Are central cities poor and non-white?

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ABSTRACT

For much of the 20th century, America's central cities were viewed as synonymous with economic and social hardship, and often used as proxy for low-income communities of color. Since the 1990s, however, many metropolitan areas have seen a resurgence of interest in central city neighborhoods. Theoretical models of income sorting lead to ambiguous predictions about where households of different income levels will live within metropolitan areas. In this paper, we explore intra-city spatial patterns of income and race for U.S. metropolitan areas, focusing particularly on the locations of low-income and minority neighborhoods. Results indicate that, on average, neighborhood income increases with distance to city centers for blacks, Hispanics and Asians. Income among non-Hispanic whites is uncorrelated with distance to CBD. All MSAs exhibit spatial clustering of poor and non-white neighborhoods. Economic sorting within high-minority neighborhoods is apparent for all racial groups.

1. Introduction

During much of the 20th century, America's urban areas displayed clear patterns of income and racial sorting: neighborhoods near the city center tended to house lower-income and non-white residents, while affluent, mostly white households located in outlying neighborhoods and suburbs. This spatial income pattern is so prevalent in the U.S. that the terms "central city" and "inner city" are often used as proxies for neighborhood socioeconomic status as much as geographic location (Jargowsky 1997; Wilson 1987). And yet, both empirical evidence and urban theory suggest that other spatial equilibria of income and race are possible. For instance, many European cities have relatively rich centers and poorer, racially heterogeneous suburbs. Although urban economic theory predicts that households will cluster by income, most models yield ambiguous predictions about the relationship between income and distance from city center, and are less predictive about sorting by race.

In this paper, we examine two questions about spatial patterns of income and race within U.S. metropolitan areas. First, is proximity to the Central Business District (CBD) correlated with neighborhood income and racial/ethnic composition? Second, how spatially concentrated are low-income and minority neighborhoods, independent of their proximity to the CBD? Using tract-level census data for 24 large metropolitan statistical areas (MSAs), we present descriptive statistics of the correlation between income, race, and distance to the CBD.[1] We also explore the extent of clustering or spatial concentration among poor and minority tracts. Some results are presented for all 24 MSAs, to identify common patterns. We present more detailed graphical analysis for four MSAs with different underlying spatial structures and varying racial composition: Atlanta, Detroit, Los Angeles and Washington DC.

Our paper makes several contributions to the literature on income sorting and residential segregation. First, we examine spatial correlations between income and proximity to the CBD separately by racial group.[2] To our knowledge, this is the first paper that documents different spatial patterns of income across races. Second, our paper adds to the relatively small housing literature on Hispanics and Asians, as well as blacks and whites. Third, our concentration measures compare the extent of economic and racial clustering at a geographic scale above the

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census tract; most prior work on racial segregation focuses on tract-level measures.

Several stylized facts about income, race, and location emerge from the results. We find that distance from CBD is positively correlated with neighborhood income for blacks, Hispanics and Asians, but for whites the correlation is essentially zero. Poverty rates decline with distance to the CBD for all races. On average, tracts near the CBD have larger minority population shares, but these patterns vary by racial group and city. There is a high degree of neighborhood economic and racial clustering among immediately adjacent census tracts. Spatial clustering of minority tracts is prevalent for both low-poverty and high-poverty tracts.

The remainder of the paper is organized as follows. Section 2 provides an overview of the previous literature, and Section 3 describes the data and empirical approach to our two research questions. Section 4 presents results of descriptive statistics and graphical analysis. Section 5 discusses implications and concludes.

2. Previous literature

This paper adds to a large literature in urban economics that explores how and why households of different income, races, and preferences will sort across space. Predictions from theoretical models are often ambiguous about the relative locations of high- and low-income households. Similarly, prior empirical research has documented multiple equilibria for household sorting by income within a city, and posited some hypotheses for these different outcomes.[3] The standard urban model (SUM) predicts that firms will outbid households for land near the CBD and households will outbid firms for land near the urban fringe (Alonso 1964; Brueckner 1987; Mills 1967; Muth 1969). Households of varying incomes could sort into two different equilibria, depending on the relative income elasticities for land (parcel size) and commuting costs: if high-income households have a stronger distaste for commuting, they will outbid low-income households for central locations, but if high-income households have a stronger preference for large houses, they will locate farther from the CBD (Duranton and Puga 2015). Spatial sorting depends therefore on commuting costs, which will vary across cities and over time because of congestion, technology, and investments in transit infrastructure. In cities where transportation costs from the suburbs to the CBD are relatively high, and where a high share of jobs are near the CBD, affluent households are more likely to live near the city center. Conversely, the absence of reliable public transportation in many suburbs may deter lower income households from moving away from city centers (Glaeser et al., 2008).

