

Disaster Recovery in Black and White: A Comparison of New Orleans and Gulfport

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Abstract

This article investigates the role race and class play in the economic recovery after Hurricane Katrina. Comparing the economic recovery of the cities of New Orleans and Gulfport, as well as making comparisons at the state level, reveals distinct differences in the economic recovery of these places. Utilizing a panel analysis, this article analyzes the effect Federal Emergency Management Agency dollars had on the recovery of jobs and housing post-Katrina. Results show that in the areas of job recovery, money played little role in economic recovery even while controlling for the effects of race and class. These results inform the debate over recovery in economically depressed places and show the importance of connecting emergency and disaster planning, particularly the recovery stage, to economic development.

Keywords

economic/community development, defense/homeland security, public policy, generally

When Hurricanes Katrina and Rita hit the Gulf in 2005, few understood what the long-lasting impact would be. The facts of both disasters are now well known: an estimated US\$81 billion of damage to the Gulf region during Hurricane Katrina, US\$4 to 5 billion worth of damage attributed to Rita, 250,000 residents displaced after Katrina, 3 million residents evacuated during Rita, and more than 1,800 lives, disproportionately African American and poor, lost to the flood (Bratton & Haynie, 1999; Bratton, Haynie, & Reingold, 2006; R. G. Burby, 2006; Department of Homeland Security, 2006; Saulny, 2006). In the wake of these natural disasters, disaster preparedness, mitigation, and post-disaster local revitalization took center stage as federal, state, and local government entities took stock and created plans to rebuild the Gulf region.

Much of the scholarship to date, particularly on Hurricane Katrina, has focused on failures of emergency disaster planning, namely Federal Emergency Management Agency's (FEMA)'s lack of response (Eikenberry, Arroyave, & Cooper, 2007; Gerber, 2007; Petak, 1985; Schneider, 2005), the race and class divide after the storm (Elliott & Pais, 2006; Lavelle & Feagin, 2006; Stivers, 2007; Tynes, Hunter, & Neville, 2006), and difficulties that local and state governments face when attempting to rebuild after a natural disaster (Eckdish-Knack, 2006; Lewis, 2005; Liu, 2006; Olshansky, 2008). But public administration and policy scholars have largely been silent on issues of race and poverty (throughout) and the effects these have on public policy choices or

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actions at the local level. While some scholars have examined the effect of race on recovery in New Orleans (Baade, Baumann, & Matheson, 2007; Comfort, 2006; Elliott & Pais, 2006), discussion of the impact of the storm on other areas in the Gulf has not been widely in evidence. This article looks specifically at the effects of race and poverty on economic recovery in two metropolitan areas, New Orleans and Gulfport, Mississippi. The article considers the systematic variation in the way these communities have recovered after the hurricane season of 2005 that might be attributed to racial and economic differences or to targeted federal and state involvement. In short, the research tests whether racially and economically heterogeneous areas are slower to recover after disaster even controlling for state and federal investment.

Race, Class, and Disaster Management

Many communities in the Gulf region suffer from high levels of poverty. Following the storm, media reports highlighted many issues that faced the area both before and after the 2005 hurricane season. The most striking to many outside observers was the intersection of race and class in the wake of a natural disaster (Bates, 2006; Casserly, 2006; Congleton, 2006). In the United States, race and class have always been closely intertwined, and public policy has, at times, promoted institutionalized racism (Better, 2008; Leon, 1979). Thus, how a region will recover after a disaster is potentially connected to how policy makers and the public at large react to issues of race and class. In terms of economic health, cities with higher proportions of White residents have generally enjoyed more stable housing and job markets and have less politically complicated policy issues to debate. In places where there are severe shortages in both an educated workforce, the poor, and high proportions of minority residents, the literature has repeatedly uncovered systematic problems in housing and economic development (see Newman, 2008; Olshansky, 2008; Rogers, 2008; Vergara, 1999a, 1999b).

This research explores the part racial and class diversity play in facilitating or inhibiting recovery after an exogenous event. Because racial diversity can act as an impediment to cooperation when citizens deliberate and form policy (Frymer, 1999; Hutchings & Valentino, 2004; LeMay, 2005), it could be expected that, as the number of minorities within the community increases, there will be challenges in recovering after a storm. In this case, the proportion of minorities might act, in the whole, as an impediment to economic recovery, particularly in terms of job recovery post disaster.

Other scholars have pointed to the homogeneity of communities (something that New Orleans lacks), as a strength that assists in recovery (Oliver, 1999, 2001). Consistent with the scarce resources or "commons" theories of public policy (Ostrom, 1990), it is believed that race and class diversity act to decrease the likelihood that citizens will be able to cooperate when disaster strikes. The class component of this theory predicts that class has a separate and distinct effect on recovery (Hamilton, 1972; K. Q. Hill & Leighley, 1992). Class variables may also work in tandem with race to exacerbate barriers to community recovery; the racial composition and class structure of a community may interact causing poorer outcomes in recovery efforts that cannot be overcome by an influx of money or outside attention. This would be due to those residence having less access to both political and economic responses to assist them in making the quick transition back to full participation in the labor market. Thus, it is possible that severely distressed or high minority communities may not be in a position to benefit from investment and attention following a disaster, due to a variety of factors including pre-existing capacity deficits, racial and class divisions, or a severely depleted pre-existing economy. This research will explore the effectiveness of economic recovery in two metropolitan areas with very different racial and poverty compositions pre-disaster focusing on the impacts of state and federal investment in the wake of such an exogenous shock. It will also explore the dynamics of economic recovery in rural and exurban communities located far from the central core cities during Hurricane Katrina along the same metrics of racial and class composition.

In this study, the Metropolitan Statistical Areas (MSAs) of New Orleans and Gulfport are used to track economic recovery post disaster. MSA is defined by the United States Census as a geographic region with relatively high population density at its core. They are the focus of this study for several reasons. First, each MSA sustained significant damage during Hurricane Katrina and was critically important to its respective state in terms of economic stability and tax revenue. Second, the New Orleans and Gulfport metropolitan areas provide demographic profiles ideal for an examination of racial and class differentials in post-disaster recovery. Prior to the hurricane, New Orleans was one of the poorest and most racially segregated metro areas in the country. Although also a distressed city by most measures, Gulfport is less diverse, somewhat less poor, and the levels of racial segregation are lower. Thus, the two metropolitan areas represent different racial and poverty profiles, if only largely of scale, prior to the disaster. Third, the general demographics of Louisiana and Mississippi also provide an interesting context. In terms of education, poverty, and diversity, both states have similar profiles. Finally, programs for targeted state disaster assistance were developed in both states; Mississippi used a targeted approach for allocating disaster assistance so that only residents of the counties of George, Hancock, Harrison, Jackson, and Stone could apply for state assistance. Louisiana, in comparison, allowed for all residents within FEMA designated counties to apply for individual assistance. The policy differences in these two programs also allow for a comparison of disaster policies within the framework of general demographic and economic similarity.

Emergency Management and Public Policy

Public policy, according to Anderson (2003), typically emerges as a response to policy demands, or claims made by actors in the political system and can be defined as substantive, procedural, distributive, regulatory, or redistributive. Emergency and disaster relief policy falls into the procedural category as it involves how something is going to be done and who will take action. The low salience of the issue and the high complexity of creating policy solutions for this problem make it very difficult for citizens and policy makers alike to discuss (Downs, 1972). This complicates emergency and disaster mitigation policy because it requires both vertical cooperation as well as horizontal integration, as a myriad of stakeholders must come together to create a cohesive plan. With horizontal integration, where the focus is on the relationship between members *within* the community, we would expect that the political fragmentation that often accompanies policy making in high minority or poverty-ridden places would be an additional challenge facing decision makers post-crisis (Farazmand, 2001). Vertical coordination, where the focus is on the relationship between members or groups *outside* the community (i.e., the county, the state, and federal groups concerned with emergency management issues), would also be affected by the pre-existing racialized or poverty-related issues. The policy-making process does not occur in a vacuum; thus, in policy areas that require highly technical knowledge and integrated participation among political actors, policy is oftentimes not as effective as it could be.

