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Spatial Mismatch for Low-Wage Workers in post-Katrina New Orleans

A Thesis

Submitted to the Graduate Faculty of the
University of New Orleans
in partial fulfillment of the
requirements for the degree of

Master of Arts
in
Urban and Regional Planning

By

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B.A. Loyola University New Orleans, 2005
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Abstract

The theme of this study is spatial mismatch, a concept that gave rise to an ever-expanding body of research concerned with how and why residential and employment distributions have shifted within cities and across metropolitan areas. The concept grew out of John F. Kain's research on how racial discrimination and segregation affects the spatial patterns of people/subgroups and jobs in the postwar American urban environment. Specifically, "Housing Segregation" posits that housing-market discrimination is at the root of increased unemployment among inner-city, nonwhite workers; concurrently, the pace and volume of decentralization (of residents and employment) from central-cities reinforces low-income, overwhelmingly African-American isolation and immobility. This study contributes to the New Orleans literature by providing a pre- and post-Katrina snapshot of spatial mismatch. The analysis addresses research questions aimed at gauging the extent to which mismatch and job-isolation have changed for poor workers in the New Orleans metro area since Hurricane Katrina.

Keywords

Spatial mismatch; employment distribution; residential distribution; Hurricane Katrina

Introduction

The central theme of this study is spatial mismatch, a concept that evolved over the course of the twentieth century and gave rise to an ever-expanding body of research concerned with how and why residential and employment distributions have shifted within cities and across metropolitan areas. The concept of spatial mismatch grew out of John F. Kain's (year) research on how racial discrimination and segregation affects the spatial patterns of people/subgroups and of jobs in the postwar American urban environment. Specifically, in his article "Housing Segregation", Kain posits that housing market discrimination is at the root of increased unemployment among inner-city, nonwhite workers; concurrently, the pace and volume of decentralization (of residents and of low-skill/low-wage employment) from central-cities reinforces low-income, overwhelmingly African-American isolation and immobility. Spatial mismatch theory holds that social and economic hardships (e.g., physical isolation, social exclusion, and poverty) faced by low-income and overwhelmingly black Americans residing in central cities can be directly linked to housing segregation (Kain "Housing Segregation, Negro Employment, and Metropolitan Decentralization"). Kain's work coincided with the beginning of a period of widespread urban decay in central-cities throughout the U.S.; the hypotheses therein have been contested and modified over the subsequent decades (DeVise).

The body of the spatial mismatch literature can be framed in one of two overarching contexts. First, there is a good deal of qualitative and quantitative analysis that hypothesizes as to causes and drivers of mismatch by identifying symptoms and operationalizing spatial mismatch for a given geographic unit and/or between subgroups. The prevailing methodological approaches demonstrate and quantify mismatch according to the following indicators or proxies: the extent of residential segregation; variations in duration of trip-to-work; relative household or per capita income and

comparison of earnings; distance and proximity of underemployed workers to suitable jobs; and *spatial experiments*, whereby individual-level data and *longitudinal* data are used in tandem (Houston). The second dimension of the spatial mismatch research is dedicated to evaluating the effectiveness and overall impacts of policy intervention intended to redress the chronic issues and disparities that characterize spatial mismatch.

Purpose and Significance of the Research

Following Hurricane Katrina the New Orleans metropolitan area experienced, concurrently, a contraction of its total population and a drastic decline in the total number of primary jobs; and a high volume of and tendency toward relocation and redistribution among residents and on the part of firms throughout the MSA. The disaster resulting from Hurricane Katrina, both figuratively and rather literally, presented leaders and policymakers with an unprecedented opportunity to seize the city as a social engineering experiment. Political leaders continue to encounter a number of controversial and politically-charged issues related to what are arguably the most important (and interrelated) facets of the post-disaster policymaking: spatial planning and social policy. The New Orleans metropolitan area has undergone a considerable transformation since August 2005, from catastrophe and displacement to recovery and rebuilding. But who are the winners and losers in the *new* New Orleans?

There is already a plethora of historic and post-Katrina scholarly research on black disadvantage and African-American disenfranchisement in New Orleans. However, to date no existing research draws sufficient attention to the effects of Katrina on the metro area's *low-wage* housing and labor markets. The purpose of this study is to gauge the extent to which mismatch and job-isolation have lessened or worsened for low-wage-earners living in the New Orleans-Metairie-Kenner, LA metropolitan statistical area (MSA) since Hurricane Katrina. This study contributes to the New Orleans literature, and to the literature stemming from the events of Hurricane Katrina, by providing a before-and-after snapshot of

low-wage spatial mismatch across the MSA's seven parishes. And the study contributes to the spatial mismatch literature by focusing the analysis not on the metro's African-American population but on its low-wage-earning workforce.

Questions for Analysis

Ultimately, two questions shape the data analysis for this investigation and are intended to gauge whether and to what degree spatial mismatch for the New Orleans metro's low-wage workforce has changed since Hurricane Katrina. First, do low-wage earners suffer from more or less spatial mismatch post-Katrina? I answer this by asking (1) whether low-wage-earners in parishes with higher proportions of low-wage jobs, relative to overall jobs, suffer from less mismatch post-Katrina; and (2) whether a higher number of low-wage-earner residents, relative to the number of wage-earner residents overall, increase mismatch for low-wage workers by parish. Secondly, do low-wage-earners in suburban locations suffer from greater degrees of mismatch than those residing in the central-city?

An overview of the origins of spatial mismatch hypothesis provides historic background on the concept and relates spatial mismatch theory to the urban development of New Orleans. Next, the study examines the long-term effects of spatial mismatch and various mechanisms for addressing symptoms of spatial mismatch. The study then focuses on the research design and justification for the methods of analysis. Finally, the study measures post-Katrina mismatch for low-wage-earners in the New Orleans MSA and seeks to explain post-Katrina outcomes to date.

Systemic Roots of Spatial Mismatch

Primarily in an effort to resuscitate the finance and construction sectors of the economy, the New Deal administration established the Home Owners Loan Corporation and subsequently the Federal Housing Administration (Mertins; Gotham). Initially, regardless of fiscal capacity or credit worthiness, black Americans were excluded from homeownership, and racial covenants prohibiting settlement by blacks in new suburban communities were pervasive (Jones-Correa). Black mobility was later constrained by way of *redlining*, a practice whereby lenders systematically restrict black home loan applicants to predominantly low-income, minority residential areas. Exclusionary lending practices largely evolved in response to the first Great Migration and were codified by the New Deal policies under the FDR Administration (Gotham): the Federal Housing Administration (FHA) promoted, endorsed and lay the groundwork for exclusionary land-use regulation and explicitly-unconstitutional lending practices that are the primary drivers of economic disparities within U.S. metropolitan areas that emerge by the latter part of the 20th century. The concept of exclusionary zoning has emerged as an integral component in perpetuating residential segregation by race and ethnicity as well as income that typify the demographic contrast between U.S. inner- and central-cities and the suburban sprawl that now surrounds their peripheries. The black population boom in urban centers “established the basis for the development of various legal devices, including zoning...”(Gotham 300-01). Furthermore, policy dictating the proliferation of public housing that occurred across the U.S. resulted in exclusively siting developments in central-cities; following the conclusion of WWII, inner-city public housing became increasingly and overwhelmingly occupied by nonwhites and especially by black Americans.

Even before the dominance of car culture and leading up to the Depression Era, an influential political lobby comprised of banking professionals, auto and oil tycoons, and rubber manufacturers successfully catalyzed the abandonment of seemingly 'outdated' streetcar and trolley systems in cities across the country in favor of with buses (Vuchic). Subsequently, the 'auto-petroleum-construction hyper-sector' served an essential role in increasing economic prosperity and stability in the U.S. following the conclusion of WWII (Mertins). The profitability and indispensability of this sector to the national postwar economy meant that motorized transit (specifically, private motorized transit) rose to a position of preeminence on the federal transportation policy agenda. But by the 1970s controversy over the environmental and social impacts of federal, state and local planning on the urban areas across the country grew feverishly. One author goes so far as to cite highway building as "the most powerful direct Federal action that has contributed to metropolitan decentralization and central city decline" (Rabin).

More importantly, motorist-centric urban planning has seriously crippled the mobility of those in poverty – especially those residing within depressed central-cities – who have limited or no access to private vehicles. The combination of *de facto* and *de jure* racial segregation, local land-use and federal transportation planning, and bifurcated housing and lending policies brought about the disenfranchisement and immobilization of poverty-stricken, overwhelmingly black city dwellers and fueled metropolitan decentralization. In turn, social scientists observed the effects of segregation and suburbanization on socioeconomic isolation and employment opportunities and outcomes for those whose housing choice was increasingly constrained to the core city.

