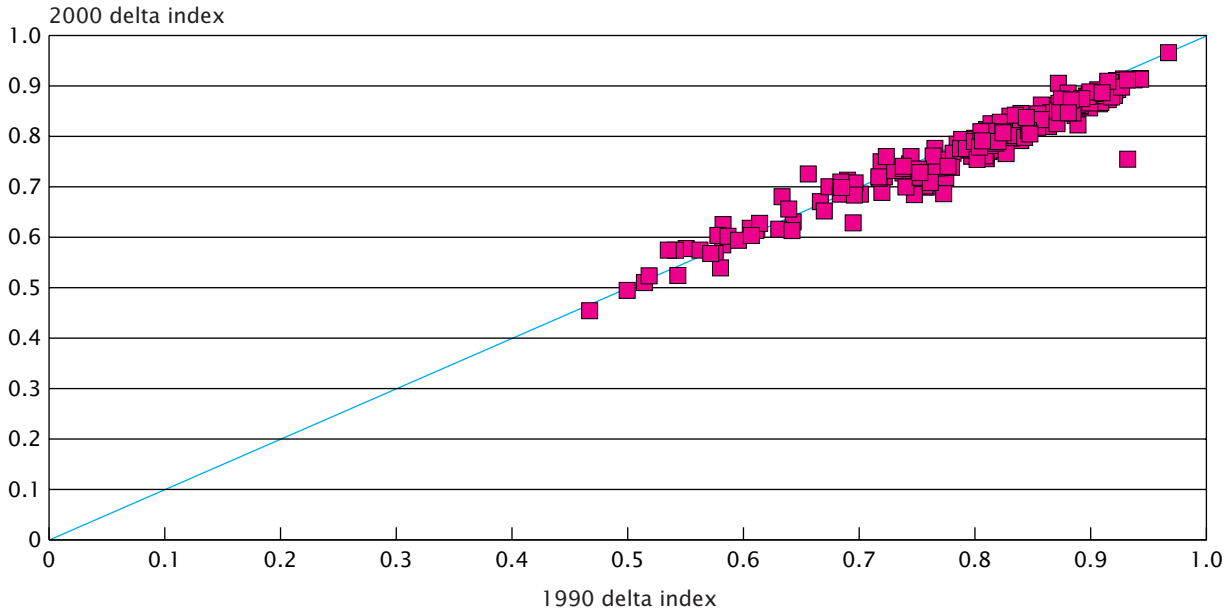
Delta Index for Blacks for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-3f.

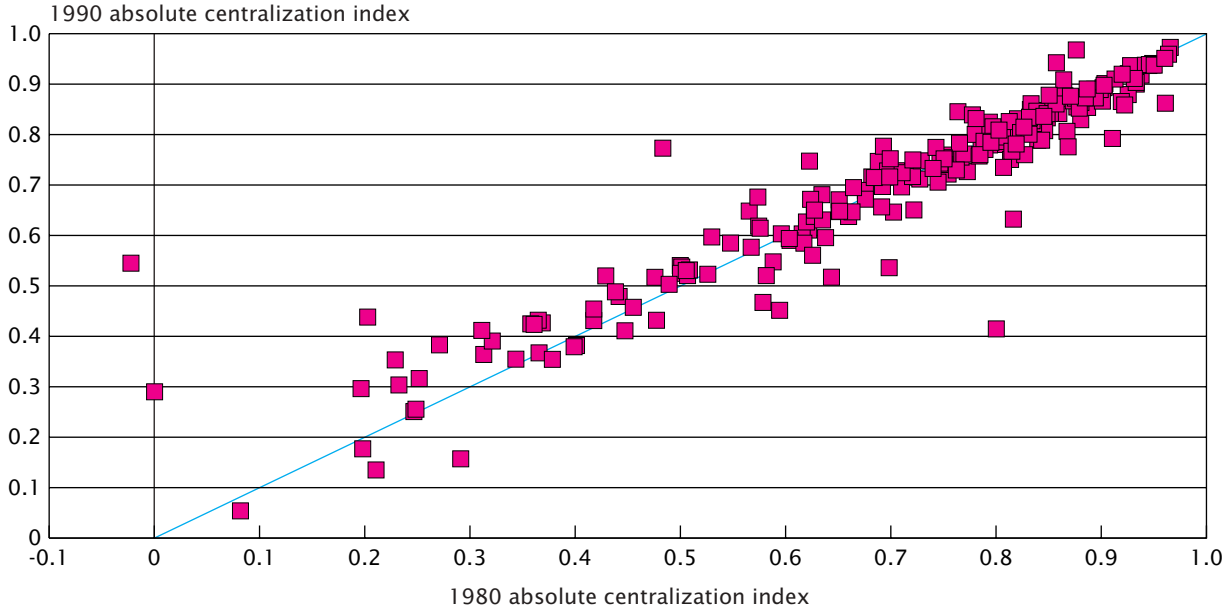
Delta Index for Blacks for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-3g.

