

# Urban Sprawl and Neighborhood Racial Change: Patterns of Racial and Ethnic ‘Sprawl’ Amid Growing Diversity, 1990 to 2010

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**Abstract** Over the last half century, the literatures on racial segregation and urban sprawl have largely been kept separate. This paper aims to join these literatures by conducting an analysis of the 52 largest US metropolitan areas to study the ways in which populations in four race/ethnicity categories—white, black, Asian and Latino—have undergone change in their relative distributions with respect to the urban core (i.e. change in their ‘sprawl’) between 1990 and 2010. Findings indicate that nearly all large metropolitan areas, even those facing population stagnation or loss, have undergone a shift in their population outwards from central neighborhoods towards their peripheries. Over these two decades, many inner ring suburbs have increased in racial and ethnic diversity; however, these gains are diminished as one travels further out from the core to newer suburbs and exurbs whose population growth has mainly been constituted by whites, and to some extent, Latinos. These results provide a framework for assessing the future trajectories of neighborhood change, urban spatial development and segregation, and demonstrate the necessity for understanding these processes in terms of demography and urban growth.

**Data and Methods** Data are observed at the tract level and come from 1990, 2000, and 2010 US Censuses and are subset to include all tracts in the 52 largest metropolitan areas: 1999 OMB-defined metropolitan statistical agglomerations (MSAs) with population over 1 million in 2000. The data are harmonized to have the same geography (2000) and use the same racial categories (e.g. multi-race

categories from the 2010 Census are collapsed into single race categories). Each metro area is then broken out into OMB-defined primary metropolitan statistical agglomerations (PMSAs), and each PMSA is assigned a central tract based on its population distribution. All tracts are then scored on how close they are to the central tract relative to the median tract in the PMSA. Figure 1 (left) shows the result of this method in the Detroit-Ann Arbor-Flint MSA: red tracts are closer to the center than the median tract; orange tracts are between 1x and 2x the distance to the center than the median tract; and so on. Standardizing the measure of centrality by median tract distance allows for comparison across differently sized metros. The following examines changes in the distribution of the four largest race groups (white, black, Latino and Asian) along this dimension of relative sprawl.