“Housing Segregation”

At a point in history when urban disinvestment and black isolation reached near-critical levels (Mertins), “Housing Segregation” presented an examination of central-city employment in Detroit and Chicago. Kain hypothesized that black employment outcomes are adversely impacted by housing market segregation, which “(1) affects the distribution of Negro employment and (2) reduces Negro job opportunities” (176). “Housing Segregation” points to the work of Taeuber and Taeuber on segregation indexes which reveals a growing tendency toward extreme residential segregation of major U.S. metro areas and demonstrates high degrees of nonwhite isolation and concentration in Detroit and Chicago (178). With data drawn from the 1956 Chicago Area Traffic Study and the 1962 Detroit Area Traffic Study, the “Housing Segregation” research design designates 98 workplace zones across which Kain measures employment distribution (180). The sample population consists of all workers employed in the 98 areas.

In the statistical analysis, the percentage of employed residents who are black in a given zone is referred to as the “residence ratio”, and the percentage of workers who are black in a given workplace zone is referred to as the “employment ratio” (180). Furthermore, Kain uses the residence ratio as the dependent variable against three independent variables: distance from the nearest ghetto to boundary of black residential area; distance from the major ghetto to boundary of black residential area; and the mathematical difference between the first two variables (182). This yields an estimate of black job loss, calculated as a comparison between actual data and the estimated data that would result from an *even* jobs-to-people distribution or ratio across the respective study areas in Detroit and Chicago (with populations of roughly 938,000 and 1.8 million, respectively) (190). Kain focuses on occupational category by worker race, with income group categorizations based on predetermined industrial and occupational classifications, and by distance of employment from the center of the city’s major ghetto (187).

The results indicate that black workers in the Detroit metro area fare slightly better than their counterparts in Chicago, in being less constrained by housing in Detroit. And despite having a population nearly half the size of Chicago's, not only is Detroit's ghetto "larger and more extensive" than Chicago's, but Detroit also contains "more and better-located secondary ghettos", and Kain concludes that, in general, Detroit suffers from a "lesser degree" of racial residential segregation ("Housing Segregation" 190). For example, "Nonwhites were an estimated 4.6 per cent of all Chicago clerical workers in 1956. Yet they were 78 per cent of all clerical workers employed" in one ghetto workplace zone alone (186).

The data point to Chicago as a prototypical postwar American city: the postwar residential immobility of inner-city blacks in Chicago was coupled with huge disparities in employment change between the city and its suburbs (192). For example, between 1948 and 1963, the Chicago metro area saw the number of wholesaling sector jobs increase by 27,000 while the Chicago's central city lost roughly 17,000 wholesaling jobs. And from 1950 to 1960, trends reflect little to no job growth in the retail sector for the Chicago metro area, but central-city retail employment fell by 40,000 jobs.

Between 1947 and 1963 the number of manufacturing jobs in Chicago increased by 2,000, but the number of manufacturing jobs located in the central city declined by 180,000; at the same time, the distance from the city's central ghetto to jobs in the manufacturing sector had begun to incrementally *increase* (194). However – at least during the 1950s decade – it appears that the exodus of white Chicago residents occurred at a faster rate than did the departure of black jobs from the central-city. Nonetheless, the decline in total manufacturing jobs over this period (3,000) is still less than the decline in black employment, which Kain estimates to be between 4,000 and 7,000 (195). Further complicating matters, the growth of the Chicago MSA's black labor force increased at a much higher rate (by more than 31 percent) between 1950 and 1960 than did the metro area's white labor force, which grew by less than four percent (196).

Twentieth-century metropolitan changes played out in New Orleans somewhat differently from cities like Detroit and Chicago. In “River Trade”, Larsen observes that the city of New Orleans emerged as “a symbol of quick and easy wealth: construct docks, erect warehouses, dredge rivers, harvest crops, float them down to Louisiana” (113). “River Trade” also acknowledges the degree to which the New Orleans labor market was governed by plantation dynamics: “not only was the [city’s] capital... based on the value of slaves... but it was converted into planters’ paper” (Larsen). The unsustainability of the New Orleans economy was bolstered by the institutionalization of Jim Crow following abolition and Reconstruction: systemic racial discrimination, and the disenfranchisement and marginalization of a sizeable segment of New Orleans’ population, further polarized labor-market and socioeconomic dynamics with unfavorable results for the city by the end of the 20th century. One piece of research on employment shifts in the postwar twentieth century notes a tendency whereby “new industrial traditions... take root in places different from older ones” (Knudsen and Koh 376). This is exemplified by the nature of the pre-Katrina New Orleans economy which, broadly, has always been driven by and dependent on natural resources, inexpensive labor, and outside capital. Ultimately, the lack of a diversified postwar economy left the city in shambles by the end of the 20th century (especially as compared to neighboring major metro areas like Atlanta and Houston) – despite growth within the city of New Orleans from the 1930s through the 1960s, a period in which most major U.S. cities witnessed their populations begin to shrink.

From a spatial perspective, the relatively slow pace of the city’s growth resulted from geographic limitations intrinsic to the region. It was not until the early 1900s that the Wood pump allowed the city to facilitate drainage and residential expansion into previously unsettled and undeveloped areas (Spain; Warner). Prior to this, many of the city’s residential areas did not enjoy access to basic public utilities such as sewerage and water (Landphair). Moreover, the implications of elevation and topography throughout the city were largely racial and socioeconomic in nature. Prior to

drainage innovations, there emerged a ‘nuisance-elevation’ nexus, a principle that guided residential settlement and land-use patterns: residential access was based on race and class, and areas of high elevation around the city were almost exclusively white. “Inequity in the location of neighborhoods and in the distribution of flooding burdens appears early”(Kates et al.). Before the 1920s, middle-income and affluent white residents occupied high-elevation- low-nuisance zones or otherwise nuisance-free areas of the city, located far from industrial and commercial activities located on the port¹.

From an economic perspective, the Port of New Orleans has always enjoyed the status of a major transshipment point, and antebellum New Orleans was the nation’s leading exchange and transshipment point; the city’s economy was driven by shipping and warehousing activities along the port at the edge of the French Quarter (Mosher, Keim and Franques). This is significant, because this does not necessarily translate into the city or the region exporting goods and products – it only implies that the city serves as a *site* for exchange of goods. Nonetheless, in contrast to postwar industrial cities of the northeast and the Great Lakes region after WWII, central-city employment remained stable and relatively high in many Southern cities (Mooney). In ‘newer’ cities like Atlanta, Dallas, and Houston this was largely attributed to local annexation and inner-city growth; New Orleans actually experienced outward growth during this period.

New Deal funding for public-works infrastructure led to job creation in the late 1930s and early 1940s (Gonzalez-Perez). New Orleans also became an ideal headquarters for major wartime industries, such as shipyard operations; and by 1945, the city had become the second-busiest port in the nation (R. Campanella, and Marina Campanella). The durability of the inner-city job base was also due in large part to the delay of widespread white suburbanization, which did not occur en masse until after 1960 (as a response to federally-mandated integration); the city’s white population in 1940 remained relatively

¹ The relationship between race, socioeconomic status and elevation is reflected in the variations in the pace of post-Katrina recovery across the scores of neighborhoods that make up New Orleans.

high at seventy percent white (Mosher, Keim and Franques). And the New Orleans population grew continuously throughout the first six decades of the twentieth century, reaching its peak at 627,525 residents in 1960 (Cowan). This prolonged positive rate of growth is a marked deviation from most national trends, particularly in the 1940s and 1950s, in that most major U.S. cities had already begun to *lose* population. The city outperformed its counterparts until the early 1960s and did not experience its most drastic and devastating shrinkage until the mid-1980s². The silver lining for the postwar city of New Orleans, then, was that jobs suburbanized at a much slower rate than did residents. Therefore, the spatial mismatch evidenced by Kain's 1968 research did not emerge as rapidly as in more industrialized cities.

"An Alternative Perspective"

A year following the release of "Housing Segregation", Joseph D. Mooney's research on spatial mismatch demonstrates the importance of and degree to which variations in quantitative and qualitative methodologies influence research outcomes. "An Alternative Perspective" (Mooney) relies on data for the 25 largest metro areas to estimate how the exodus of jobs from central-cities affects job access for black working residents. Whereas Kain's work measures the impact of neighborhood racial composition on black employment outcomes by workplace zone in Detroit and Chicago, Mooney's analysis uses an *accessibility index* (calculated by dividing the number of nonwhite city residents who commute to the suburbs by the number of nonwhite working city residents). The author (1) finds that relative to aggregate demand, geographic isolation does *not* explain inner-city job outcomes, and (2) attributes suburban employment growth to the attractive "age of capital" (e.g., modern infrastructure

² In fact, between 1940 and 1989, the majority of states comprising the 'Deep South' did not even experience 100-percent employment growth Daniel C. Knudsen and Taekyung Koh, "Assessing the Regulationist View of History: An Analysis of Employment Change in America, 1940-1989," *Economic Geography* 73.4 (1997). Author and year is sufficient—include the full information in the bibliography.

bolstered by mortgage-lending and highway development) outside of cities – rather than neighborhood racial composition (310).