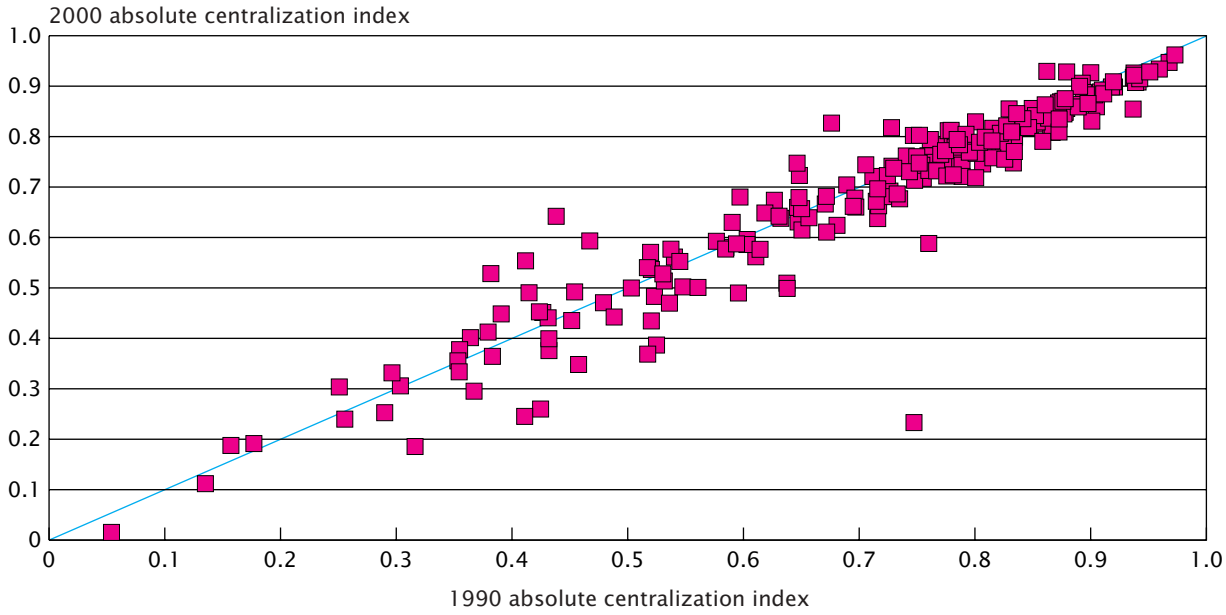
Absolute Centralization Index for Blacks for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-3h.

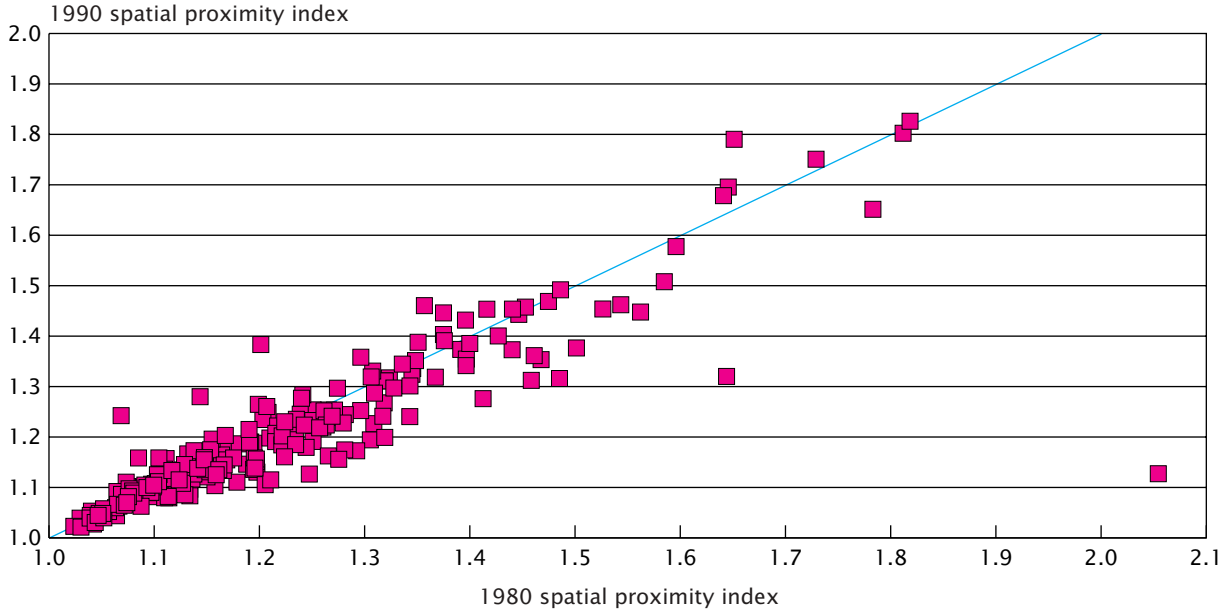
Absolute Centralization Index for Blacks for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-3i.