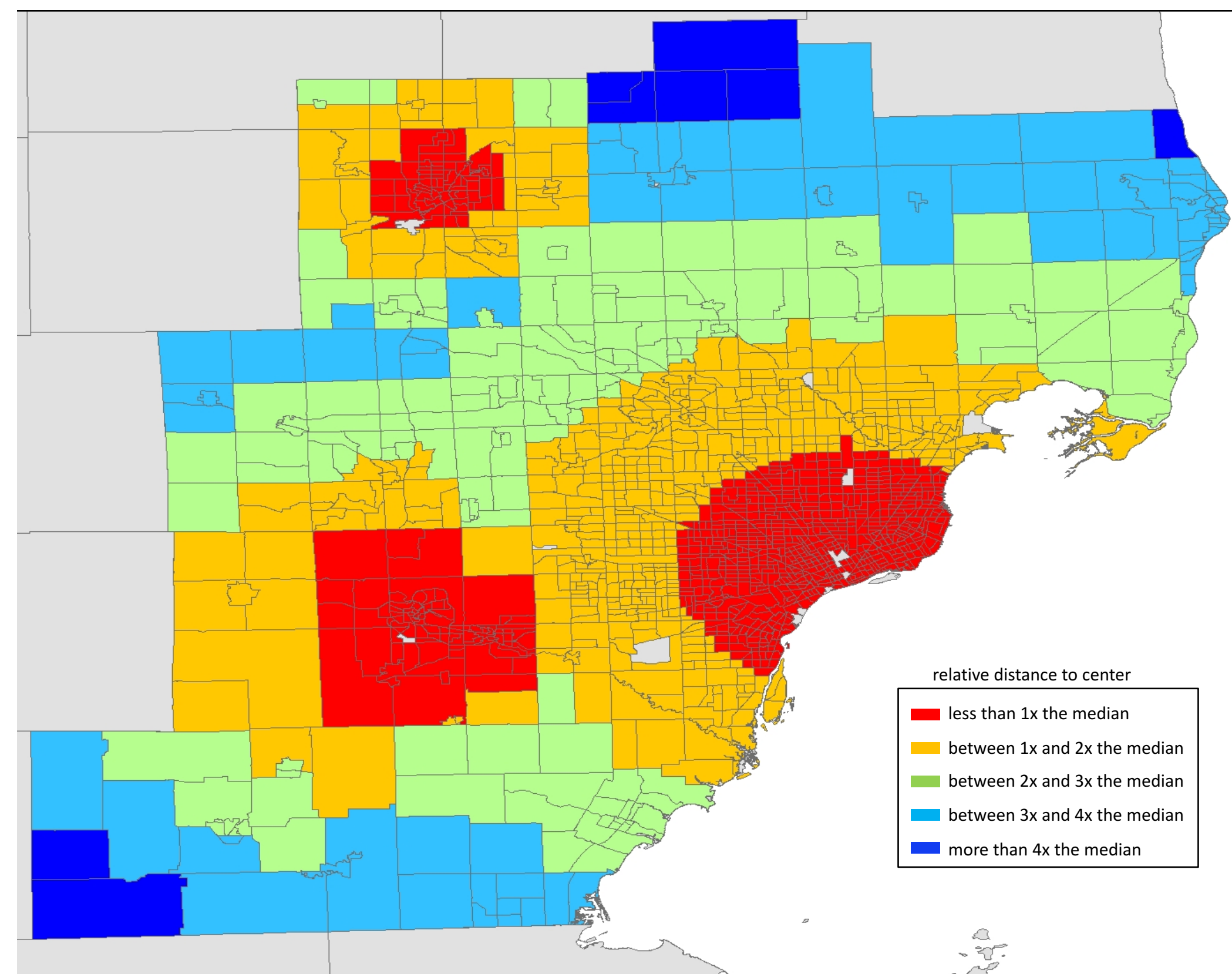


Fig 1. Census Tracts (2000) in Detroit-Ann Arbor-Flint MSA coded by relative distance to center

**Evidence of sprawl** Figure 2 (left) shows that while population has grown in large US metros between 1990 and 2010, this growth has occurred disproportionately in more peripheral tracts (relative distance to center > 1), thus resulting in a shift in overall distribution of population away from the center. Figure 3 (left) breaks out the analysis from Figure 1 by four race categories and demonstrates that all four groups have experienced a shift in their overall population distributions away from the center. Whites were the least central group in 1990 and remained so in 2010. African Americans experienced the greatest shift towards the periphery but are still the most centrally located.

**Change in terms population gain/loss** A more nuanced story emerges when population change is decomposed into gain and loss by tract between 1990 and 2010. Figure 4 (right) shows the distribution of tracts relative to the center that gained population on the positive y axis and that lost population on the negative y axis. Despite strong population growth over the period, a considerable number of tracts lost population. These tracts were located overwhelmingly in central locations. Figure 5 (right) repeats this analysis by race category. Both Whites and African Americans experienced population loss in central tracts while at the same time experiencing population gain in more peripheral tracts. Latino, Asian and Black population growth largely mirrors the distribution of white population loss.