Public policies are not created equally: political culture, socioeconomic conditions, capacity of public officials, and the interests of non-governmental actors all matter (Almond & Verba, 1989; Elazar, 1972; Kingdon, 1984; Lieberman, 2002). Racial composition of a locality matters to what types of policies are discussed as well as to how they are implemented. Disaster relief and emergency planning policies have been particularly challenging for public administrators and policy makers alike. The difficulties of planning for low probability, high hazard events, are made even more complicated by racial segregation within cities and counties (Elliott & Pais, 2006; Lavelle & Feagin, 2006; Stivers, 2007). While emergency planning is not a minority issue on its face, decisions about zoning, evacuation plans, and service distribution post-storm can have racialized effects, particularly if economic segregation is prevalent. We would see this racialized effect by looking at the local level for spotty recovery of jobs, less new construction, as well as lower rates of new businesses (or returning businesses), in highly heterogeneous areas.

One central problem with emergency and disaster mitigation policy is the fact that it is difficult to evaluate its success because each disaster is different; there is no “routine” to how much damage a natural disaster will do to an area, nor can the behavior of first responders be planned far in advance. Because most policy making is routine, the failure to evaluate the success of emergency plans in preparation for the next event does not follow the same metrics as traditional policies that most communities evaluate. For the most part, policy making in the area of emergency planning has been limited to a crisis-reactive management approach. In addition, for public administrators and officials, planning for projects directed at reducing the magnitude of future hazardous events is costly politically and economically; meanwhile policy makers often view current problems as more pressing and important. In addition, constituencies that advocate changes in disaster management policy do not represent a powerful political force until right after a disaster occurs (Petak, 1985).

In creating plans, local governments have used two approaches: preparing a stand-alone recovery plan or creating an integrated plan for the entire municipality, county, or region. The former is simpler to implement and easier to revise, while the latter has the advantage of linking recovery to broader economic, social, and environmental sustainability (Burby, 1999, 2003, 2005). R. G. Burby (2006) notes that, in the gulf, only Florida has passed local comprehensive planning mandates. The federal government has also had a long history of providing weak support for planning and strong support in the development of areas exposed to natural hazards. Local economic development has often trumped efforts to build safely; the greater New Orleans area (GNOA) is a perfect example of this. Currently, FEMA’s hazard mitigation program is driven by plans hastily prepared during the disaster recovery period rather than before the event. In addition, the National Flood Insurance Program (NFIP) does not charge sufficient premiums to cover storm losses as evidenced by a massive shortfall due to Katrina and Rita (Berke & Campanella, 2006).

In all, the policy-making environment at the local level is not conducive to creating comprehensive emergency plans. This is coupled with a lack of direction or incentives by the federal government to nudge local governments in the direction of creating the horizontal networks needed during natural disasters (Heinz, Laumann, Salisbury, & Nelson, 1990; Hill, 1991; Mintrom & Vergari, 1998). These issues are further complicated by competition over scarce resources at the local level between minority and majority groups. As the literature on minority representation shows, increases in the minority population may lead to more representation of minorities in government but may not result in substantive policy changes (Bratton & Haynie, 1999; Bratton et al., 2006; Haynie, 2002).

Understanding race and class and how they affect the policy process, especially in the area of emergency management, has also been lacking historically (Chamlee-Wright & Storr, 2009; Fothergill, Maestas, & Darlington, 1999; Shughart, 2006; Silva, 2009). What we do know from this research is that policy makers need to attend to the “specific diversity issues of each area, plan for demographic changes and ensure that all members of the community are involved in the disaster-reduction process” (Fothergill et al., 1999, p. 168). As each municipality is the primary responder during natural and man-made disasters, it is up to these leaders to incorporate the input from all demographic groups.

As group theory suggests, minorities and the poor typically are not included in the policy process because their needs are many and their ability to organize is limited (Schattschneider, 1960; Truman, 1951). It is up to policy leaders to seek out the needs of these groups and bring them into the process to ensure that when a disaster strikes, these communities know how to react. Thus, this work is ultimately a story of which kinds of communities “win” economically post disaster and attempts to test whether high proportions of minority or poverty-stricken groups affect the recovery of the job market. It would seem that, with the flurry of activity surrounding the development of policy adjustments post-Katrina, the critical issue of how the disadvantaged groups should be integrated into the recovery process remains overlooked (Cowen, 2010; Greg, 2007; Keithley & Rombough, 2007; Thomas, 2010).

Hypotheses

Based on the literature discussed and the case comparison at hand, the following hypotheses are tested:

Hypothesis 1: Higher percentages of both minorities and lower income groups decrease the amount of economic recovery post disaster.

Hypothesis 2: Higher levels of funding produce a more robust post-disaster economic recovery, regardless of racial and economic disparities.

Hypothesis 3: Targeted state emergency funds will result in better recovery in areas hardest hit by disaster.

Methodology

Case Descriptions

This analysis compares economic recovery data for New Orleans and Gulfport, as well as the balance of the states of Louisiana and Mississippi. For New Orleans, the 7-parish MSA is used to make direct comparisons with the rest of Louisiana. The parishes included in this group are: Jefferson, Orleans, Plaquemines, St. Bernard, St. Charles, St. Tammany, and St. John the Baptist. The population of these seven parishes accounts for over 1.3 million residents. The Gulfport, Mississippi MSA contains the following counties: Harrison, Jackson, Hancock, Stone, and George. The population of these five counties was nearly 400,000 in the year 2000. Extensive information on parish and county racial, poverty, and economic information as well as variable description and sources can be found in the appendix.

Demographics of New Orleans and Gulfport

The New Orleans' poverty rate in 2000 was 28% compared with 12% for the entire nation (U.S. Census Bureau, 2008). This number dropped to 23.4% from the years 2005 to 2008 while the average rose to 18.4% in the United States (U.S. Census Bureau, 2011). In 2010, the overall poverty rate stands at 24.1%. The number of high-poverty census tracts (with more than 40% of residents in poverty) grew from 30 in 1980 to 49 in 2000. In addition, the population within these tracts grew 12% from 96,417 to 108,419 in that same time span. The number of these high-poverty tracts have since dropped to 34, with a population of 48,960 living in these areas. The Black poverty rate was more than three times the White poverty rate (35% vs. 11%), and 43% of Blacks lived in high-poverty neighborhoods; this trend has remained persistent throughout the 2000s (The Brookings Institution, 2005; U.S. Census Bureau, 2006).

The Dissimilarity Index, a measure of racial segregation, ranks the city of New Orleans high among large cities (CensusScope.org, 2000). Blacks and Whites lived in different worlds, marked by geographical separation as well as by other measures of socioeconomic status. At the time Katrina hit, New Orleans was one of the poorest and most segregated cities in America. Residential segregation was so prevalent that for there to be an equal distribution of Blacks and Whites in every neighborhood within the city, 69% of Black residents would have had to relocate (Frey, 2000). In 2010, this number has dropped along with the overall proportion of the African American population to 63.9% (Frey, 2010). In addition, poverty played a large role in the stratification of New Orleans with the city experiencing a 12% unemployment rate in 2004, which at the time of Katrina was double that of the nation (Holzer & Lerman, 2006). Research by the Brookings Institution found that in 2000, New Orleans ranked second among all U.S. cities in concentrated poverty, behind El Paso, Texas (Durant & Sultan, 2008).