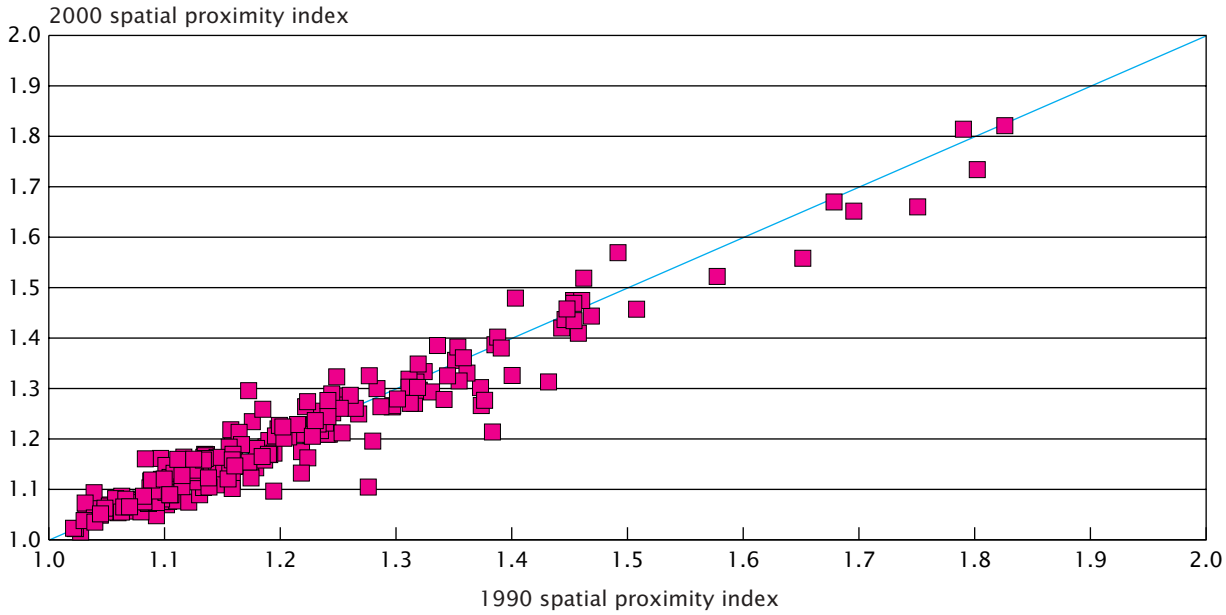
Spatial Proximity Index for Blacks for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-3j.

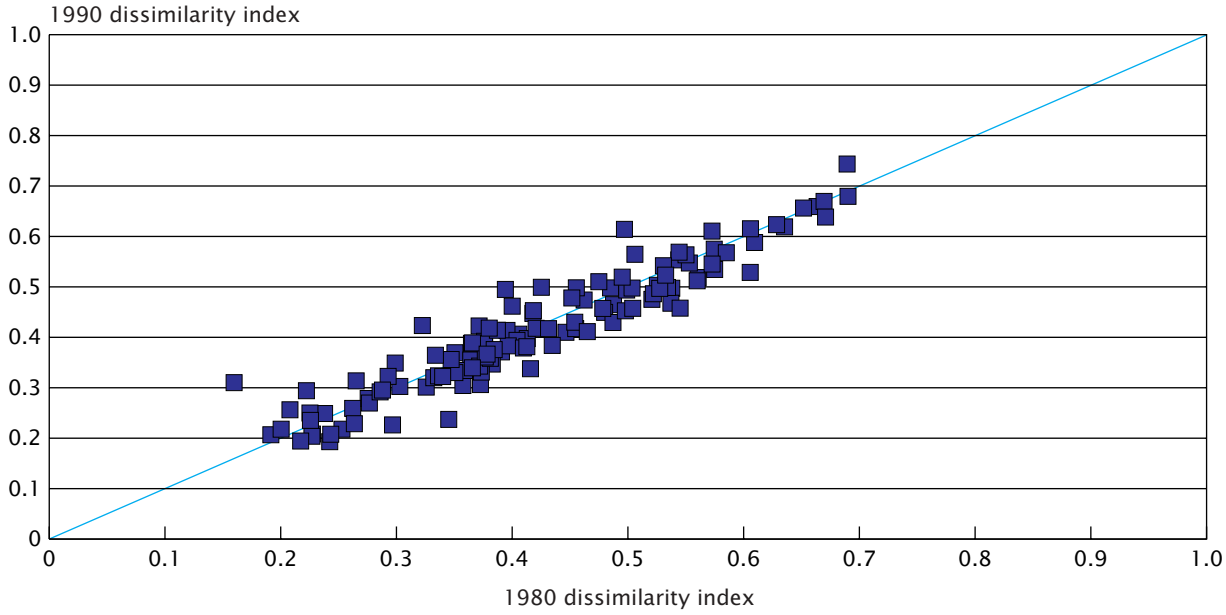
Spatial Proximity Index for Blacks for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Blacks or African Americans in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-4a.