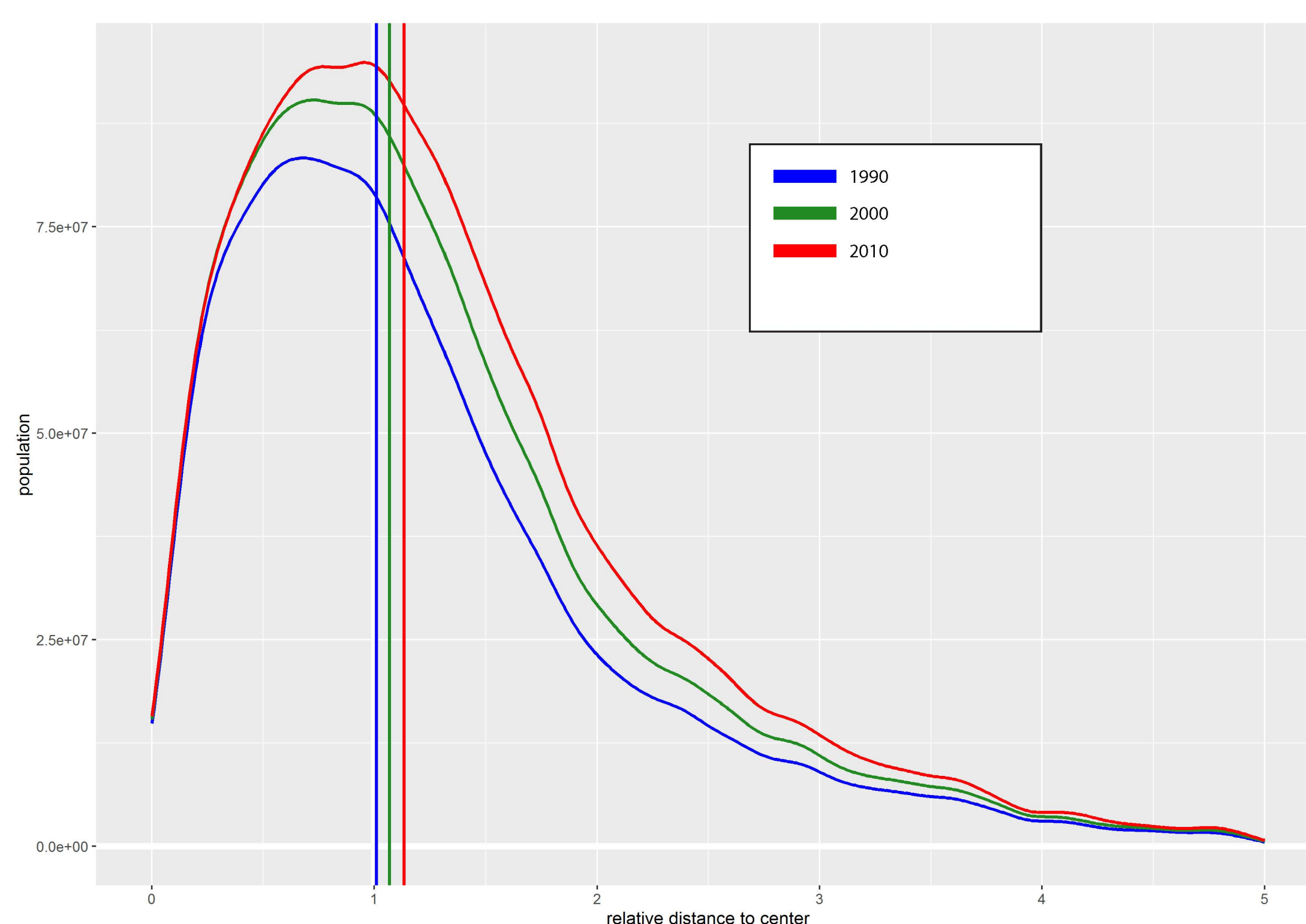


Fig 2. Distribution of US urban population by relative distance to center

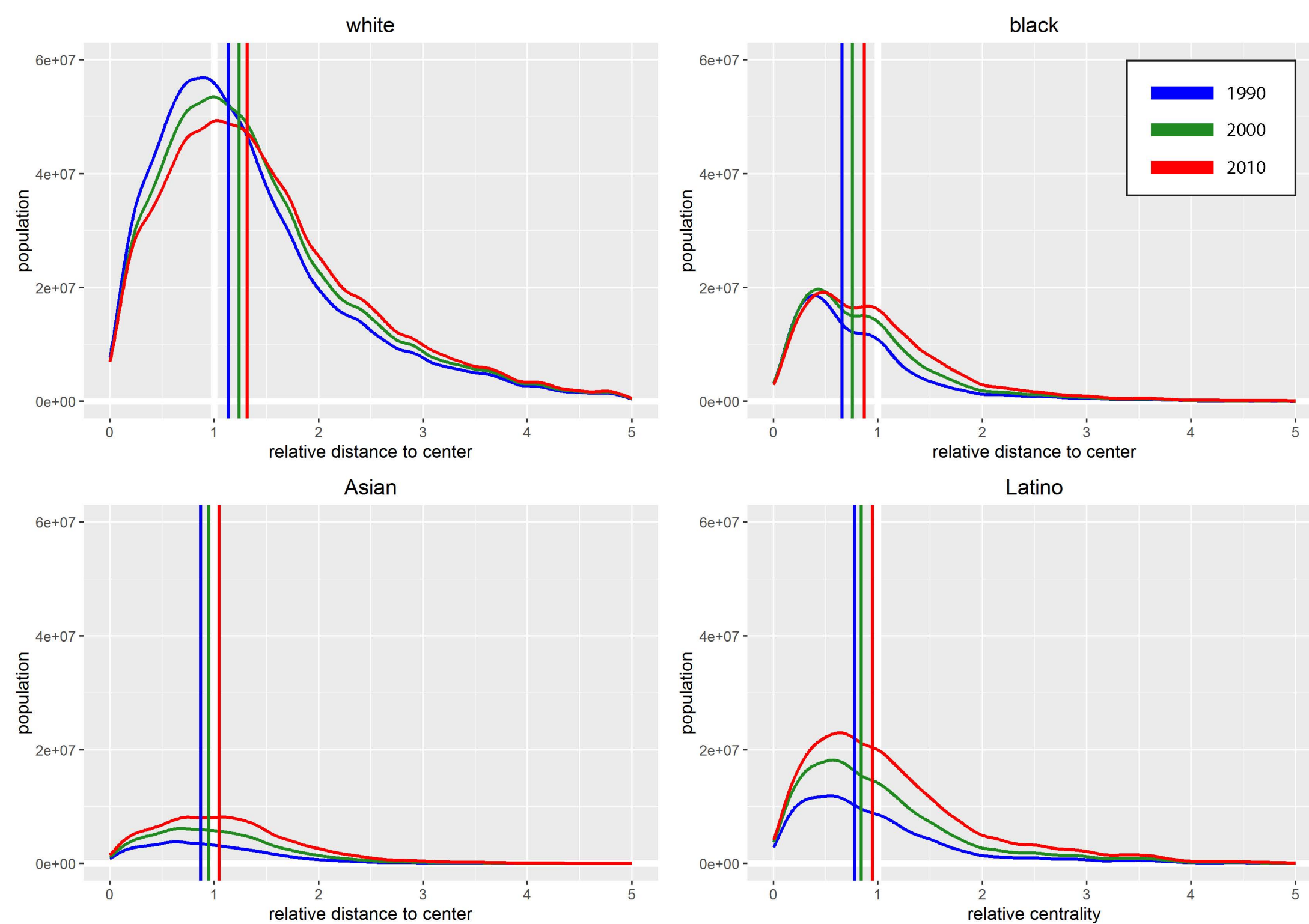


Fig 3. Distribution of US urban population by race by relative distance to center

**How universal are the patterns observed?** Not all metro areas are alike in terms of age, growth, geography or demographic trajectory. As such, it is necessary to explore whether the general pattern observed in Figure 5 is observed within metros. Figure 6 (right) repeats the analysis from Figure 5 within nine different metros selected for their variation. It appears that several of the patterns hold: most metros experienced white and black population loss in more centrally located tracts, while white population gain generally occurs in most peripheral areas. This is true even in Los Vegas and Charlotte, two rapidly growing metros. There are, however, particularities that should be further examined.