Contrary to Mooney’s arguments, the suburbanization of jobs and of low-skill employment in the New Orleans metro area was a gradual process – and the postwar growth of New Orleans’s suburbs can be attributed to residential growth, rather than the redistribution of employment. Highway and infrastructure development in and around the city was aimed at facilitating residential suburbanization; in fact, the city of New Orleans and not the suburbs was the target of postwar job growth. The 25-year period following New Orleans’ population peak was marked by improved economic vitality and central-city revitalization, on the one hand, and increasing socioeconomic disparities on the other (R. Campanella, and Marina Campanella; Lewis; Mosher, Keim and Franques).

Many factors contributed to the gradual decline of one of America’s most influential and historic cities, despite the fact that – unlike many U.S. cities – saw continued population growth all the way through the 1960s. The first challenge was the aging of the Port of New Orleans, whose facilities grew increasingly outdated. Lacking a significant number of jobs in the industrial and manufacturing sectors, New Orleans’ increased reliance on foreign trade coincided with advances in maritime technology that both increased the capacity of maritime vessels and resulted in decreased volume of port traffic. The declining postwar economic prosperity and significance of the port coincided with the declining importance of rail and the gradual dominance of highways and trucks on the distribution of commercial goods.

Another development outweighing the redistribution of low-wage employment were the local and regional political elections of the early 1960s, which were marked by segregationist platforms and figureheads (Leavitt). School-districting worked to solidify the racial makeup and poor quality of the

City's public school system³ and public housing sites (Gonzalez-Perez; Mahoney). Concurrently, for decades following mandated integration, the federal agenda was dominated by the rise of "Racial Republicanism", a political alliance with Deep South roots whose formation was fueled by "the fear of equality and integration felt by Northern, Western, and Southern whites" and whose influence was evidenced by "sustained attempts to break off numerous social contracts: the New Deal; the War on Poverty; the Great Society; affirmative action; union shops; collective bargaining; the minimum wage; welfare; civil rights enforcement; employment programs; urban and rural assistance; social security; and health, safety, and environmental regulations" (McKittrick).

Another contribution to metropolitan changes in postwar New Orleans economy was the transformation of the city's downtown, the epicenter of which was Canal Street. Formerly a thriving business and retail center, plummeting property values in the CBD – coupled with the proliferation of the automobile – prompted the conversion of a good deal of land in and around the CBD and French Quarter to parking lots (R. Campanella, and Marina Campanella). The proximity to downtown of public housing further contributed to the decay of New Orleans' downtown: the exodus of retail outpaced the exodus of downtown employment (Lewis), and by the 1960s, many merchants who remained catered almost exclusively to low-income and black public housing residents from the nearby Iberville and Lafitte Developments (Mosher, Keim and Franques). The segregation of the public housing market in New Orleans, and separate public facilities for blacks and whites in general, were also costly endeavors for the city – especially considering that by the late 1950s, the New Orleans public housing population was almost exclusively African-American (Gonzalez-Perez; Mahoney).

Around the same time, conflict between the forces of highway building and historic preservation brought about the displacement of hundreds of black residents in the city's historic Tremé

³ By 1980, the New Orleans and Detroit public school jurisdictions boasted merely 12 percent white student enrollment (Farley).

neighborhood for the sake of Interstate 10 Claiborne Expressway, expanding access to the CBD and destroying a stable working-class black community. The French Quarter became the focus of an increasingly successful marketing campaign designed to draw tourists and conventioners to the city. And since 1970, the lower end of Canal Street is the epicenter around which tourist and cultural attractions have been constructed, including a multitude of hotels, an aquarium, and most recently Harrah's Casino. Meanwhile, the development of the Superdome at the end of Poydras Street cemented the thoroughfare as the epicenter of the new CBD; and professionals relocated to new office buildings that lined Poydras during the city's 'Oil Boom', which peaked in the mid-1980s (Lewis).

Long-Term Effects of Racial Segregation and Employment Decentralization

Kain and Mooney were among the first to successfully link housing segregation to black employment outcomes. However, the authors' findings differ slightly: while "Housing Segregation" illustrates a relationship between race, job proximity, and employment outcomes, "Alternative" implies that the attractiveness of the suburbs – rather than increasing nonwhite residential concentration in central-cities and/or white flight – has fueled job decentralization. Subsequent to the 1960s research, the spatial mismatch literature covers a wide range of policy issues in an attempt to tease out the prevailing symptoms and effects of residential segregation and racial discrimination in the housing market on the postwar urban black experience. Among the most prevalent are: disparities in educational attainment and academic performance (Kain "A Pioneer's Perspective on the Spatial Mismatch Literature"); disparities in income level (J. B. Strait; Kain "A Pioneer's Perspective on the Spatial Mismatch Literature"; Chapple); concentrated poverty and social isolation (Massey and Denton;

Greene; Wilson; Goering and Feins); job-search behavior (Elliott; Covington; Stoll and Raphael); and regional variations (Massey and Denton; Martin).

Spatial Mismatch: A Longitudinal Investigation

Some point to race as the primary determinant of socioeconomic mobility, and that accordingly it is a more accurate predictor of “variations” in employment patterns than is spatial proximity to jobs (Blumenberg). Still others, like Stoll in “Spatial Mismatch, Discrimination, and Male Youth Employment”, adopt the position “that place and not race explains blacks’ joblessness in central cities” (77). The inherent endogeneity of the race-versus-place discussion has fueled an enormous amount of debate and research. In an undertaking aimed at addressing the answer to the place-or-race question, Richard W. Martin presents readers with a comprehensive overview of late twentieth-century metropolitan change in “Spatial Mismatch and the Structure of American Metropolitan Areas, 1970-2000.” The purpose of Martin’s longitudinal study is to determine whether employment growth in suburban America attracted new residents to its proximity, or whether suburban employment growth pushed residential development to even farther distances during the three decades following John F. Kain’s seminal work in 1968. Broadly, R.W. Martin finds that while black workers are increasingly *chasing* jobs across U.S. metropolitan areas, whites exhibit a tendency to move increasingly farther away from centers of high employment growth – typically peripheral suburban enclaves (1) that were once exclusively residential and white, and (2) whose low-wage employment density gradually increased in the postwar decades.

The mixed SMI values are ultimately employed to calculate the degree to which change in SMI values for the study sample and geographic areas are attributable to employment shifts or population shifts. The relationship between the two distributions can be driven by two factors: employment-driven

convergence (EDC) or population-driven convergence (PDC)⁴. Finally, Martin uses regression analysis to determine whether SMI values are affected by (1) population size and number of counties per MSA, and (2) the percentage of black population per unit of analysis (484-85).

Broadly, R.W Martin finds that from 1970 to 2000, employment shifts tended to reduce overall average SMI values but tended to increase black average SMI values. And population shifts over this time period tended to increase overall average SMI values while they decreased black average SMI values (473-74). In other words, employment has been shifting away from black residential areas. Also, population shifts imply that blacks in general may have responded by moving toward employment centers while the overall population is locating farther away from these hubs. In his regression analysis, Martin determines that population size of the MSA, number of counties per MSA, and percentage of black population per MSA are found to be positively related to SMI values: larger cities and metro areas exhibited greater spatial distance between residences and employment centers (476).

Policy Response to Spatial Disadvantage and Racial Disparities in Labor-Force Participation

The most prevalent policy mechanisms point to a consensus among policymakers that place – not race – is the primary determinant of inner-city employment outcomes (Keels et al.; Kasarda; Chapple). Dispersal strategies have a dual purpose, whereby they can alleviate the concentration of inner-city poverty and associated problems (e.g., rampant crime and unemployment) as well as bring low-wage residents closer to low-skill suburban jobs. These programs, however, do not address job

⁴ The employment-driven convergence value or EDC is calculated by subtracting the decade's mixed SMI value from the start-of-decade SMI value. Population-driven convergence or PDC is calculated by subtracting the end-of-decade SMI value from the decade's mixed SMI value (479-84).

placement or the prevalence of firm behavior and discrimination; nor do they address the issue of social/community acceptance. More importantly, dispersal programs are often involuntary and are tied to plans for demolition or reduction in availability of public housing.

Mobility strategies primarily focus on increasing the capacity of the low-wage workforce residing in the inner-city to travel to suitable employment without residential relocation. One common example is policy aimed at mitigating mismatch by authorizing expansion of the public transit network in and around major cities to facilitate commuting for non-car owners. These and similar strategies, such as subsidized ride-sharing programs, ignore the political dimensions of transportation choice and policy. For instance, policies that result in higher costs of fares by distance inherently limit employment opportunities for low-wage workers with lengthy commutes. Moreover, transit provision favors those whose work schedules revolve around 'normal' business hours, while many low-wage-earners work part-time or otherwise work overnight, and non-professional jobs (Yago). Nor do mobility strategies address the absence of key amenities for low-wage workers commuting out of the city, such as nearby childcare facilities. And similar to dispersal strategies, they do not acknowledge the importance of increased local working rates, the potential benefits of which include reduced absenteeism and lower cost of labor (Immergluck). Nonetheless, the concentration and isolation of public housing developments in central-cities has cemented the immobility of poor African-American heads-of-household, single mothers, and welfare recipients (Stoll, Holzer and Ihlanfeldt) – whom one author identifies as the cornerstone of the urban black workforce (Farley).