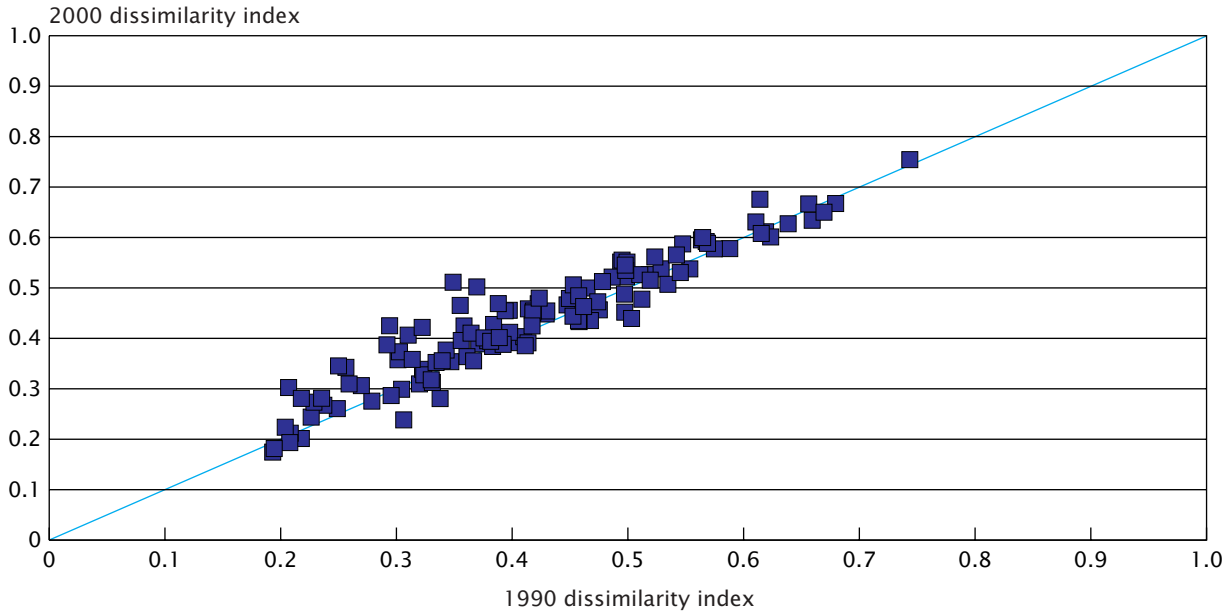
Dissimilarity Index for Hispanics for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-4b.

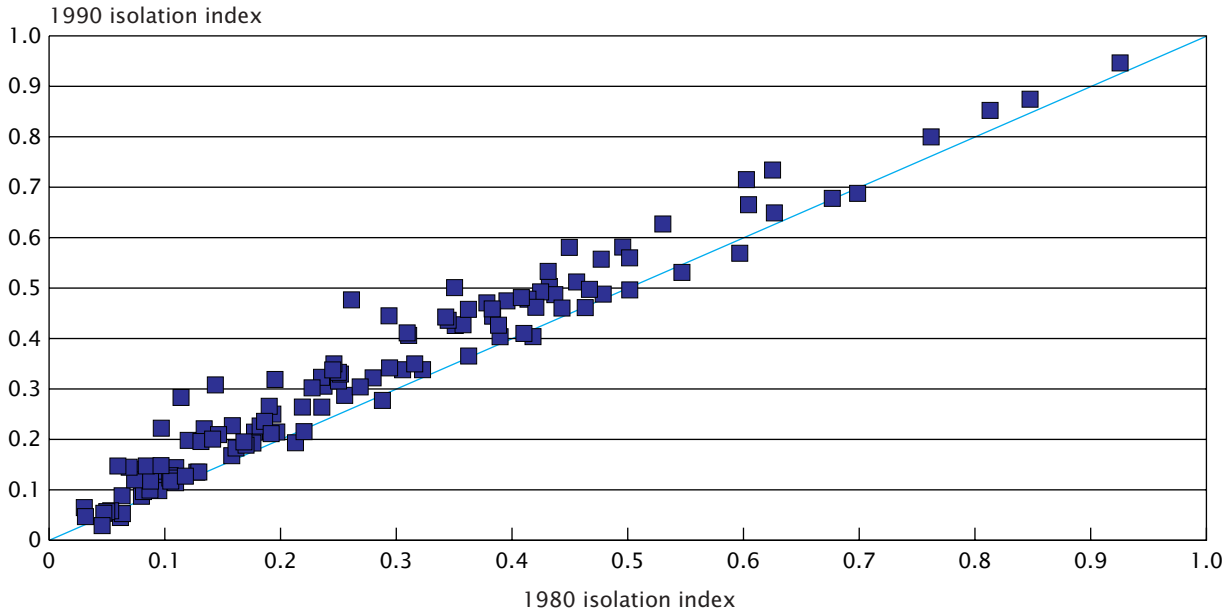
Dissimilarity Index for Hispanics for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-4c.