In Gulfport, the poverty in the year 2000 was 17.7% for individuals compared with 12% for the nation. In 2008, the rate was 18.2% compared with 14.3% for the country. In 2010, this number has risen to 21.6% compared with the United States' average of 14.3% (U.S. Census Bureau, 2000, 2010). Gulfport only had two high-poverty census tracts in the year 2000; this represented a decrease of two from the year 1990. Like New Orleans, the poverty rate of Blacks was nearly triple that of White residents (approximately 30% to 13% in 2008).

The Dissimilarity Index for the Gulfport-Biloxi MSA was 59.3, meaning that nearly 60% of White residents would need to move to have a racially balanced residential distribution (Frey, 2000) in 2000 and in 2010 these figures have remained unchanged. What is most notable about the Gulfport area is its lack of income diversity compared with the rest of the state. However, unlike New Orleans, Gulfport is Whiter and less poor. In Gulfport, minority concentration was 17.8% at the time of the storm while the concentration of residents living in poverty (i.e., under the poverty line) was 16.5%.¹

Current Demographics of Louisiana and Mississippi

In Louisiana, the racial composition is very different from that in New Orleans. Overall the state is Whiter (approximately 63% compared with 55% in New Orleans), than the city. In terms of per capita income, the American Community Survey's 5-year estimates report that from the years 2007 to 2011, the per capita income was 23,853 throughout the state, and 25,668 within the city of New Orleans.

In Mississippi, the economic and racial picture is fairly similar to Louisiana with a few important exceptions. Despite Mississippi's efforts to become more economically diversified, it remains a very poor state. In 2003, Mississippi ranked 51st in the nation (ranking includes the District of Columbia) in terms of per capita income. Mississippi pre-Katrina had economic and social challenges. According to the American Community Survey's 5-year estimates, the per capita earning in Mississippi during the years 2007-2011 was 20,521 and 20,845 in the city of Gulfport. In 2005, the percentage of people living in poverty in the United States was 13.3%, and in Mississippi that figure was 21%.

Variables

Studies of aggregate-level economic impacts have used many ways to determine the short- and long-term effects of natural disasters on the economy. Some studies have used indicators such as the employment or unemployment rate, number of small businesses created post-disaster, personal income changes, tax receipts, and gross regional product (Skidmore & Toya, 2002, 2013; K. J. Tierney, 1997; K. Tierney, 2012; K. Tierney & Oliver-Smith, 2012; Xiao, 2011). This work has largely shown that in the aggregate, areas are fairly resilient to natural disasters, but do little to ascertain the more localized effects of natural disasters.

Data were drawn from a number of different sources for this analysis. Annual county-level data on employment and educational attainment is reported by the Longitudinal Employee Household Dynamic data set, a data set created by the Center for Economic Studies under the Business and Industry Branch of the Census Bureau. The main dependent variable—the net number of new jobs—is defined as employees in newly created jobs who were not employed by the same employer in the previous quarter. This information is divided by the total number of jobs in each place minus the total number of job separations (i.e., firings, leaves of absence, or downsized positions) for each year and each location in the data set to create a rate of net new hires.

$$\text{Net New Hire Rate} = \frac{\text{New Jobs Added} - \text{Job Separations}}{\text{Total Jobs}}$$

This indicator was chosen as the measure of economic recovery for several reasons. First, it acts as an index variable because it simultaneously tracks the new job activity within an area, job separations, jobs created, and total jobs in each local economy for each quarter throughout the time period under examination as a dynamic percentage, meaning that it changes from quarter to quarter with a range of $-.50$ to $.50$ indicating a net job shift of half a percentage in either direction. This information is provided by the Quarterly Workforce Indicators (QWI) survey as part of the Longitudinal Employee Household Dynamic data set for the Census and is frequently used to determine overall economic performance in terms of the strength (or weakness) of the American labor market ("Local Employment Dynamics Extraction Tool," 2011). There are some limitations to this measure however. First, the way the census collects these data is dependent on county and state agencies reporting information in a timely manner, and in some cases certain counties or parishes did not submit their information; thus, no economic data could be entered for certain periods. Second, the measure does not track individuals identified by the census as being singularly affected by the storms. The census does have a subset of individuals surveyed post-Katrina, but these data weren't collected on a quarterly basis after the storm, nor did they include residents surveyed in Mississippi and thus cannot be included in the data set. In addition, as the special census product only surveyed a subset of the affected population, generalizations to the overall economy would be limited. Third, the dependent variable does not include employment sector-by-sector; it looks at the overall economy instead.

The Local Employment Dynamic database is a joint state–federal partnership that provides details about America's jobs, workers, and local economies and communities. The reports gathered from local and state employment agencies are aggregated into quarterly workforce reports for each county throughout the United States making this a natural place to ascertain sub-state changes in economic development throughout a disaster. The QWI provides information about trends in employment, job creation, and destruction, as well as earnings by industry, age, and sex.

For each geographic entity included in the data set, the net new jobs index variable represents the estimated number of workers who started a new job (Abowd, Stephens, & Vilhuber, 2011, pp. 4-6). Specifically, New Hires represents the total number of workers that, while they worked for an employer in the specified quarter, were not employed by that same employer in any quarter of the previous year. The Total Jobs component of the dependent variable reflects the beginning of the quarter estimate of the total number of jobs in the economy on the first day of the reference quarter (Abowd et al., 2011). Thus, a worker is counted in the Total Jobs figure if he or she has positive earnings in both $t - 1$ and t . Finally, the Job Separation portion of the variable is calculated as the estimated number of workers who had a job for at least one previous full quarter and then the job ended (Abowd, Stephens, & Vilhuber, 2006, pp. 75-77). The number is an estimate due to the fact that actual separation data are not available until the following quarter when reports from each state are received by the census. Thus, a worker is defined as separated if he or she had positive earnings in $t, t - 1$, but no earnings in $t + 1$; in effect, this identifies the separation distinct in the current quarter from the previous one.

New hires as a variable have also been used in other research measuring recovery from natural disasters. For example, Brookings and the Greater New Orleans Community Data Center (Brookings/GNODC) have tracked various recovery indicators since the disaster including, but not limited to: new firm development, average wages, and increases and decreases in various employment sectors (Liu et al., 2011). Although Brookings has followed additional indicators, such as gross metro product per job created, non-farm jobs by sector, and average annual wages over a 6-year period, these were not viable for use in this study due to the fact that the Brookings Institute has done little comparative work on Mississippi, nor do they include rural parishes in their analysis of the recovering economic. In addition, most data on the counties and parishes located outside the New Orleans MSA are collected sporadically by the census; thus, researchers have shied away from conducting this type of work.