The third primary mechanism to alleviate spatial mismatch relies on the success of urban revitalization policy, which since its inception has suffered from (1) fragmented authority and implementation structure, and (2) inconsistent levels of funding and political commitment (Rabin; Yago). The target beneficiary of redevelopment programs is most commonly the city treasury rather than disadvantaged central-city residents. Increasingly since the 1980s, urban revitalization projects have

been tied to business incentives aimed at diversifying firm payrolls or encouraging employment of local minority and/or disadvantaged residents. However, the well-known residual effects of inner-city comeback tend to displace poor workers, either in the form of rising property values and costs-of-living, or otherwise as a result of HOPE VI projects that reduce the number of subsidized units upon redevelopment. Even massive central-city developments like athletic stadiums and other recreational/entertainment attractions may only put a dent in joblessness and poverty among nearby residents; moreover these jobs are often seasonal in nature and subject to consumer demands. These challenges are nowhere better exemplified than in New Orleans, whose African-American residents before the storm (1) were overwhelmingly poor, and (2) heavily dependent on jobs in the hospitality and retail sectors.

Increased Nonwhite Mobility

In general, who have been the winners and losers of policy response to spatial mismatch? How have these policies and programs impacted spatial mismatch and for whom? Urban policy, particularly at the federal level, has shaped two important dimensions of metropolitan change since the Civil Rights Era. First, anti-discrimination legislation facilitated African-American suburbanization (albeit selective and piecemeal); and the 1970s decade witnessed a racial convergence in college enrollment and educational attainment between blacks and whites (Farley). So a segment of the nation's young African-American population enjoyed a relatively high degree of residential mobility, and was armed with credentials and skills that arguably precluded them from the low-wage job market. The exodus of the black middle-class from central-cities accelerated inner-city decline and fiscal crisis; by the end of the 1970s, the majority of major U.S. cities were increasingly characterized by nonwhite majority and concentration of poverty.

The second policy response to the post-Great Society urban problem was two-pronged. Operating under the place-not-race assumption, policymakers embraced strategies intended to decrease inner-city job isolation by (1) bringing low-income and public housing residents *out* to jobs and more economically diverse areas, and (2) incentivizing and encouraging development to bring firms and new infrastructure *into* cities and in closer proximity to low-income, low-skill, overwhelmingly nonwhite workers. However, urban development and revitalization planning grew out of fiscal policymaking and the anticipated benefits to city treasuries, rather than out of social policymaking second.

John F. Kain co-authored a number of studies on black urban housing choice in conjunction with the St. Louis Urban Renewal Agency from 1970 to 1975 in an effort to refine the prevailing methodology for measuring price discrimination. The findings challenge the notion that “housing is a homogenous good” whose attributes are static across a metropolitan area (“Pioneer’s Perspective” 12). The 1970s St. Louis Community Renewal Study highlights a startling conclusion: assuming no appreciation, black homebuyers could expect their annual housing costs to increase by 30 percent. Moreover, black homebuyers in predominantly low-income black areas paid on average five to six percent more than their white counterparts; and black renters in these areas paid on average 12 to 19 percent more than their white counterparts (“Pioneer’s Perspective” 12). Lower homeownership rates among blacks help explain significant disparities in wealth between blacks and whites. And as housing markets became increasingly more open to black ownership, by the late 1970s the price of homes had increased exponentially since the growth of mortgage brokering and rapid decentralization following WWII (“Pioneer’s Perspective” 13).

Between 1980 and 1990, national trends demonstrated that employment firms increasingly moved toward suburban locations and away from urban black residents (Martin; Covington). Over this same period, middle- and working-class black families became increasingly suburbanized, but this generally took place either in previously established black subdivisions or at the edges of predominantly

black inner-city neighborhoods (Kain "A Pioneer's Perspective on the Spatial Mismatch Literature"). Moreover, black suburban communities tended to be equally as segregated as they were in the inner-city (Stoll, Holzer and Ihlanfeldt 210). The Home Mortgage Disclosure Act⁵ data catalyzed a number of governmental investigations, such as one commissioned by the Federal Reserve Board in 1983 that provides evidence of redlining (Dedman "The Color of Money. Follow-Ups and Reactions. Blacks Turned Down for Home Loans from S&Ls Twice as Often as Whites"). The Reserve Board findings indicate a relationship between applicants' race, housing values, and the number of home loans granted. Despite overall growth (albeit piecemeal) in black homeownership and suburbanization over the last few decades of the twentieth century, similar studies in cities like Atlanta and Detroit found that home loan disparities actually increased between 1981 and 1986 (Dedman "The Color of Money. Follow-Ups and Reaction. Atlanta among 20 Worst Cities in Loan Inequities").

The suburbs, in the most common sense of the term, have historically been out-of-reach for most low- and moderate-income New Orleans black households. And the neighborhoods that presented the most viable option for many black New Orleans residents lay primarily within city limits in peripheral residential areas that were formerly occupied by whites (J. B. Strait, Gang Gong, and Cherisha N. Williams). Otherwise, pre-Katrina black decentralization and suburbanization was most prevalent at far reaches of the city and at just beyond its periphery (R. Campanella *Geographies of New Orleans: Urban Fabrics before the Storm*; R. Campanella "An Ethnic Geography of New Orleans"). This is true of areas like Gentilly and parts of New Orleans East: residential developments in the eastern half of the city sprouted in the 1960s and initially housed non-black, middle- and upper-class residents. But the economic decline experienced by the gas and oil industries in the early 1980s prompted widespread foreclosures and mass exodus of whites from the relatively modern subdivisions (R. Campanella

⁵ The advent of the Home Mortgage Disclosure Act (HMDA) in 1975 required financial institutions to release records on the geographic location of properties, as well as the terms, of mortgage and home improvement loans (Canner et al., 1991).

Geographies of New Orleans: Urban Fabrics before the Storm; R. Campanella "An Ethnic Geography of New Orleans"; J. B. Strait). One residential subdivision located in the Gentilly area – Pontchartrain Park – predates the inclusion of blacks in other sections of New Orleans East⁶. Pontchartrain Park exemplifies an early Deep South, FHA-funded subdivision that was intended to assuage the political demands of a relative affluent, civically-mobilized segment of New Orleans' black population. for affluent black residents (R. Campanella, and Marina Campanella; Hirsch).

By the late 1990s city-center redevelopment and planning was bolstered by (1) a strong economy, and (2) a shift in consumer behavior and preferences, fueled largely by delays in marriage and childrearing among twenty- and thirtysomethings (Sander and Testa). The back-to-the-city movement's implications for affordability and housing choice in central-cities were far-reaching: low-income residents were potentially displaced due to gentrification and increased cost-of-living; and conversely, a booming economy enabled many inner-city moderate- and middle-income nonwhite households to relocate to more desirable suburban residential locations within the city and/or the suburbs. Using Public Use Microdata Sample (PUMS) files from the 1990 and 2000 *Census of Population and Housing* for the Chicago metropolitan statistical area, Sander and Testa explore the relationships between race, educational attainment, and suburban versus central-city housing choice in another study of Chicago. The authors find that high educational attainment among whites is highly associated with central-city residential location, and that a larger percentage of whites with at least an undergraduate degree reside within the city, rather than living in the suburbs. The authors find that, conversely, high educational attainment among blacks and Hispanics is associated with suburban residential location; and a larger percentage of blacks with at least an undergraduate degree reside in Chicago's suburban areas than in

⁶ The central feature of the Pontchartrain Park development was a blacks-only golf course (the completion of which did not occur until after the declaration of a federal mandate for racial integration that grew out of *Brown v. Board*) in a prototypical suburban setting; the subdivision emerged as a black middle-class stronghold whose well-to-do constituency generally opposes multi-family and commercial development (Bates).

the city itself. These findings clearly indicate a reversal from the prototypical postwar racial residential distribution.

“Spatial Mismatch, Discrimination, and Male Youth Employment” takes into account individual residential location, individual personal characteristics (such as academic achievement), and individual family characteristics to determine (1) the extent to which suburban residential location affects the probability of male youth employment, and (2) the extent to which the probably of youth employment is a function of these three variables (Stoll). He finds that while black male youth in the D.C. suburbs fare better than their inner-city counterparts, they do not achieve the same level of employment as *white* suburban male youth. Stoll’s work here serves as a counterargument to the potential for improved economic and employment opportunities of nonwhite suburban residents evidenced by Sander and Testa.