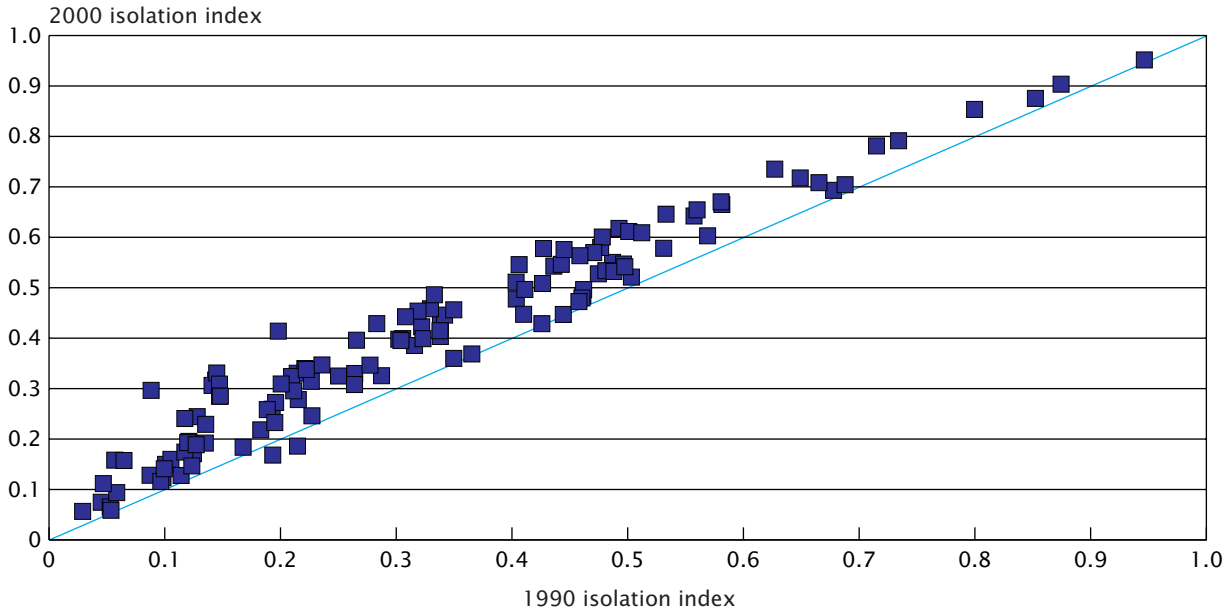
Isolation Index for Hispanics for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-4d.

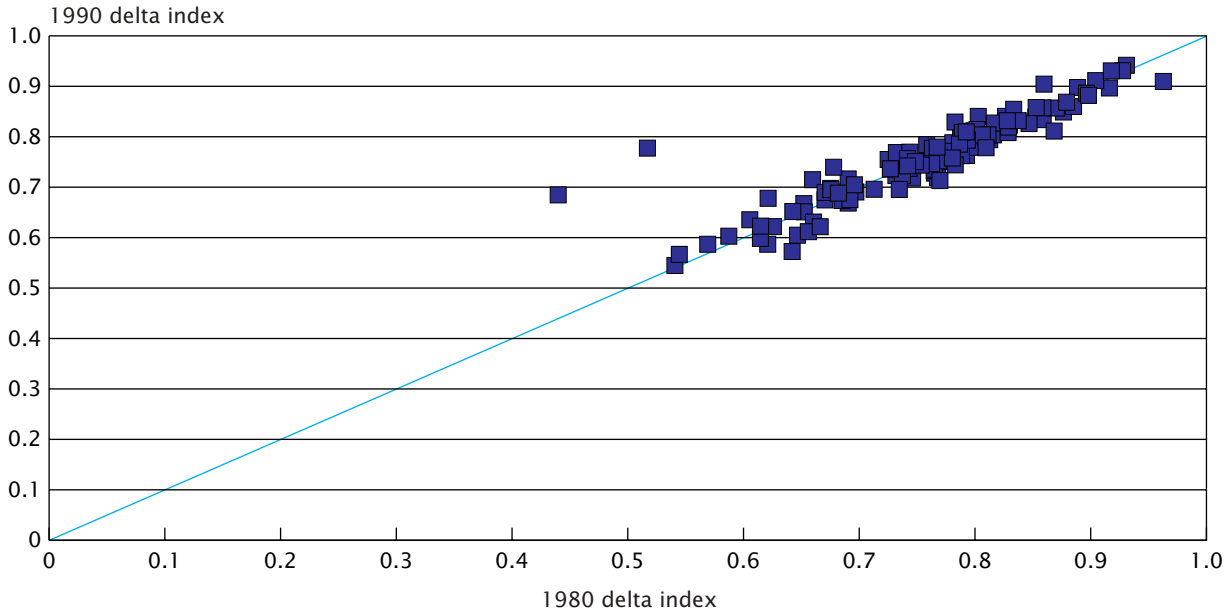
Isolation Index for Hispanics for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-4e.