The main independent variables for this study are the quarterly percentage of minority resident new hires to overall new hires, the percentage of high school graduate new hires to overall new hires, the percentage of residents with less than a high school diploma new hires to overall hires, and quarterly job turnover. The quarterly data were then added together creating an yearly indicator of minority hiring, high school graduate hiring, less than high school graduate hiring trends as well as yearly job turnover for each location. Finally, federal and state investment post disaster was collected directly from each state's emergency management departments as separate variables (i.e., individual assistance, public assistance, and state assistance for each location). The rationale for including these indicators is to provide comparable time-based variables that track the dimension of employment in the subgroups (disadvantaged Blacks and those in poverty) of interest. Where the percentage of high school graduates and percentage of those employed with less than a high school diploma are used, these act as a proxy for poverty as measures of poverty are very difficult to untangle but are identical to what other scholars have used in other studies (K. J. Tierney, 1997; K. Tierney, 2012; K. Tierney & Oliver-Smith, 2012). Time is added as a control variable in the following models and is used to take the value 0 or 1 to indicate the absence or presence of a categorical effect that may be expected to shift the outcome. A dummy variable for each year is also used as a device to sort data into mutually exclusive categories, in this case, isolating time as a separate effect should denote increases in economic activity if those coefficients are positive for an isolated year, or negative indicating negative overall growth.

Federal and state disaster funds, another important variable to consider in increasing the likelihood of economic activity throughout the period, are also included in the models. These are the total amount of funds approved for each county under examination during the period 2006-2007. This information came from the office of Research and Special Projects housed in the Louisiana Recovery Authority (Office of Community Development, 2008), and Mississippi's Emergency Management Agency Public Information Office (MEMA) as well as through a Freedom of Information Request to FEMA. The dollar amounts include Individual and Household Assistance (IA), which also include FEMA's Individuals and Households Program (IHP) and Public Assistance (PA) funds dedicated to recovery in each county. IHP assists homeowners and renters with reconstruction after a declared disaster (FEMA, 2008). Funds help applicants pay for temporary housing, repair, and replacement, disaster-related medical services, burial costs, and moving expenses. FEMA's PA Grant Program directs funding to states, local governments, tribal areas, and certain non-profit organizations to assist in helping them respond during and after a declared disaster. For this study, the percentage of each state's total funds received by each parish/county was calculated.

The Louisiana Road Home program was designed as a separate, state-level effort to provide compensation to homeowners affected by Hurricanes Katrina and Rita. It offered up to US\$150,000 in compensation to homeowners for losses sustained after the hurricanes. It also provided compensation to owners of rental properties in the form of loans and grants for rebuilding. The amount of funds contributed under the Road Home program was recorded for each county. Again, the percentage of total funding received for each parish was used.

Mississippi had a similar program; however, instead of providing funds for all affected counties, Mississippi aimed rebuilding efforts at the devastated Gulfport area. The Housing Assistance Program (HAP) provides homeowners with money to rebuild homes that sustained damage during the storm. The program had two phases. Phase 1 was directed at homeowners with homeowner's insurance and Phase 2 at homeowners with a household income below 120% of area median income with Hurricane Katrina storm damage. Like the Road Home program, HAP offered up to 150,000 dollars in compensation for hurricane victims (Mississippi Development Authority, 2005).

The Office of the Federal Coordinator for Gulf Coast Rebuilding at the Department of Homeland Security, in cooperation with FEMA, the Small Business Administration (SBA), and

the Department of Housing and Urban Development (HUD), compiled data to assess the extent of damage (type, insurance status, and housing type and tenure) after Hurricanes Katrina, Rita, and Wilma (Department of Homeland Security, 2006). The report lists the percentage of occupied housing units with damage (severe, major, or minor). This information was recorded for all counties under examination.

Methods and Analysis

The first part of the analysis compares counties in the MSAs of New Orleans and Gulfport to their respective states. These analyses compare overall state to central city economic performance in job creation during the same periods. Counties, not cities, are the unit of analysis due to the lack of information at the city level for many of Louisiana and Mississippi's smaller cities. The unit of time used in the following analysis is a quarter.

This analysis uses ordinary least squares (OLS) regression estimating robust standard errors for each county over the 8-year period. OLS regression typically assumes that the residuals are independent. In the case of this analysis, the data collected on each county or parish during the time period may not be independent, thus violating the independent principle of regression that states that errors associated with one observation are not correlated with the errors of any other observation. In this case, it is likely that job creation within one parish will tend to follow a predetermined path, or be more like one another than the kinds of jobs created in a parish located right next door. A robust standard error indicates that the observations are clustered by some unit, in this case county/parish, and that the observations may be correlated *within* unit, but would be independent *between* county and/or parish. The use of robust standard errors, or Huber–White estimation relaxes the assumption that errors are independent and/or identically distributed. Essentially, the use of the clustered function in an OLS regression model is to make adjustments in the estimates that take into account some of the flaws in the data (Davidson & MacKinnon, 1993; Wooldridge, 2010).

Prior to delving into the analyses, a comment about the role of race and class as separate variables in the analysis should be made. Traditionally, researchers have utilized race as a proxy for class as African Americans have traditionally overrepresented among socioeconomically disadvantaged groups (Banfield & Wilson, 1963; Caliendo & McIlwain, 2011; Gilens, 1999, 2012). Class, typically measured by poverty level in the census, acts as a several impediment to housing, jobs, and also affects residential mobility. However, because poverty levels are measured only in the decennial census for many areas, and some of the more rural counties included in this analysis have no reliable data for poverty levels throughout the period under examination, high school education levels are used as a proxy. Race and class as variables, however, are separate phenomenon and are appropriate to analyze separately in the following analyses for three reasons. First, the majority of the poor in the United States are Whites and secondly, using race without class in analyses or vice versa encourages the illusion that class is a confounder of racial differences. Race, in the United States, is an ascriptive characteristic and has also been shown to act as an antecedent to class in various settings (i.e., job placement, college admissions, housing, etc.; Rank, 2004). Finally, in sociological research as well as in the health professions, race has often been found to act as a “caste” within American politics and policy making, limiting access to goods and services, while class is largely an invisible quality that can act as an impediment to services or access but is not a *visible* indicator for discrimination (Cox, 2000; Kawachi, Daniels, & Robinson, 2005).

In this case, an interaction term, while appropriate in many designs, is not suitable for this project given the fact that the data used in this analysis are not from one source and, in some cases, were not collected at the same time. Therefore, as the QWI does not collect race and class data together on a quarterly or annual basis but simply reports the *proportion* of new employees

Table I. New Orleans Versus Louisiana.

	New hires in the greater New Orleans area (<i>n</i> = 224)	New hires outside the greater New Orleans area (<i>n</i> = 960)
% Black of new hires	-0.02 (0.033)	-0.049 (0.022)*
% HS grad of new hires	0.369 (0.183)*	0.166 (0.159)
% less than HS of new hires	-1.274 (0.296)**	-0.328 (0.168)
% turnover	-1.144 (0.079)**	-0.79 (0.080)**
Year 2004	1.22 (0.662)	-0.643 (0.416)
Year 2005	-1.563 (0.965)	-0.65 (0.548)
Year 2006	5.419 (0.881)**	2.17 (0.627)**
Year 2007	3.891 (0.751)**	1.836 (0.502)**
Year 2008	1.825 (0.792)*	1.873 (0.445)**
Year 2009	2.341 (0.864)**	-0.268 (0.706)
Year 2010	1.708 (0.831)*	0.485 (0.395)
Constant	16.903 (2.738)*	6.33 (2.709)*
<i>F</i> statistic	26.77	13.35
Adjusted <i>R</i> ²	.72	.23

p* < .05. *p* < .01.

that have a racial characteristic or education level in given quarter, adding a multiplicative term to ascertain the effect of race and class together on economic activity throughout the time period would result in unreliable coefficients that would be difficult to interpret.