In “What Spatial Mismatch?”, Cohn and Fossett rely on data from 1979 to 1981 and indicate that, in Boston and Houston, job search radii for blacks and whites are actually quite similar, and the research actually suggests that blacks have greater access to entry-level employment than do whites overall (Cohn and Fossett). But the authors also assert that reliance on less convenient modes of transportation results in reduced commute distance. Based on data from the 1980 U.S. Census Urban Transportation Planning Package dataset as well as the 1979 and 1981 annual housing surveys for Houston and Boston, respectively, Cohn and Fossett investigate black job access relative to residential location by examining commute distance by race for workers in Boston and Houston. Their findings point to high centralization of jobs in general in both cities, as well as higher residential centralization among blacks than whites. Cohn and Fossett conclude that although blacks in Boston and Houston are residentially segregated from whites and confined to central-cities, they are still in close proximity to concentrations of low-wage or “entry-level” employment than their white counterparts.

Using data on male employment levels in Cleveland and Milwaukee for the year 1990, Boardman and Field rely on measuring *duration* of commute – unlike Cohn and Fossett, who rely on commute distance – to determine the relationship, if any, between proximity to employment and male joblessness (Boardman and Field). Boardman and Field conclude that even though majority-black neighborhoods in 1990 in Cleveland and Milwaukee closer in proximity to entry-level jobs than white neighborhoods, workers residing in majority-black neighborhoods still tended to experience longer commutes on average. The findings on Cleveland and Milwaukee also indicate that black residential areas exhibit higher unemployment levels – this is due in large part to the absence of reliable transportation networks and to low car-ownership rates among inner-city low-wage workers.

In an investigation of employment distribution across the Atlanta, Boston, Detroit, and Los Angeles metro areas, findings indicate that welfare recipients, impoverished women with dependents, and those with low educational attainment persistently find themselves with low access to low-wage employment; while low-wage job availability in the suburbs of these metro areas is relatively high (Stoll, Holzer and Ihlanfeldt). Relying on demographic and employment data from the U.S. Census, as well as data provided by local transit authorities for the year 2000, one author examines low-wage job access in the greater Buffalo, NY region measuring access to low-wage jobs *assuming dependence on existing transport networks* (Hess). Hess finds that the Buffalo region's central-cities enjoy higher job densities than do suburban locations, and goes on to observe that their central-city residents are in closer proximity to a higher overall proportion of jobs – despite higher numbers of low-wage jobs in the suburbs. Nevertheless, Hess's findings are also indicative of high centralization of poverty within these central-cities; moreover, access to motorized transport is much lower among inner-city blacks in poverty. However, African-American adults in poverty have poorer access to automobiles than whites in poverty.

In the New Orleans MSA, the dispersal of the low-wage workforce has been bifurcated. On the one hand, a good deal of impoverished white residents has gradually redistributed itself away from the city into St Bernard – whose population is characterized by nonwhite exclusion and a low-skill, low-wage workforce. On the other hand, policy to alleviate the concentration of black poverty has been scant. On the contrary, the center-city (Orleans Parish) has consistently been home to the majority of the MSA's black residents. And public housing has exclusively been sited in Orleans Parish, albeit one public housing development (Fischer) is located on the West Bank of the Mississippi River. In terms of pre-Katrina spatial mismatch, this has been fortuitous because the bulk of the metro area's low-wage jobs were located in the city. However, this is no longer the case in post-Katrina New Orleans. The absence of concrete policy to alleviate the plight of poor workers is increasingly significant in the post-Katrina MSA. In New Orleans more than half of poor households did not possess a private motorized vehicle in 2000. At the same time, poor households were less likely to receive housing assistance than other citizens in Louisiana as well as in the Southeast region of the country (Lowe and Shaw 806).

The Census data on commute mode by earnings⁷ indicate that the metro-wide post-Katrina workforce remains heavily reliant on cars to travel to work. Significantly, the breakdown of commute mode by income bracket demonstrate that not only do low-wage workers overwhelmingly travel alone via private vehicle: by 2008, the percentage of poor workers earning less than \$10,000 annually who commute alone via actually *increased* from 2004, while the proportion of commuters represented by those earning less than \$15,000 annually increased slightly, from 23.2 to 23.7 percent, despite the post-Katrina exodus of low-wage jobs from the New Orleans MSA. This is an indicator of both the poor quality of transit provision throughout the MSA's parishes, as well as poverty sprawl and the extent to which low-wage workers are residing farther from suitable employment centers.

⁷ This is necessarily restricted to workers aged 16 and older, based on driving eligibility.

Relocation Programs and Community Redevelopment

An investigation⁸ of the long-term outcomes and effects of *Gautreaux* relocation suggest overall, sustained quality-of-life improvements for participants and support the ‘place’ argument (Keels et al.). Using Census and crime data for the initial destination and most recent locations of participants whose relocations occurred between 1976 and 1989, the results of one study of the long-term outcomes of *Gautreaux* participants point to long-term improvements in neighborhood quality (Keels et al.). However, the authors note that participants’ current neighborhoods generally fit into one of four categories – according to low- or moderate-income and according to racial (black or white) predominance. So while former public housing residents persistently resided away from low-income, high-poverty areas, they generally did not ascend to middle- or upper-middle-class areas.

The significance of spatial proximity and job access is also demonstrable in “smaller metros... [that] have less mismatch than larger ones, perhaps because of shorter distances between jobs and housing” (Chapple 324). The regression analysis and results in R.W. Martin’s “1970-2000” affirm that spatial mismatch is positively related to MSA size (e.g., the number of counties and square mileage) and the MSA’s total population (476). “Overcoming Mismatch” states that where “spatial mismatch does exist, it does not necessarily follow that the main policy focus should be to reduce it. If race is a far more important explainer of employment outcomes, for example, and it interacts with the locations of residents and jobs in space, intervening to bring people closer to jobs may have little impact” – rather, the appropriate “policy might better focus on chronic employment discrimination if increasing minority employment were the goal” (324). On the contrary, Allard’s research on the effects of welfare reform

⁸ The *Gautreaux* study fails to examine job proximity in relation to placement and current neighborhoods.

on low-income employment outcomes in Detroit affirms that “[r]ates of work among welfare recipients are positively related” to job access (1045).

By the 1990s, the majority of public housing developments in New Orleans suffered not only from disrepair and non-maintenance but also from poor governance on the part of a notoriously ineffective housing authority (Mahoney). Federally-driven programs such as HOPE VI have resulted in the demolition and/or refurbishment of a handful of housing projects, but data and research on the outcomes and effects of these efforts provide evidence that poor New Orleans residents have emerged worse off than they were prior to housing revitalization (Reichl). Moreover, the case of the St Thomas redevelopment highlights the importance of gentrification and high value assigned to sections of the city in driving policy that dictates which projects are targeted. HOPE VI projects have consistently displaced welfare recipients and other poor residents while accommodating citizens with the capacity to afford market-rate housing.

The effects of white flight, accompanied by the transfer of most white school-aged children to suburban or private schools, solidified the homogenization of the New Orleans Public School District and the drastic decline in school quality (Lewis). Following the Oil Bust of the mid-1980s, the city of New Orleans was overrun by rampant urban decay, crime, and unemployment; and the City’s population in poverty suffered most. The absence of transit enhancements reinforced job isolation for poor workers in the New Orleans MSA. New Orleans, like most U.S. cities, witnessed a surge in car ownership between 1900 and the years leading up to the Great Depression; it is estimated that the number of cars on New Orleans roads grew four-fold between 1916 and 1927 (Fairclough). Restrictions on suburban expansion were further obviated by a number of important highway projects, including the construction of the I-10-Claiborne Expressway/I-610. In 1956 and 1969, respectively, the first and second spans of the Causeway were opened to the public (Greater New Orleans Expressway Commission). The world’s longest bridge, the Causeway, spans Lake Pontchartrain and connects suburban Jefferson and St

Tammany Parishes. These jurisdictions, along with St Bernard Parish, have seen tremendous white population growth since the 1960s (R. Campanella *Geographies of New Orleans: Urban Fabrics before the Storm*; Cowan). In 1958, the first bridge connecting New Orleans to parts of both Jefferson and Orleans Parishes on the West Bank of the Mississippi River – the Greater New Orleans (GNO) bridge – was opened to the public (Louisiana Department of Transportation and Development)⁹.

Lewis points out that, although the City population nearly achieved black-white equilibrium in 1980, by the year 2000 the ratio of blacks to whites in New Orleans was nearly three-to-one. And in 2004, not only were New Orleans Public Schools more than 90 percent African-American, but more than 75 percent of the city's students received free lunch or otherwise lunch at a reduced price (Morris). In sum, "black people in New Orleans were disproportionately poor, and poor people in New Orleans were disproportionately black" ("Out of New Orleans" 470). Ironically, Mosher, Keim et al. observe that "unlike other cities of the United States... New Orleans's tourism and entertainment industry sold black people's culture as part of the milieu of ethnicities in the city" while "the poor black population... was primarily consigned to the bottom of society" (474).