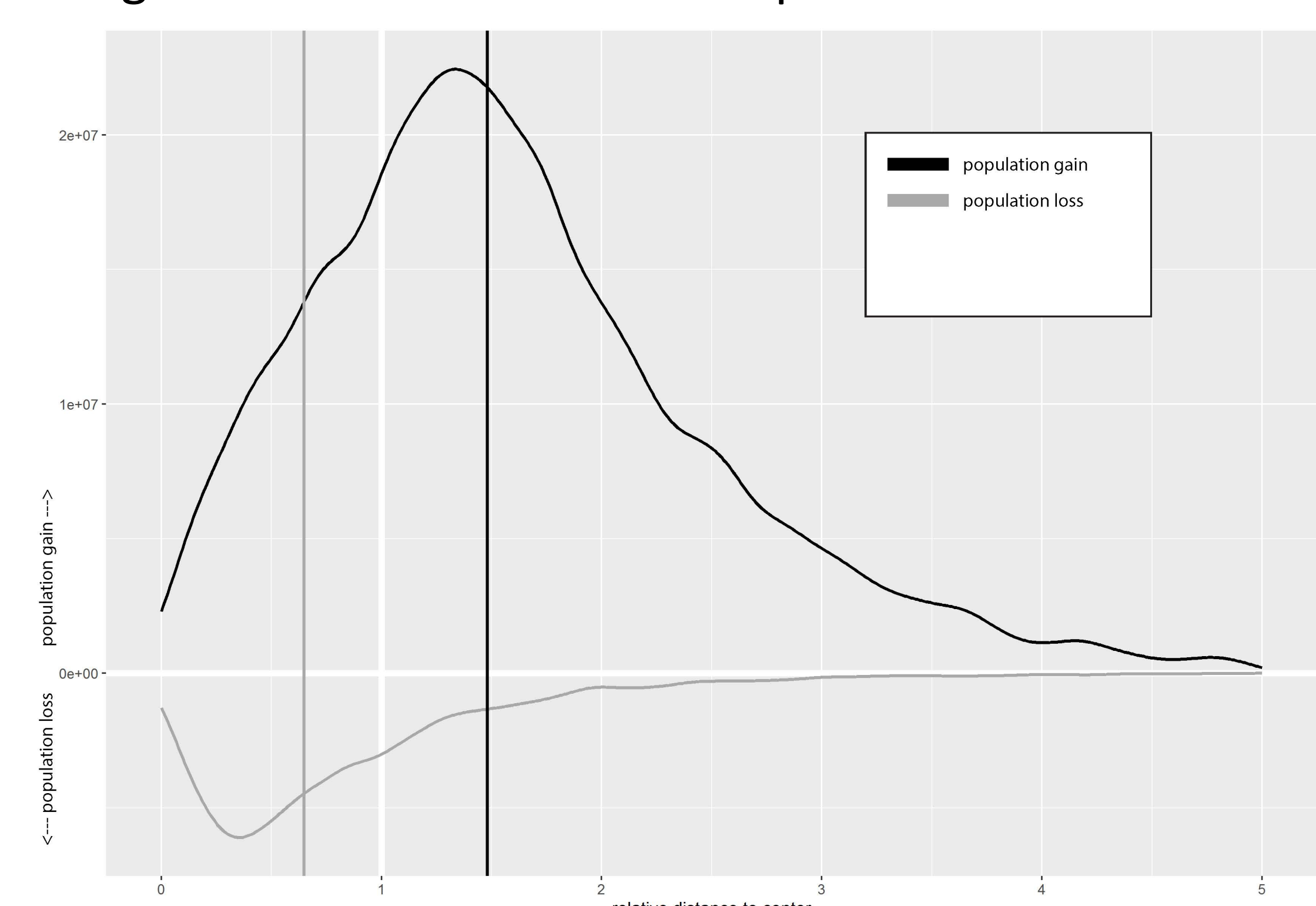


Fig 4. Population change by relative distance to center

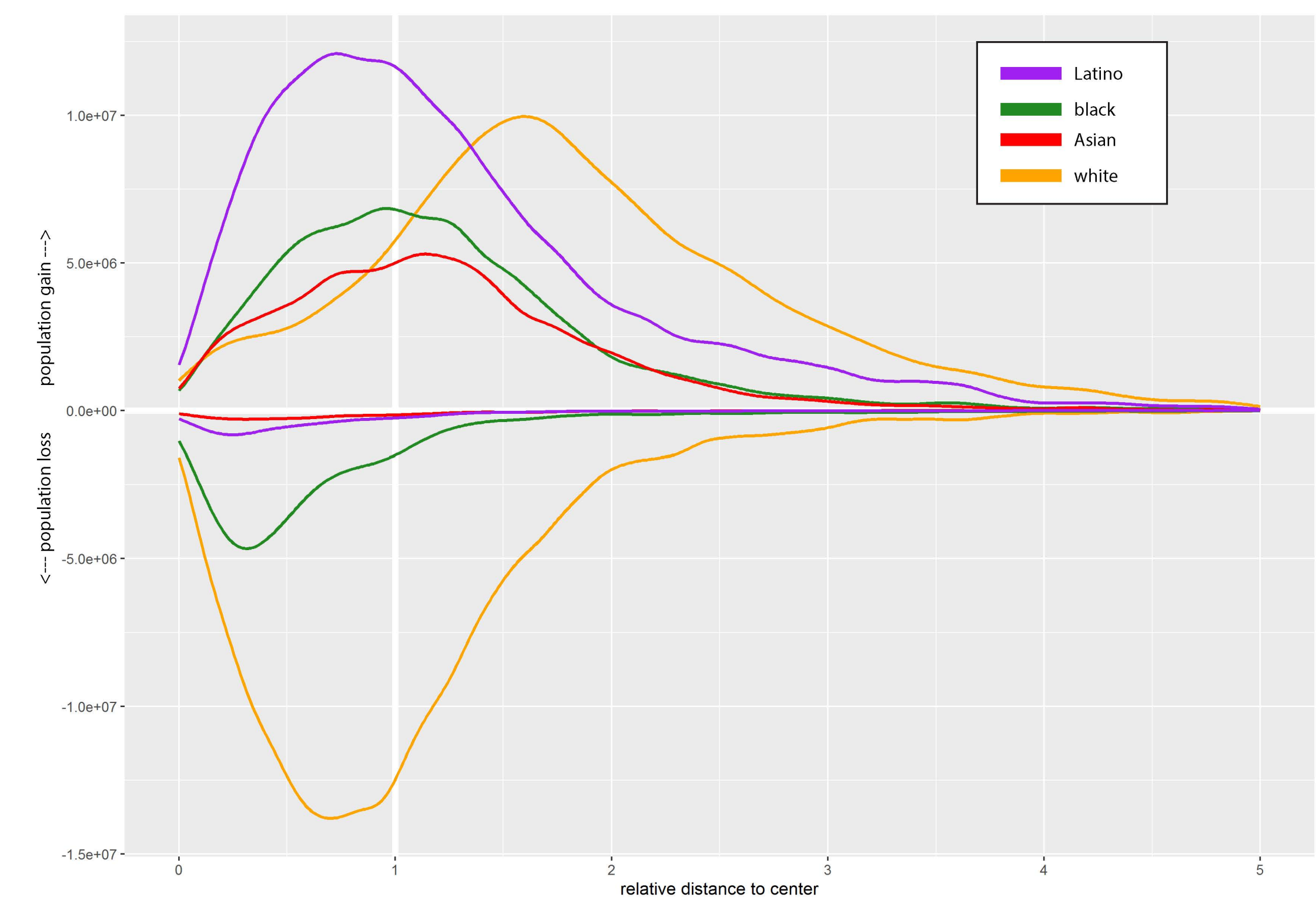


Fig 5. Population change by race relative distance to center

**Conclusions** Between 1990 and 2010 the lion’s share of population growth in large metropolitan areas occurred among non-white groups. While the population distribution of non-white groups has shifted toward the periphery in most metropolitan areas, ongoing sprawl of whites has made it so whites remain the least central group. When considered alongside small population growth of whites in large metro areas, this trend suggests a combination of residential mobility and mortality (or aging out) of central neighborhoods among whites. Though more work needs to be done on the precise demographic processes at work, it is clear that the peripheral mobility of whites will continue to dampen the prospects for certain kinds of racial residential diversity.



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