Findings

Statistical Results: New Orleans and Louisiana

The analysis proceeds in several stages to test the hypotheses. Regression analyses using the clustered regression technique are used. Robust standard errors, not *t*-statistics are reported underneath coefficients in parentheses. Descriptive statistics that show the basic contours of the economic health in terms of earnings by selected groups in both areas are presented in the appendix. The dependent variable here is an index variable that measures net new hires in each parish within the GNOA during the years 2003-2010 that was review in detail in the preceding paragraphs. The model includes as variables of interest: Percentage of Black new hires to overall new hires, percentage of high school graduate new hires to overall new hires, and residents with less than a high school diploma to overall new hires. Additional control variables include the

following: quarterly percentage of job turnovers, and dummy variables indicating the passage of time. To avoid collinearity in the model, the year 2003 was removed as a reference category.

In this model, the percentage of Black new hires to the number of overall new hires within the New Orleans MSA has a negative, but non-significant impact on the amount of new jobs recovered. This indicates that within the MSA, high percentages of Blacks seeking employment in the post-Katrina period had little effect on the overall hiring activity throughout the time period under observation. The ratio of high school graduates to overall new hires, a proxy for poverty in the model, throughout the same period has an unexpected, positive, non-significant effect. The percentage of employees with less than a high school diploma to new hires throughout the same period, possibly a better proxy for poverty effects in the model, has a strongly, negative and significant effect. The effect of time post disaster was significant in the years 2006 through 2009, illustrating that the passage of time has a large, positive impact on recovery efforts post-Katrina. The R2 for the model is .73, indicating that almost 73% of the variation in new hires is accounted for by the variables in the model. Hypothesis 1, which states that a higher minority percentage would have a negative relation to job creation, was not confirmed and Hypothesis 2, which is concerned with poverty and its effect on job creation, is confirmed for the city of New Orleans.

Outside the New Orleans metropolitan area in the state of Louisiana, the data tell a different story. Higher percentages of Blacks and low educated residents are associated with lower net employment growth for the state as a whole. Both Hypotheses 1 and 2 are supported here with the exception of the ratio of High School diploma holders to overall new hires during the period under examination. Turnover has a strong and negative effect on net new hiring activity as well. In most cases, the passage of time had a significant and positive affect on job activity during the years 2006-2008. The fit of the model is moderate, predicting about 24% of the variance in new hiring activity through the time period.

Effect of Funding in Louisiana and Mississippi

The regression analyses that include funding levels reveal a more disturbing effect on job creation post-Katrina. In this model, it is important to note that the yearly dummy variables are not included; funding given to residents and businesses in Louisiana is only recorded for the year 2006; therefore, this model is static, showing the effect of all funds dispersed in the year 2006 on job creation.

Inside the New Orleans metropolitan area, none of the funding streams had a statistically significant effect on job creation throughout the panel (Table 2). The percentage of minority resident new hires is not significant. The ratio of residents without a high school diploma did have a significant and negative effect on net new hiring activity; thus, Hypothesis 2 is confirmed. The amount of outside investment has no significant effect on the development of new jobs in the New Orleans metropolitan area. Looking at the overall state, Table 2 also shows the effect of funding on job creation in the parishes located outside the greater New Orleans metropolitan area. Here, we observe that only the quarterly turnover rate was significant and negative, none of the other variables of interest had significant effects. In all, it would seem that Louisiana, in terms of job creation, as a whole did not benefit much from state or federal funding streams.

To ascertain the effect of funding on the Gulfport area and compare those results with the entire state, an additional model was run that includes the effect of minority and poverty as well as IA and PA dollars and the state's HAP. In Table 2, only the percentage of turnover has a significant effect on economic recovery over the time period within the Gulfport metropolitan area. The number of Black new hires had a positive and significant effect, which is unexpected. As no funding was given to counties outside the Gulfport area based on the guidelines of the HAP program, the second regression regarding funding is not included.

Table 2. Effect of Funding in Louisiana and Mississippi.

	Funding in the greater New Orleans area (n = 28)	Funding outside the greater New Orleans area (n = 120)	Funding in the Gulfport Metropolitan area (n = 20)
% Black of new hires	0.226 (0.161)	-0.035 -0.098	0.233 (0.080)*
% HS grad of new hires	1.622 (0.820)	-0.388 -0.356	-0.082 (0.874)
% less than HS of new hires	-2.857 (1.356)*	0.425 -0.42	2.346 (2.048)
% turnover	-1.496 (0.384)**	-0.697 (0.188)**	-1.598 (0.350)*
% FEMA individual assistance	-0.054 (0.077)	0.008 -0.013	-265.316 (224.550)
% FEMA public assistance	-0.634 (0.603)	0.042 -0.036	153.17 (126.571)
% road home assistance	0.937 (1.009)	0.03 -0.015	70.457 (67.068)
Constant	11.554 (16.051)	8.081 -6.869	-14.005 (25.267)
F statistic	13.25	3.03	13.120
R ²	.64	.14	.88
Adjusted R ²	.52	.09	.82

Note. Year 2006 only. FEMA = Federal Emergency Management Agency.

*p < .05. **p < .01.

Panel Results: New Hiring Activity in Gulfport and Mississippi

In terms of new hiring (Table 3), the passage of time has a positive effect on job creation in the MSA post-Katrina. It should be noted that the only significant variable in the model is the percentage of job turnover throughout the time period under examination, and the year 2007, which was 2 years post-Katrina and 1 year after all funding (federal and state) was recorded as expended. This could indicate that an unobserved variable (i.e., policy adoption or major loss of industry within a particular sector) is affecting the model but not directly observed. The fit of this model is moderate with 46% of the variance in net new job creation being explained by the variables used. Interestingly, minority and low-education ratio percentages do not have the anticipated direction (i.e., negative) and are not significant.

Outside the Gulfport MSA, which has the most similar socioeconomic characteristics to New Orleans, we see that Hypotheses 1 and 2 are confirmed; having higher percentages of Black new hires and new hires with only a high school diploma has a negative and significant effect on net new hiring activity throughout the time period under observation. In addition, the passage of time, most notably in the years 2006, 2007, and 2009, has a positive, significant effect on net new hiring activity. The fit of the model is moderate, predicting 20% of the variance in new hiring activity.

Comparison of New Orleans and Gulfport

To provide a summary of the forgoing analyses, Table 4 shows the hypotheses tested and the results from the analysis for each state and MSA of interest.

Table 3. Gulfport Versus Mississippi.

	New hires in the greater Gulfport area (n = 130)	New hires outside the greater Gulfport area (n = 1,144)
% Black of new hires	0.067 (0.078)	-0.025 (0.021)*
% HS grad of new hires	0.543 -0.426	-0.2 (0.078)**
% less than HS of new hires	-0.319 -0.329	0.075 (0.102)
% turnover	-1.089 (0.139)**	-0.79 (0.066)**
Year 2005	0.537 (0.740)	0.997 (0.314)**
Year 2006	5.516 (2.211)	1.439 (0.303)**
Year 2007	2.995 (1.000)*	1.367 (0.377)**
Year 2008	0.482 -1.663	0.094 -0.37
Year 2009	-1.963 -1.489	-1.573 (0.552)**
Year 2010	-0.38 -1.557	-0.024 (0.350)
Constant	-1.04 -10.162	8.662 (1.879)**
F statistic	9.97	29.02
R ²	.46	.20
Adjusted R ²	.41	.20

* $p < .05$. ** $p < .01$.

Table 4. Overview of Hypotheses Tested.