Research Design

Rationalizing the Approach: What is Known from Existing Data and Research

This study employs a number of statistical approaches to answer the research questions. Again, the first objective is to determine whether low-wage earners suffer from more or less spatial mismatch post-Katrina. This can be addressed by using data on the residential and employment distribution of lo-

⁹ A second span was opened thirty years later to accommodate greater volumes of traffic and make this suburban haven that much more accessible by automobile.

wage-earners across the metro area. The second objective is to determine whether low-wage-earners in suburban locations suffer from greater degrees of mismatch than those residing in the central-city. The residential and employment distribution data are combined to create an index to gauge the level of job *accessibility* by parish. Both questions rely on data drawn from the U.S. Census Bureau. The primary source is the U.S. Census Local Employment Dynamics (LED) *OnTheMap* tool, which aggregates employment data for the MSA by earner wages but not by race and ethnicity. From a research perspective, there are additional factors driving the focus on low-wage workers rather than African-American workers.

Several important issues and trends emerge in the review of the New Orleans literature that renders New Orleans an exemplary case study in the area of spatial mismatch theory. However, unlike the bulk of the spatial mismatch literature, this research does not focus on mismatch for black workers but on mismatch for poor workers. First, urban development and residential distribution in New Orleans have historically been based on race and socioeconomic status; but interestingly and uniquely, development and settlement patterns have been dictated by topography and elevation. Secondly, blacks in New Orleans have historically been poorer overall than whites (Hillery; Johnson; Spain). And especially since Reconstruction, black New Orleanians have held a uniquely disadvantaged position, operating within a restrictive housing and labor market and under a “neo-plantation” style of local and state governance (McKittrick 56-57). Several data reinforce these assertions and thus obviate the need for the study to center on black residential and employment distribution.

Despite a slight reduction in the overall-versus-black poverty gap, African-American residents of the New Orleans metro in 2008 were still almost twice as likely to be poor as was the general population, even though the metro-wide African-American population declined by 22 percent between 2000 and 2008. This is congruent with the findings that 49.8 percent of the 2008 metro’s black population and 40.4 percent of the 2008 metro’s poor population is concentrated in Orleans Parish.

Moreover, the three parishes where black concentration is highest (Jefferson, Orleans and St. Tammany) are also those with the greatest shares of the MSA's poor.

This is significant for the purposes of measuring spatial mismatch because the core city is no longer home to the highest number of low-wage jobs. What is more striking, even though the proportion of the MSA's black population fell by six percent and the proportion of the MSA population residing in the city fell by ten percent, approximately three out of five African-American metro residents were located in the core city in 2008. This also broadly demonstrates the degree to which the importance of the central-city from an economic perspective has declined, and the importance of shifts in the focus and framework employed in the spatial mismatch research generally.

Data from the 2000 Census reveal that blacks were the New Orleans MSA's only nonwhite group whose majority resided in the city: roughly half of the MSA's Asian population and approximately 55 percent of the MSA's Hispanic and Latino population resided in Jefferson Parish. During the 1990s black and white New Orleans residents grew increasingly segregated, and black residents were most segregated from whites of any subgroup (J. B. Strait, Gang Gong, and Cherisha N. Williams). Moreover, an examination of income distribution suggests that black households, both pre- and post-Katrina, were "much more likely to earn the lowest incomes and whites much more likely to earn the highest incomes" (Liu and Plyer). The absence of a diversified economy as well as pronounced disparities in wealth between black households and all other households have restricted socioeconomic balance in the New Orleans metro area.

The implications of the data analysis on low-wage commute patterns are also significant for the purposes of this study on spatial mismatch: the results here also indicate that low-wage-earners were much more adversely affected by market changes following Hurricane Katrina than were wage-earners overall. While the number of overall wage-earners who work and live within the same parish of the New Orleans MSA fell by 24 percent, the number of low-wage-earner-residents across the metro area

fell by 46 percent. More astoundingly, the number of low-wage in-commuters to the overall MSA declined by 17,559 – which is *three times as much* as the decline in the number of overall in-commuters. And while the number of overall *out*-commuters from the MSA and low-wage out-commuters from the MSA declined by virtually the same number – 20,032 and 19,815, respectively – the number of low-wage out-commuters declined by 30 percent, while the former declined by only nine percent.

Six out of the seven parishes in the MSA experienced a decline in the number of low-wage in- and out-commuters in the years following Hurricane Katrina – which is indicative an overall exodus of people in poverty during the course of the city’s recovery. The exception here is St. Tammany Parish: while only seeing a modest increase of 289 low-wage in-commuters, the parish still experienced an increase of almost three percent from its original 2004 low-wage in-commuter count. While Jefferson Parish did not witness the highest loss of low-wage in-commuters by percentage, Jefferson Parish did experience the greatest decline in the *number* of low-wage in-commuters (more than 8,000)¹⁰. Orleans Parish lost the greatest number of low-wage out-commuters (8,412, or approximately 30 percent) between 2004 and 2008; Jefferson Parish lost nearly 5,800 low-wage out-commuters (a decline of 27 percent). This is important when considering spatial mismatch, because the low-wage-earners may potentially suffer from greater mismatch post-Katrina despite a decline in the sheer number and volume of low-wage workers residing in the metro area.

Variables and Indicators to Answer the Research Questions

Another important factor dictating the research’s focus on low-wage workers, rather than on the African-American workforce, is the availability of data. Some Census surveys pose a number of

¹⁰ Orleans Parish came in second with a loss of nearly 7,000 low-wage in-commuters. Still the greatest percentage loss of low-wage in- and out-commuters post-Katrina occurred in St. Bernard Parish: the estimated 2008 total for both groups is more than 4,000 low-wage commuters combined.

limitations for the purposes of this study because they are governed by criteria or methodology that is too restrictive; additionally, the frequency with which surveys are conducted and the youth of certain data sets also constrain the usefulness of some Census programs¹¹. At the local level, a wealth of information is available through the Greater New Orleans Community Data Center (GNOCDC), an established nonprofit organization that has consistently facilitated data analysis and reporting with the objective of fostering well-informed local policymaking since 1997. In addition to supplying the public statistics on the socioeconomic and demographic shifts in New Orleans and the surrounding area dating back to the pre-Katrina period, since 2005 most of the GNOCDC's research has addressed the most significant, often looming questions and issues pertaining to economic and population recovery in the city of New Orleans and in the region: repopulation and population distribution; housing and housing needs; the labor market and employment; quality of life; and income and affordability. However, little literature exists on research that, side-by-side, focuses on both pre- and post-Katrina employment distribution in relation to residential distribution.

The Census Local Employment Dynamics (LED) *OnTheMap* tool allows users to: (1) determine the location of jobs within a specified search area; (2) determine the residential and employment locations of workers of the study area (e.g., commute data); and (3) aggregate labor and population data by income level. The program produces the results cartographically and as raw data in Microsoft Excel format¹². I utilize the U.S. Census American Community Survey, as well as Local Employment Data from the U.S. Census Longitudinal Employer-Household Dynamics (LEHD) and the Local Employment

¹¹ For example, the American Community Survey (ACS) database includes one-year and three-year estimates covering a range of demographic statistics; surveys used to calculate the one-year estimates are employed exclusively for geographic areas whose population is at least 65,000, while the three-year estimates are calculated for any geographic area whose population is at least 20,000. Unfortunately for the purposes of this work, the annual 2008 estimates are only available for three of the seven parishes that make up the MSA (Jefferson, Orleans, and St. Tammany Parishes), and data is available for only two of the seven parishes (Jefferson and Orleans Parishes) in the annual 2004 estimates. So while the ACS one-year estimates are available for the metro area (because its population is well in excess of 65,000) they are not available at the parish level.

¹² One notable constraint of the data tool for the purposes of this study is the absence of aggregation of earnings and residential data by race and ethnicity.

Dynamics (LED) *OnTheMap* tool, to measure the concept of spatial mismatch to the degree that it exists in the New Orleans metro area over a four-year span, from 2004 to 2008.

There is a sizeable portion of the existing literature on spatial mismatch that couches job isolation and socioeconomic disparity by evaluating the black urban experience. However, thanks to various scholarly publications and to a wealth of Census data, several questions regarding the state of the pre-Katrina black community have already been answered, and the impacts of systemic discrimination on overall quality-of-life outcomes for New Orleans' African-American residents and workers are well-documented (Johnson; Bates; Mosher, Keim and Franques). Prior research demonstrates that (1) the majority of low-wage working residents in the MSA were located in the City; (2) the majority of the MSA's poor population and majority of the metro area's black population resided in the City; and (3) the metro area's black poverty rate far exceeded the MSA's overall poverty rate in 2004. "Indeed, Hurricane Katrina provided the state of Louisiana (through its largest city, New Orleans) as the model of how decades of public policies fostering constructions of race, class, and poverty produced... social and geographic segregation" (Lowe and Shaw 806).