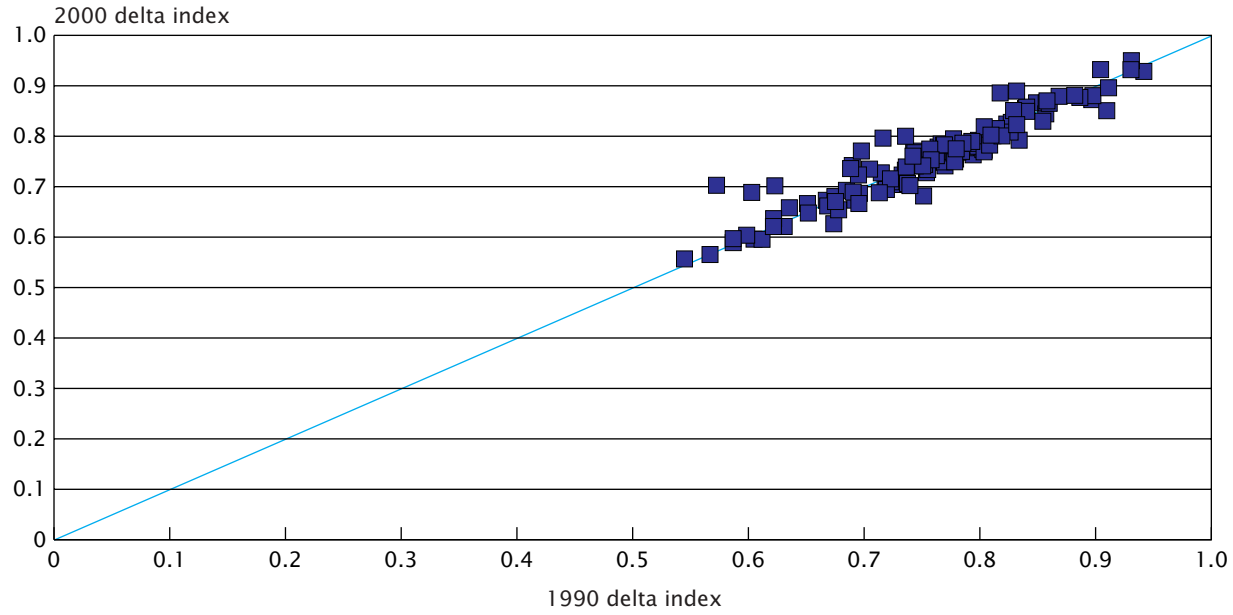
Delta Index for Hispanics for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-4f.