	Louisiana	New Orleans	Mississippi	Gulfport
Hypotheses 1: High percentages of minorities decrease economic recovery.	✓	✗	✓	✗
Hypotheses 2: A high percentages of poverty decrease economic recovery.	✓	✓	✓	✗
Hypotheses 3: Targeted state emergency funds will result in higher economic recovery.	✗	✗	✗	✗

When testing the effect of high proportions of African American residents in the job market on economic recovery, outside the New Orleans MSA, Hypothesis 1 was confirmed. In New Orleans, however, economic recovery was not statistically affected by high percentages of minority residents; thus, the hypothesis is not supported. In Mississippi, outside Gulfport, where percentages of minorities were significantly higher in the workforce, there was a statistically negative effect on economic recovery. In terms of residents with lower education (a proxy for poverty), in the state of Louisiana, both inside and outside the MSA, a lack of education had the expected negative effect on economic recovery. In Mississippi, outside the Gulfport area, which

has similar socioeconomic characteristics to the city of New Orleans, an increase in lower educated workers as a proportion of all new hires had a significant and negative effect on net new hiring activity.

In terms of funding, in neither the states nor the MSAs, did any stream of funding have a significant effect on net new hiring activity during the period under examination. Job turnovers, a control variable, had significant effects in the models where it is included, and in most cases this effect was negative illustrating the volatility of job creation in these places post-Katrina. Time, a dummy variable added to ascertain the effect of the passage of time post disaster, had positive effects in the models, illustrating that although job creation was limited, the passage of time negates the effect of poverty on positive, local economic activity.

Discussion and Conclusion

Based on the findings just discussed, several conclusions can be drawn. In New Orleans, poverty, not race, appears to be related to new job creation. In other words, simply being a location with a large minority population does not appear to hinder economic recovery after disaster. Again, these results may mask some of the internal dynamics of the local economy (i.e., which sectors experienced the most loss, industries that have high versus low minority hiring pre/post disaster, etc.), but in terms of general economic performance, the results show that economic recovery is possible regardless of high proportions of minority groups. In terms of the impact of federal and state funding, inside and outside the New Orleans metro area, assistance dollars had no statistical effect. In Gulfport, neither poverty nor race had a significant effect on the emergent economy directly after the storm. In terms of the impact of federal and state funding in Mississippi, none of the funding streams to local residents, NGOs, and public agencies had a significant effect on the economy in terms of new job creation.

Overall, high minority percentages and poverty dampen recovery statewide but not in the metropolitan areas most heavily damaged. However, the passage of time plays a critical role in economic recovery. For both New Orleans and the state of Louisiana, new jobs increased with the passage of time after the hurricanes. This pattern was also observed for the state of Mississippi as a whole. The high concentrations of funding and attention post disaster appear to have had limited results in overcoming pre-existing capacity constraints. It is surmised that because these funds were used primarily for repairs and construction of physical infrastructure in the aftermath of disasters, that the connection between PA and IA only helps to keep (or bring) temporarily displaced residents back home, they do not play a significant role in creating capacity for producing new jobs. PA dollars were funds directed at local governments, NGOs, quasi-public entities, school districts, and other units of government to repair infrastructure damaged after the hurricanes. In addition, existing contracts, staff capacity, as well as expertise and organizational infrastructure, may have aided these public organizations in promoting recovery. These organizations and local government units receiving PA funds could be directly responsible for job creation. But, the record in Gulfport also suggests that targeted state assistance can produce better results, at least in the short term. That the passage of time seems to have been particularly unkind to Gulfport raises issues of the persistence of any immediate gains.

When comparing the results from the analysis of recovery in New Orleans to the rest of the state, some interesting trends can be seen. First, race had more of an effect outside the GNOA, which is unexpected due to the high concentration of people of color living in the city. This may illustrate more endemic issues of racial disparities generally in Louisiana. It would seem that the disaster assistance sent to the state of Louisiana and New Orleans has had little to no effect on the creation of new jobs. These dollars may have helped in other ways, but the impact of funding is not captured by the data presented here. In the Gulfport area, where racial diversity and poverty were not as high, neither per cent minority nor proportions of uneducated residents in the job market depressed recovery.

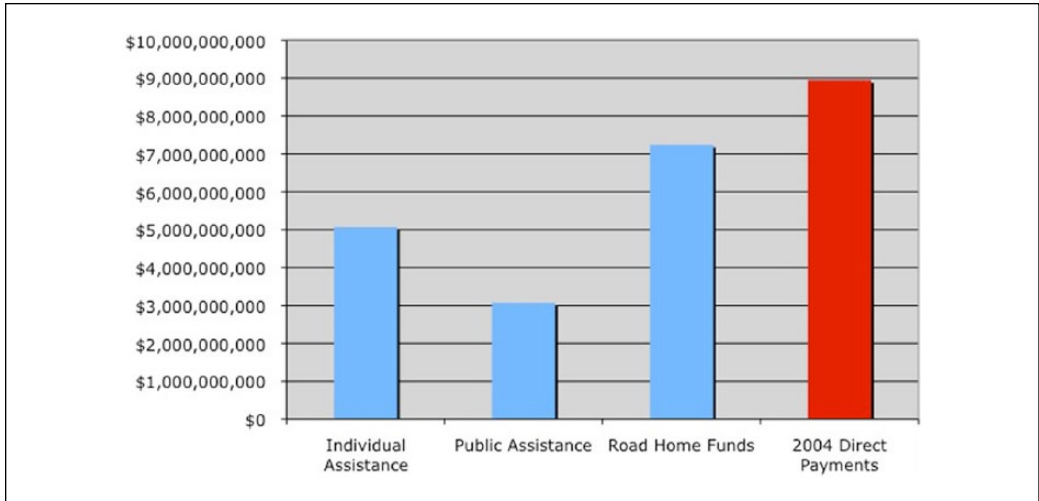


Figure 1. Emergency funding in context.

For the state of Mississippi as a whole, race and lack of education limited job creation. Taken together these findings suggest that racial diversity challenges economic recovery after a disaster more than poverty, but only in areas that have relatively less racial diversity overall (e.g., out-state, rural areas, and less segregated metropolitan areas). In short, while post-disaster media coverage dramatically captured the plight of African American residents trapped in New Orleans, minorities in more isolated areas may suffer greater damage long term.

Lessons for Public Administration

What can be learned from the analysis here? First, high concentrations of African Americans can have depressing effects on job creation post disaster in certain circumstances. Second, federal and state funding programs may have very little effect on helping areas to recover post disaster, and the mechanism by which these dollars translate into economic health post disaster is not as straightforward as current policy and procedures would indicate. It could be that individuals and PA funds, unless they are targeted toward enhancing local economies, or explicitly include funding to community-based organizations and retraining programs for individuals, will have limited effects on economic health post disaster. The notion that emergency management as a largely procedural policy, where once a disaster strikes, outcomes are assumed to follow a fairly predictable path may need to be revisited particularly as the economic redevelopment is concerned. Public officials need to determine if economic recovery is part of the procedural plans of emergency management policies during the development stage. If not, which organizations, individuals and/or public and non-profit organizations need to be included in the planning process to ensure that economic recovery, not just infrastructure reconstruction is swift, and is uniquely tailored to fit the population of each location. Finally, the mixed results of funding could also imply that not enough money was spent on disaster recovery; it could also mean that individuals and public organizations that received the funds spent funding ineffectively.

Putting the amount of post-disaster funding in context supports the former contention. The total amount of funding from all streams post-Katrina was just over US\$15 billion² (see Figure 1). This total includes Individual Assistance that was granted to individuals for housing needs and PA that includes funds that were granted to state and local governmental, non-profit, and non-governmental agencies for rebuilding and repairing infrastructure after the hurricane season.