Given the disaster-related exodus of resources from the New Orleans area (e.g., residents and workers, jobs and employment firms), low-wage-earners of all backgrounds are now operating within a contracted labor market that was characterized by a disproportionately low number of moderate- and high-income jobs prior to Hurricane Katrina (Plyer and Ortiz). Low-wage-earner residents in the post-Katrina MSA are simultaneously forced to operate within a restrictive and increasingly unaffordable housing market. The primary indicators used herein to operationalize the concept of spatial mismatch in the pre- and post-Katrina New Orleans metro are low-wage employment distribution, residential distribution, and commute behavior to determine job accessibility. Each of the MSA's parishes is

assigned an index value to determine the degree to which low-wage-earner residents suffer from spatial mismatch.

Analysis and Findings

Low-wage job index

The low-wage job index very simply expresses the ratio of low-wage jobs to low-wage-earner residents for each of the MSA's seven parishes. An index value greater than one (1.0) suggests an overabundance of low-wage jobs, relative to the number of low-income workers living in a particular parish. Whereas an index value of *less* than one (1.0) is indicative of a lagging supply of low-wage employment, relative to the number of low-wage-earners residing in said parish.

A comparison of the pre- and post-Katrina data indicate that – in order of least to greatest – each parish has maintained its relative position. The lowest ratio value is found in St John the Baptist and the highest is found in Plaquemines Parish. What is *not* demonstrable in this calculation is that the numbers of low-wage-earner residents increased since the storm in St Tammany Parish and St John the Baptist Parishes; nor can we gauge that the black population in both parishes have increased.

Table 1

Low-Wage Job Index, 2004-2008			
parish	low-wage job index, 2004	low-wage job index, 2008	%change, low-wage job index
Jefferson	1.136	1.136	-0.02%
Orleans	1.020	1.099	7.73%
Plaquemines	1.200	1.164	-2.97%
St Bernard	0.765	0.744	-2.77%
St Charles	0.877	0.798	-9.08%
St John the Baptist	0.603	0.634	5.26%
St Tammany	0.922	1.008	9.31%

Source: U.S. Census Bureau Longitudinal Employer-Household Dynamics. OnTheMap Version 4.1.

Table 2

Low-Wage Job Index: Parish Rankings (asc. order)	
<u>2004</u>	<u>2008</u>
St John the Baptist	St John the Baptist
St Bernard	St Bernard
St Charles	St Charles
St Tammany	St Tammany
Orleans	Orleans
Jefferson	Jefferson
Plaquemines	Plaquemines

Low-wage residential and employment distributions

The residence and employment indexes used in this analysis are borrowed from Kain's ratios, which appear in his seminal 1968 research on spatial mismatch. The indexes, respectively, are calculated according to the equation:

$$\textit{number of low-wage-earner residents } x / \textit{ number of overall wage-earner residents } x$$

and

$$\textit{number of low-wage jobs } x / \textit{ number of jobs } x,$$

whereby "x" stands for "parish". The residence index for each parish is intended to measure the extent to which low-wage workers in each parish of the New Orleans metro area experience spatial mismatch relative to the general working population. And the employment index is intended to measure the proportion of low-wage jobs that exist in each parish. For the residence index, a greater index value indicates a higher percentage of residents who fall into the low-income category are located in a given parish: for instance, in 2008 approximately 18 percent of the workforce residing in Plaquemines Parish is considered 'low-wage'. The same applies to the employment index – whereby a greater index value suggests that a higher percentage of low-wage *jobs* are located in a particular parish. For example, 20 percent of the jobs in Orleans Parish are deemed 'low-wage' jobs in 2008.

Table 3

Residence and Employment Indexes, 2004-2008						
parish	residence ratio, 2004	employment ratio, 2004	residence ratio, 2008	employment ratio, 2008	%change, residence ratio	%change, employment ratio
Jefferson	0.283	0.299	0.209	0.222	-26.22%	-25.90%
Orleans	0.338	0.286	0.244	0.200	-27.69%	-30.19%
Plaquemines	0.272	0.204	0.179	0.124	-34.40%	-39.48%
St Bernard	0.294	0.404	0.208	0.224	-29.28%	-44.62%
St Charles	0.258	0.230	0.202	0.162	-21.61%	-29.30%
St John the Baptist	0.296	0.299	0.213	0.196	-27.88%	-34.38%
St Tammany	0.278	0.345	0.223	0.280	-19.70%	-18.83%

Source: U.S. Census Bureau Longitudinal Employer-Household Dynamics. OnTheMap Version 4.1.

Table 4

Residence Index: Parish Rankings (asc. order)	
<u>2004</u>	<u>2008</u>
St Charles	Plaquemines
Plaquemines	St Charles
St Tammany	St Bernard
Jefferson	Jefferson
St Bernard	St John the Baptist
St John the Baptist	St Tammany
Orleans	Orleans

What does the residence index say about spatial mismatch? The residence index demonstrates the increase in the number of low-income workers residing in St Tammany Parish, as well as the decline in the number of low-wage-earners residing in Plaquemines Parish. St Tammany Parish exhibited among the lowest residence index values before Katrina, whereas its ranking means that it is home to the second-*highest* concentration of low-wage earners by 2008. The percentage of wage-earner-residents who are considered ‘low-income’ in St Bernard Parish declined by nearly nine percent between 2004 and 2008. This is largely a function of damage levels wrought by Hurricane Katrina, and is reflected in the drop-off in low-wage employment there: the change in the Parish’s ranking (from fifth to third out of seven) and index values suggest a marked decline in low-wage employment there.

The parish rankings are important because, although the affordability of city living has decreased, Orleans Parish still houses the largest proportion of low-income residents relative to overall working residents. However the city is no longer home to the highest proportion of low-wage

employment. Moreover, St Tammany’s 2008 residence index value implies that the parish has moved much closer to the central-city, in terms of the number of poor workers housed therein.

Table 5

Employment Index: Parish Rankings (asc. order)	
<u>2004</u>	<u>2008</u>
Plaquemines	Plaquemines
St Charles	St Charles
Orleans	St John the Baptist
St John the Baptist	Orleans
Jefferson	Jefferson
St Tammany	St Bernard
St Bernard	St Tammany

The employment index values indicate that the proportion of employment categorized as low-wage has dropped off most significantly in St Bernard and Plaquemines Parishes, which is partly a reflection of the drop-off in employment in these parishes overall. So what has attracted a greater percentage of low-wage-earner residents to post-Katrina St Tammany Parish by the year 2008? St Tammany houses the highest *percentage* of low-wage employment relative to *overall* employment. Once again, it is clear that being a low-wage-earner resident in post-Katrina St Tammany affords poor workers the least drastic degrees of spatial mismatch.

Low-wage job accessibility

Table 6

Job Accessibility Index by Parish, 2004-2008			
	accessibility index, 2004	accessibility index, 2008	%change
<i>average</i>	0.518	0.601	16.18%
parish			
Jefferson	0.404	0.433	7.20%
Orleans	0.369	0.491	32.93%
Plaquemines	0.496	0.652	31.50%
St Bernard	0.572	0.769	34.63%
St Charles	0.663	0.714	7.73%
St John the Baptist	0.703	0.721	2.57%
St Tammany	0.417	0.429	2.89%

Source: U.S. Census Bureau Longitudinal Employer-Household Dynamics. OnTheMap Version 4.1.

The accessibility index for each parish is intended to measure the *extent* to which low-wage workers in each parish of the New Orleans metro area experience spatial mismatch, or the degree to which low-wage-earners in each parish suffer from job isolation. The index is calculated as follows:

$$\text{number of low-wage out-commuters } x / \text{number of low-wage-earner residents } x$$

whereby “x” stands for “parish”. For the purposes of the last dimension of the data analysis, the accessibility index values for 2004 and 2008 are averaged across the seven parishes; the mean accessibility index values for 2004 and 2008, respectively, are 0.518 and 0.601.

The accessibility index, derived from one of the earliest works on spatial mismatch theory, is used to provide a crude measure of the degree to which disadvantaged (e.g., low-skill, poor) workers

suffer from job isolation (Mooney). Mathematically, a value of zero might indicate a jurisdiction with a high level of poverty – due to a high number of low-wage residents with none of them commuting out for work. Conversely, a value of zero might indicate that the number of low-wage jobs and residents within the subarea is equal – thus allowing all low-wage residents therein to live and work in the same jurisdiction without having to commute. On the flip side, a value of one might point to a balance in low-wage residential and employment distribution but does not give any indication as to whether or how many of the subarea’s low-wage-earner residents are actually leaving the jurisdiction for work.