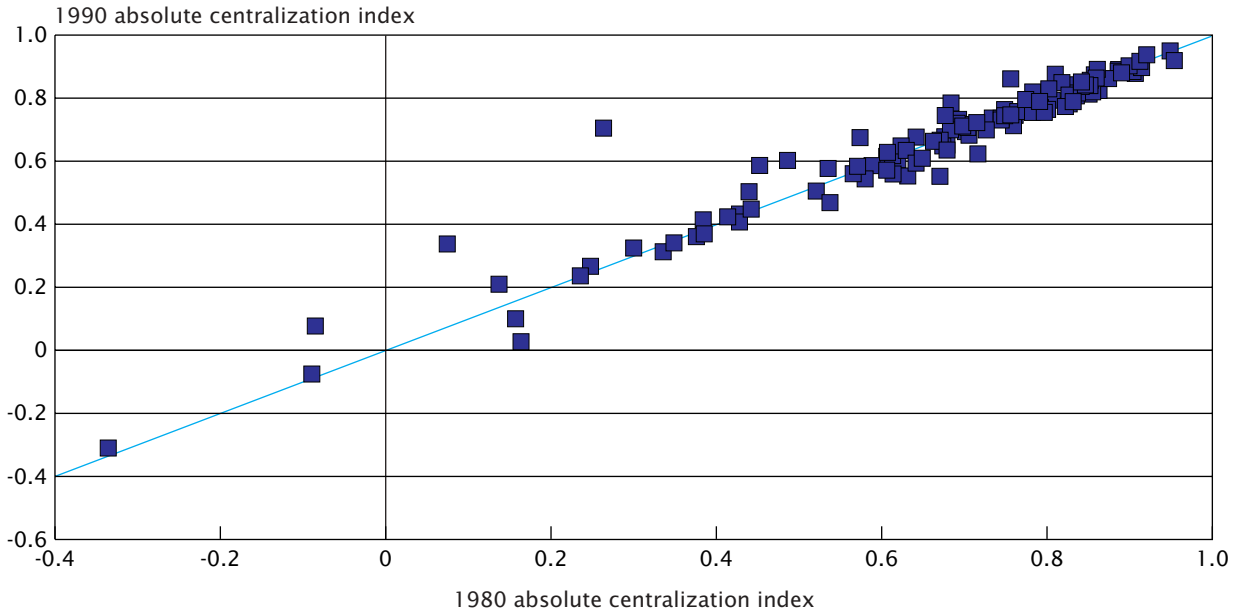
Delta Index for Hispanics for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-4g.

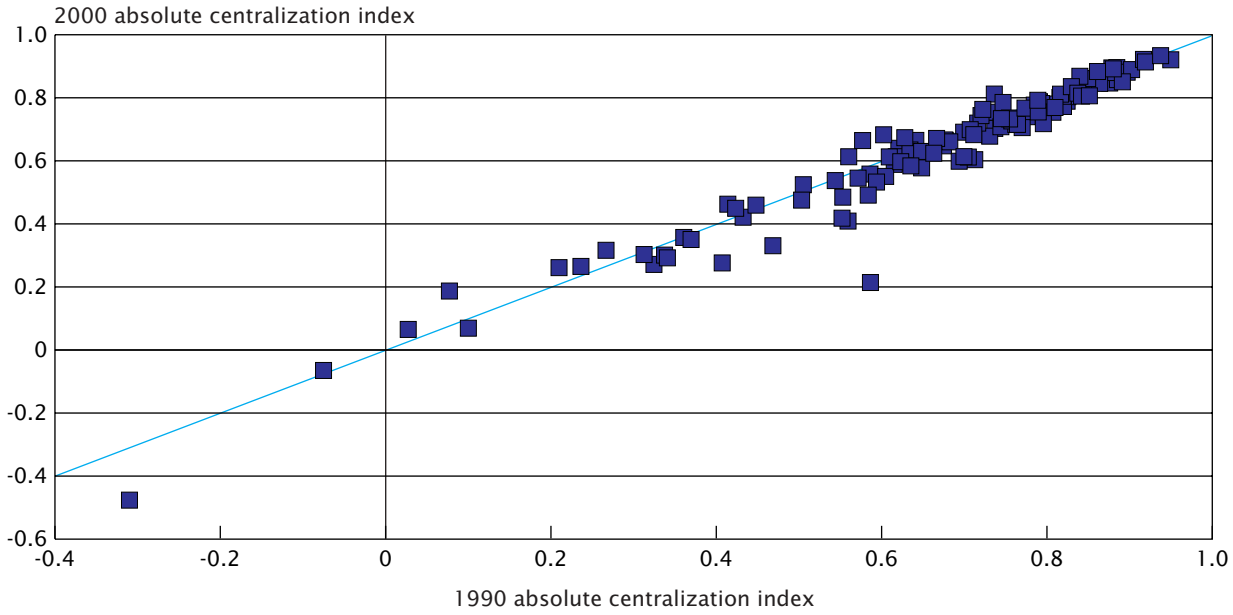
Absolute Centralization Index for Hispanics for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-4h.