Income sorting is further reinforced by locally-provided public goods and other location-specific amenities. High income households will have greater ability/willingness to pay for local public goods, such as schools and public safety, the value of which is capitalized into higher housing values (Tiebout 1956). When coupled with zoning restrictions on housing density, this leads high- and low-income households to sort into different political jurisdictions with different tax and service levels (De Bartolome and Ross 2003). Similarly, housing values will reflect the quality of local private amenities, such as cultural institutions, restaurants and shops, and natural amenities, such as waterfront access (Lin and Lee 2015), as well as the age and quality of the housing stock (Brueckner and Rosenthal 2009; Rosenthal 2007). Differential willingness to pay for public goods and private amenities predicts separation of households by income, but not does directly predict where different income groups will live relative to city centers. Traditionally, European city centers have had higher levels of cultural amenities than U.S. cities, resulting in more high-income European households choosing to live in city centers (Brueckner et al., 1999; Koster et al., 2014).

The various channels through which households sort by income all relate directly to differences in ability to pay for housing. By contrast, spatial variation in neighborhood racial composition may reflect a number of factors. One mechanism for racial sorting within U.S. cities is the presence of long-standing gaps in income and wealth between racial groups, particularly between non-Hispanic whites relative to blacks and Hispanics (Blau and Graham 1990; Hedman and Galster 2013). Moreover, an extensive literature has documented racial discrimination in the housing and mortgage markets (Bayer et al., 2016; Cutler and Glaeser 1997; Ellen 2000; Kain 1968; Massey and Denton 1993; Munnell et al., 1996; Ross and Yinger 2002; Turner and Mikelsons 1992; Yinger 1991). Most of the literature on racial income gaps and housing discrimination focuses on differences in outcomes between African-Americans and non-Hispanic whites; there is a small but growing literature looking at wealth and housing gaps for Hispanics (Bayer et al., 2016; Ross and Turner 2005).

Spatial patterns of income and race within metropolitan areas can and do change over time, due to changes in employment location, transportation costs, amenities, and public policies. From the 1940s through the 1980s, high income and white households disproportionately moved from center cities to suburbs and exurbs (Downs 1998; Mieszkowski and Mills 1993). Beginning in the 1990s, some U.S. cities have seen a return by higher-income households into central neighborhoods and an increasing "suburbanization of poverty" (Baum-Snow and Hartley 2016; Couture and Handbury 2016; Ellen and O' Regan 2008; Ellen and O' Regan 2011; Kneebone and Holmes 2016; McKinnish, Walsh and White 2010). Subsidies for affordable housing, housing finance policies, urban development and transportation policies have influenced spatial income patterns. French cities have tended to build subsidized social housing on the urban fringes (*banlieues*) while most public housing in the U.S. was built in central cities (Whitehead and Scanlon 2007). While federal policies are likely to influence spatial patterns of income similarly across cities within a country, state and local policies – along with locally-specific historical factors – contribute to differences across metropolitan areas. We focus in this paper on current spatial patterns, and cannot address how specific policies shaped spatial sorting. However, it is valuable to consider both the historical precedents for the current patterns and the fact that spatial patterns will not necessarily remain fixed going forward.

3. Empirical approach and data description

This paper explores the spatial patterns of low-income and minority neighborhoods across U.S. metropolitan areas. Using tract-level data for 24 large MSAs, we examine the correlation between proximity to the CBD, income and poverty by race, and neighborhood racial composition. We then explore the degree of spatial clustering among poor and non-white neighborhoods, and economic sorting within high-minority neighborhoods. The analysis is descriptive and intended to identify patterns; we do not test for causal relationships, but in the paper's final section we outline several hypotheses that could be explored in future work.

3.1. Geographic sample selection

The analysis presents results for 24 large MSAs, selected to provide diversity across several dimensions, including geographic region (at least one MSA from each of the nine Census divisions), population size, average income, and racial composition. The list of sample MSAs and summary characteristics is shown in Table 1. Using 24 diverse MSAs allows us to explore the range of spatial-income-race correlations across the U.S., and to ask whether any regional patterns among these MSAs are apparent. Prior research suggests that residential location patterns will vary based on underlying MSA characteristics, including topographical features (water bodies and mountains), degree of employment centralization, and MSA-level racial composition (Giuliano and Small 1991).

We follow much of the urban economics literature in defining

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[3] Rosenthal and Ross (2015) summarize much of the theoretical and empirical literature on this topic.