Table 7

Job Accessibility Index: Parish Rankings (asc. order)	
<u>2004</u>	<u>2008</u>
Orleans	St Tammany
Jefferson	Jefferson
St Tammany	Orleans
Plaquemines	Plaquemines
St Bernard	St Charles
St Charles	St John
St John the Baptist	St Bernard

To proxy overall low-wage job isolation for poor workers in the post-Katrina New Orleans MSA, low-wage mismatch is calculated by dividing the number of low-wage out-commuters by the number of low-wage-earner residents for each of the seven parishes. Again, the average index values for 2004 and

2008 are 0.518 and 0.601, respectively. Those parishes whose accessibility is determined to be below average are considered more favorable because the number of low-wage out-commuters (the numerator) is deemed to be lower than the number of low-wage-earner residents (the denominator).

According to the estimated accessibility index, then, poor workers living in post-Katrina St. Tammany Parish are at the greatest spatial advantage with an index value of 0.429, while low-wage workers living in St. John the Baptist Parish in 2008 were at the greatest spatial *disadvantage* with an index value of 0.721. The MSA's three most populous parishes exhibit pre- and post-Katrina index values that indicate lesser degrees of low-wage job isolation. However, contrary to 2004, Plaquemines Parish's post-Katrina index value is above average, meaning that low-wage job isolation there actually increased as a result of distributional shifts following Hurricane Katrina.

The results according to the accessibility measurement have significant implications for post-Katrina job-isolation and spatial mismatch, not only for low-wage workers but also for African-American residents in the New Orleans metro area. On the one hand, those low-wage workers residing in the post-Katrina core city enjoy relatively high access to suitable employment. On the other hand, St. John the Baptist Parish has emerged as the only other jurisdiction, aside from Orleans Parish, whose population is majority-African-American. And St. John is also the parish where low-wage workers are at the greatest spatial disadvantage and suffer from the greatest degree of low-wage job isolation.

Analysis of the commute-origin data for the New Orleans MSA indicates that low-wage-earner residents in the core city by 2008 emerged as the most disadvantaged from a spatial mismatch perspective. Not only did Orleans Parish lose the greatest number of low-wage jobs but also saw the greatest decline of in the number of low-wage residents able to work and live in the same jurisdiction. Indeed, the ratio of low-wage in-commuters to out-commuters for the city grew between 2004 and 2008 – even though the number of jobs and commuters declined drastically overall. Alternatively, it can be argued that the impacts of hurricane-related events (e.g., wind damage and flooding) on the supply

of housing stock (Plyer et al.) have decreased spatial mismatch in places like St Bernard Parish but *increased* mismatch in Orleans Parish.

Overall, the results may buttress speculation that poor workers are seemingly suffering from greater mismatch because they are constrained by increased cost-of-living while at the same time seemingly as reliant on arguably the most unaffordable mode of transit – private automobile. Simultaneously, the percentage of workers in poverty who took public transportation to work declined between 2004 and 2008. Presumably, this segment of the metro workforce *would* rely on public transit if it were still a reliable means of travel-to-work. Thus, spatial mismatch for poor metro workers has grown particularly acute for those living in outlying parishes with inadequate public transit provision. And those parishes whose post-Katrina public transit networks are most robust and reliable – namely, Orleans Parish, and to a lesser degree, Jefferson Parish – are precisely where the highest concentration of low-wage jobs are now located, and are arguably home to the least-affordable housing.

Conclusion and Policy Implications

The findings of this spatial mismatch study contribute to the New Orleans literature and to the spatial mismatch literature by employing commonly-used methodologies and measurements to estimate the degree to which post-Katrina demographic and market shifts have influenced job accessibility for the poor and for low-wage workers in the seven-parish metropolitan statistical area. Consequently, the research questions and research design highlight the significance of both race *and* place. The study is not restricted to gauging the effect of either one of these facets of mismatch and instead relies on a range of measurements to demonstrate their interrelatedness – this serves to support and strengthen the research questions and arguments but also to better inform post-Katrina policymaking. The major

findings are that low-wage working residents in the suburbs directly adjacent to the city, Jefferson and St. Tammany Parishes, experienced a decrease in mismatch, while low-wage workers in the smaller and more rural suburbs are experiencing increased spatial mismatch. The majority of the metro area's poor population no longer lives in the City, and the fringe suburbs have seen their shares increase.

Coincidentally, the outlying suburbs of St Tammany and St John the Baptist Parishes have seen their shares of population in poverty and black population increase since Katrina. The data preclude the study from determining whether these parishes increased their shares of blacks *in poverty*.

The GNOCDC tells us that housing can be defined as *affordable* when one's rent (or mortgage payment) and utilities consume 30 percent or less of a worker's pre-tax wages . Accordingly, *cost-burden* results when rent and utilities exceed 30 percent of monthly pre-tax wages. Post-Katrina housing affordability has decreased and cost burden has consequently increased: almost 60 percent of renters (compared to only 30 percent of homeowners) within the city are cost-burdened; and the majority of the MSA's poor population reside in the suburbs (Liu and Plyer). This is significant because (1) low-wage earners are more likely to rent, and (2) almost half (47 percent) of full-time workers in the MSA earn less than \$35,000 annually.

The literature review reveals that land-use policy and planning have consistently been inextricably linked to the prevailing socioeconomic dynamics of the urban environment over time; these two facets of spatial mismatch, moreover, are mutually reinforcing. This analysis demonstrates that low-wage workers in particular suffer from constrained mobility following Katrina as well as from increased dispersal, which begs the question: how can policymakers best facilitate low-wage mobility, on the one hand, and influence the siting of low-wage firms and jobs on the other hand? Although the *new* New Orleans may be smaller as measured by population size, in reality it is in many ways *larger* as a result of increased population and job sprawl – thus rendering non-motorized transportation increasingly more inconvenient for those low-wage workers living away from the core city. And to be

sure, they *are* residing increasingly farther from the metro center. However, public-transit services have not been expanded accordingly, due not only to local fiscal capacity, job sprawl and worker sprawl, but also because there has been very little in the way of inter-parish or regional transportation planning. Thus, spatial mismatch has markedly increased from a mobility standpoint, as well as from the perspective of increased job dispersal. And local leaders and policymakers are at a distinct disadvantage having to plan for a more widely scattered constituency with fewer resources available.

Since Hurricane Katrina, among the most glaring and critical challenges to effective policymaking to post-disaster recovery are: notable increases in cost-of-living; scarcity of affordable housing; and the homogenous nature of the local economy. Post-Katrina, 70 percent of low-cost rental housing units, 81 percent of the public housing stock, 80 percent of units receiving housing vouchers, and 80 percent of subsidized housing was either damaged or damaged beyond repair; meanwhile, rental costs nearly tripled (Lowe and Shaw 806). The first two issues are clearly interrelated – however, the pace of public and subsidized housing development can arguably be traced in part to intense, deeply rooted civic and political opposition and NIMBYism. The diversity of the job market in metro New Orleans has historically constrained and continues to constrain the growth of a middle class. The New Orleans economy has been consistently characterized by a disproportionately low number of moderate- and high-income jobs (Plyer and Ortiz).

The existing post-Katrina research indicates that the nature and focus of most post-disaster recovery programs center on homeowners and commercial entities – meanwhile, 23 percent of workers aged 16 and older earn less than \$15,000 annually and 47 percent of full-time metro workers earn less than \$35,000 annually. Without incentivizing future aid to renters in the New Orleans metro, cost-burden and low-wage residents will continue to suffer – thus hindering the possibility for the growth of a post-Katrina middle class. Secondly, the absence of comprehensive regional planning, coupled with

fragmented local land-use and housing policymaking among the MSA's parishes, precludes leaders from realizing the potential *collective* benefits of sound post-disaster urban planning.

What accounts for variations in spatial mismatch for (a) low-wage working residents in the City and (b) low-wage working residents of the suburbs? Poor workers residing and working in the City may actually be at a disadvantage due to increased cost-of-living at the center (Greater New Orleans Community Data Center). Suburban low-wage-earners are less reliant on city jobs but are still residing increasingly far from low-wage jobs in peripheral suburbs like Jefferson Parish and increasingly residing in more outlying parishes like St. John the Baptist.

This study represents a mere but important drop in the bucket that is the body of post-Katrina research; the data sources used herein can be utilized to inform a broad range of research questions. For example, the accessibility index might be employed to gauge the degree to which residents are isolated from public transit modes. The index might also be used to measure racial and ethnic residential isolation. The Census LED data can be used to measure *non-MSA* mismatch – in other words, the extent to which workers residing in the MSA are forced to work outside its boundaries. The Census-defined New Orleans-Metairie-Kenner, LA MSA defines the geographic focus of this study. However, increased job sprawl and the declining economic dominance of the City of New Orleans itself necessitates that future research on the metro area include an expanded geographic query – perhaps one that includes those parishes directly adjacent to the MSA parishes (Plyer and Ortiz). Another logical next step stemming from this analysis would be to employ the recently released decennial Census data for a direct, longitudinal analysis of post-Katrina population and employment shifts (similar to that of R.W. Martin) – thereby reinforcing accuracy by using a consistent data source rather than several.

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