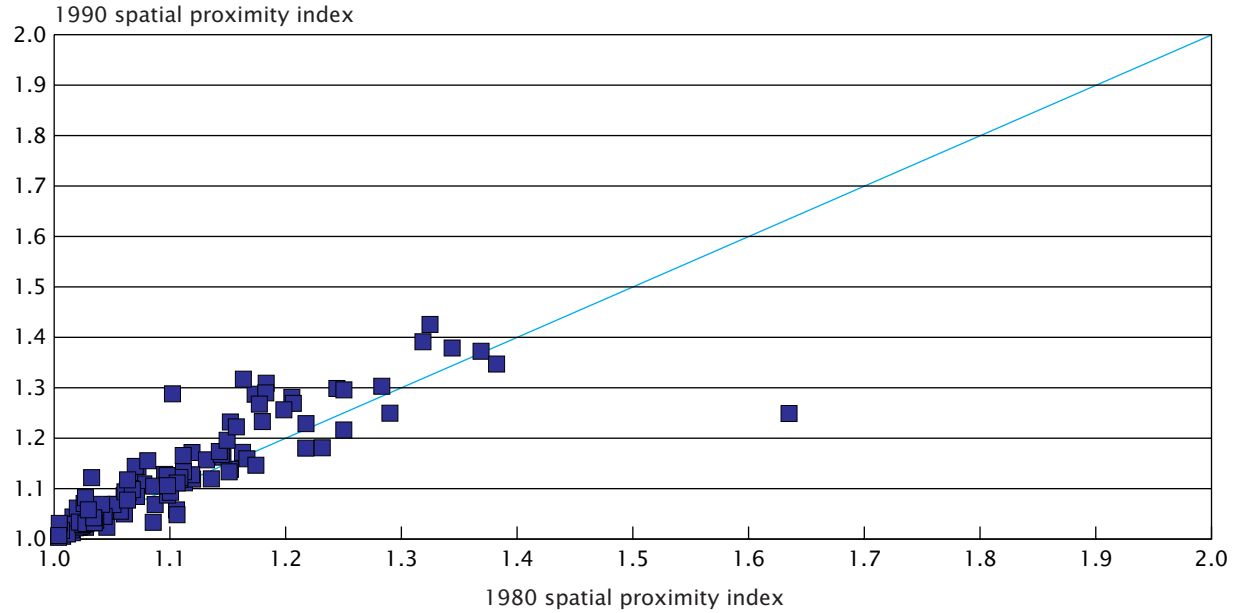
Absolute Centralization Index for Hispanics for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-4i.

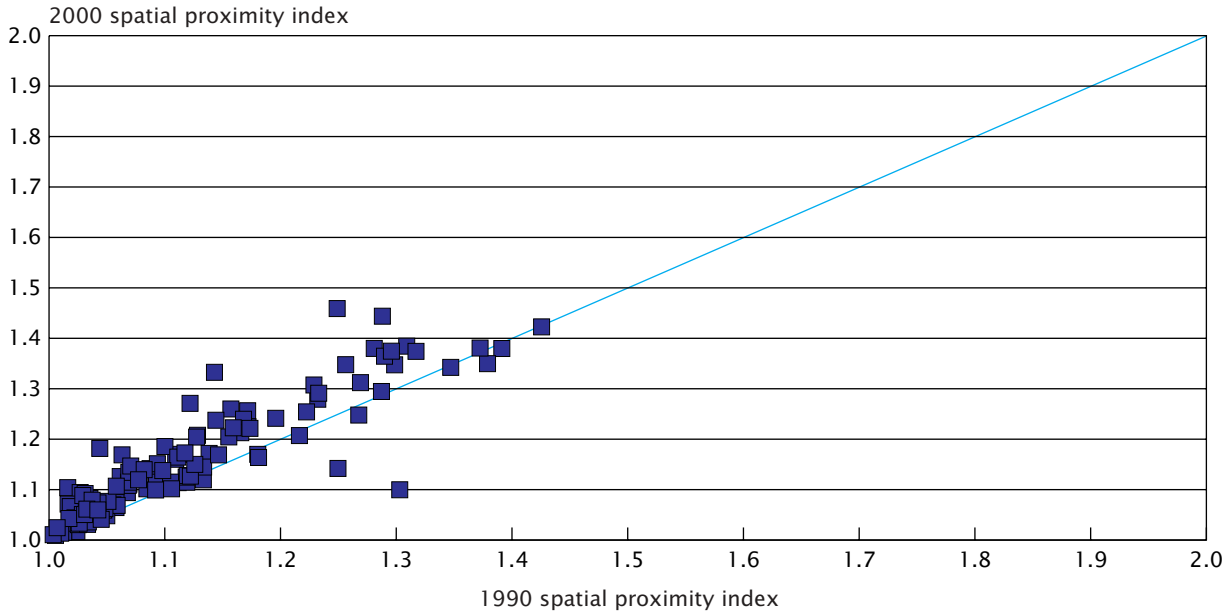
Spatial Proximity Index for Hispanics for Selected Metropolitan Areas: 1990 by 1980



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

Figure D-4j.

Spatial Proximity Index for Hispanics for Selected Metropolitan Areas: 2000 by 1990



Note: Selected metropolitan areas are those with at least 10 tracts and 3 percent or 20,000 or more Hispanics or Latinos in 1980. The reference group is White non-Hispanic. See Chapter 2 for a discussion of race and Hispanic origin definitions.
Source: U.S. Census Bureau, Summary File 1, 1980, 1990, and 2000.

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