As an example, regular non-disaster-related direct income transfers in 2004 far exceed disaster assistance.

From a policy perspective, this research suggests that targeted disaster relief funding may be more effective than a more dispersed approach. In fact, it suggests that funding might better be directed at building capacity in communities, particularly the PA funds, in addition to providing basic monies for reconstruction efforts. The creation of pilot programs for creating economic development should be a focus in future disaster relief efforts. From a public administration perspective, the formulas used to determine eligibility for IA and PA often favor home and property owners and the results, particularly in rural areas of both states, seem to support the idea that community capacity is not simply something that can be equated to amounts of money spent to rebuild infrastructure. Furthermore, this research suggests that policy makers and planners need to explicitly consider concentrated relief programs for minority residents in more remote communities. This research also highlights the need for local policy makers and community leaders to consider the economy more specifically in comprehensive emergency management plans. Taking into account the quality of jobs created by each local economy and the training that may be needed to facilitate retraining of local populations is something that may need to be more integrated for future disasters. The lack of direction from other levels of government to create and sustain the types of horizontal partnerships needed to foster job growth post disaster is a missing piece that should be explored by researchers in this area as well. Finally, a disaster funding package that emphasizes assistance to local governments and other community organizations also appears important as such institutions can serve to anchor communities and assist in redevelopment post disaster.

Appendix

Table A1. Variable Source Information.

Variable	Source
New Hires Index	Local Employment and Household Dynamics (LEHD) Dataset* (http://lehd.did.census.gov/led/led/led.html)
Percentage of Black Resident New Hires	Local Employment and Household Dynamics (LEHD) Dataset (http://lehd.did.census.gov/led/led/led.html)
Percentage of High School Graduate New Hires	Local Employment and Household Dynamics (LEHD) Dataset (http://lehd.did.census.gov/led/led/led.html)
Percentage of New Hires with Less than HS diploma	Local Employment and Household Dynamics (LEHD) Dataset (http://lehd.did.census.gov/led/led/led.html)
% of Individual Assistance Received	Federal Emergency Management Agency (FEMA; Obtained via FOIA request)
% of Public Assistance Received	Federal Emergency Management Agency (Obtained via FOIA request)
% of State Program Funding Issued	Road Home Program, Housing Assistance Program. (Obtained via FOIA request)
Year	Coded 1 for year of interest, 0 for all other years.
% Severe Damage	Department of Housing and Urban Development (http://www.dhs.gov/xlibrary/assets/GulfCoast_HousingDamageEstimates_021206.pdf)
Quarterly Job Turnovers	Local Employment and Household Dynamics (LEHD) Dataset (http://lehd.did.census.gov/led/led/led.html)
Average New Hire Earnings by Education	Local Employment and Household Dynamics (LEHD) Dataset (http://lehd.did.census.gov/led/led/led.html)

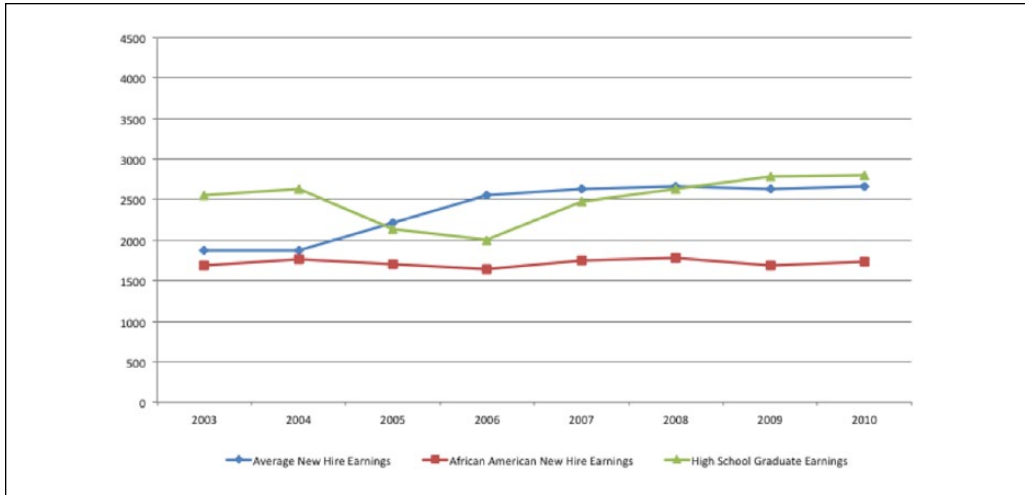


Figure A1. New Orleans metro area average earnings.

Author's Note

*The Local Economic and Household Dynamics (LEHD) and Local Employment Dynamics (LED) data set, as well as the Bureau of Labor Statistics (BLS), collects data only periodically from sparsely populated places, making an analysis of rural recovery very difficult. While not a comprehensive measure of economic recovery, new hires provides a viable relative measure on which municipalities can be compared because: all counties have to report this information at least once a year to the LEHD and the BLS; the measure comes directly from businesses located within each county (i.e., not collected from secondary sources), and numbers are verified by each state's bureau of labor before being sent to the BLS.

Summary Statistics of Louisiana and Mississippi

The following figures illustrate the difference between average earning among various sectors of New Orleans and Gulfport during the period of examination. Consistent underperformance of African American earnings throughout the region is pervasive and concerning for economic recovery of this group.

As the first figure illustrates, average earnings within the New Orleans MSA for new hires increased steadily post-Katrina. At the same time however, African American earnings stayed stable and even decreased slightly throughout the same period. Finally, looking at the earnings averages for high school graduates, we see that there was a dip in average earnings post-Katrina with a return to the baseline by 2008. One thing to note about the structure of the Local Employment Dynamics data is that employment information is separated either by education level and sex, race/ethnicity, or by age group/sex. This makes it impossible to distinguish, for example, between earners who are both African American and female, or African American and High School Diploma earners. The only census data that allow for this distinction are collected using a panel study of participants that have been tracked over time. These data are not readily available for all of the places under examination as the census only collects data from municipalities with populations of 50,000 or more quarterly so it cannot be included here.

Regarding at the average earnings outside the New Orleans area throughout the time period under examination we see that on average (Figure A2), among all groups, there is less overall variation in earnings. African American earnings stayed essentially stagnant, while workers in jobs with only a high school diploma earned approximately US\$255 more a month than African Americans. New Hires during this period earned about US\$500 more per month than their Black counterparts.



Figure A2. Non-New Orleans metro area average earnings.

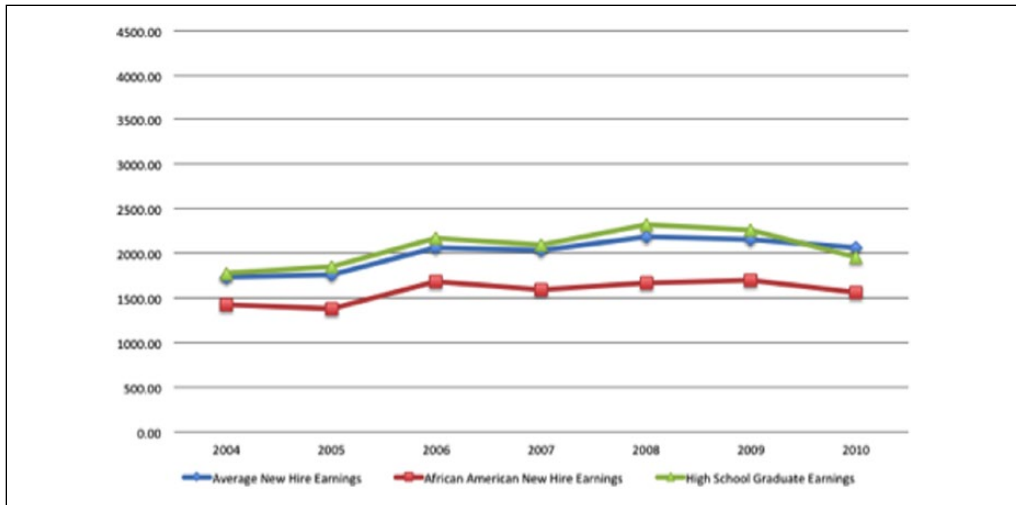


Figure A3. Gulfport metro average earnings.

Looking at the average earnings in the non-Gulfport metropolitan area two things are readily apparent (Figure A3). First, the average earnings overall are much less than in New Orleans, and second, the variation among different earning groups is lower as well. For New Hires, monthly earnings ranged from a low of US\$1,760 per month in 2004 to a high of US\$2,190 in 2006 only to recede to US\$2,057 in 2010. For African American New Hires, the number ranged from a low of US\$1,380 in 2004 to a high of US\$1,703 in 2009, dropping to US\$1,569 in 2010. Finally, new hires with high school diplomas actually earned the most of all groups, with monthly salaries ranging from US\$1,848 in 2004 to a high of US\$2,321 in 2008. This may illustrate that new hires without college degrees in the state of Mississippi worked in trades like construction, which typically have higher base earnings than other occupations that don't require additional education.

Figure A4 shows the average monthly earnings outside the Gulfport metropolitan area throughout the period of analysis. We see similar patterns in earnings among groups with African American new hires earning US\$425 less a month than all new hires during the same period and US\$487 less than new employees with just a high school education during the same period.

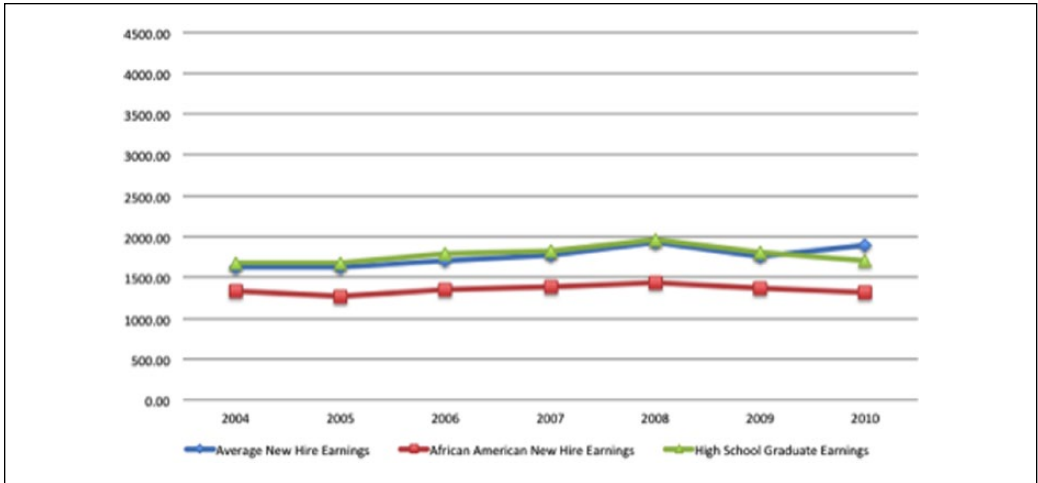


Figure A4. Non-Gulfport metro average earnings.

The next table shows the amounts of disaster relief expended from various state and federal sources during the 2005 hurricane season. Table A2 shows per capita expenditures from FEMA, and the respective state-funded emergency management programs. Within the state of Louisiana, the New Orleans area received the bulk of state funds and the highest proportion of the FEMA funds distributed in 2006. On average, living outside New Orleans meant that an individual received just over US\$4,700 while residents inside the city received US\$11,000 on average from all funding sources. In Mississippi, no one outside the designated area of Gulfport received any of the Housing Assistance Program (HAP) funds. Residents outside the Gulfport area received only US\$1,800 in federal funds (per capita) while those living in Gulfport received over four times that amount.

Table A2 shows the summary statistics of the further breakdown of type of funding received throughout both states, the amount of damage recorded by the Housing and Urban Development agency and FEMA post-Katrina, the average percentage of minority population, the proportion of residents living under the poverty line in both states, the summary statistics of minority and poverty percentage, the percentage of major damage as reported by Housing and Urban Development, and the percentage of federal and state funding received by each parish/county broken down by specific funding source. Public Assistance (PA) funds were restricted to local government entities, non-profits, state government entities, and public utilities, while Individual Assistance (IA) funds from FEMA were designated to individual claimants who submitted verified applications for rebuilding post disaster.

The following tables represent the further breakdown of the same variables within each metropolitan area under examination. The seven parishes (counties) that comprise the New Orleans MSA are a study in contrasts; the range of minority concentrations varies from a low of 11% in St. Bernard parish to 68% in Orleans parish, home of New Orleans (Table A3). There are similar trends in the percentage of residents living under the poverty line, as well as great disparities in funding distributed to the parishes in the GNOA.

Table A4 shows the summary statistics for the five counties that make up the Gulfport metropolitan statistical area (MSA). In terms of federal and state emergency funds, the Gulfport MSA received the lion’s share of FEMA dollars as well as Housing Assistance Program dollars expended after the disaster. The Gulfport MSA has the second highest population in Mississippi behind the capital, Jackson. Also notable is the fact that Hancock County has the highest proportion of housing damage but the third highest share of the FEMA housing funds.

Table A2. Summary Statistics of the New Orleans and Gulfport MSAs Compared With the Rest of Each State

	Minority percentage	Poverty percentage	% severe housing damage	% of FEMA IA funds	% of FEMA PA funds	% of LA Road Home funds
Louisiana	30.53	19.87	30.14	27.08	7.17	13.41
New Orleans	32.88	16.21	64.53	72.92	92.83	86.58
Mississippi	44.29	22.97	24.25	17.39	13.44	0.24
Gulfport-Biloxi	17.84	16.56	69.44	82.61	86.56	99.77

Table A3. Summary Statistics of the Seven Parish New Orleans MSA

Parish	Minority percentage	Low income percentage	% severe housing damage	% of FEMA IA funds	% of FEMA PA funds	% of LA Road Home funds
Jefferson	30.29	15.40	53.3	0.0	0.08	0.16
Orleans	68.12	24.70	71.5	0.54	0.42	0.47
Plaquemines ^a	28.80	16.32	80.0	0.02	0.08	0.02
St. Bernard ^a	11.76	16.86	80.6	0.07	0.24	0.12
St. Charles	28.50	12.78	49.5	0.007	0.007	.005
St. John	49.26	16.64	46.3	0.005	0.001	0.004
St. Tammany	13.40	10.76	70.5	0.08	0.11	0.09

^aPlaquemines and St. Bernard parishes are located directly to the south and southeast of Orleans parish and were hit first when the storm made ground.

Table A4. Summary Statistics of the Five County Gulfport MSA

County	Minority %	Low income %	% severe housing damage	% of FEMA IA funds	% of FEMA PA funds	% of HAP funds
George	10	16.74	57.5	0.78	0.11	0.0
Hancock	8.4	16.72	90	19.38	22.28	28.04
Harrison ^a	26.2	16.2	68	39.75	51.53	35.48
Jackson	24.2	15.18	64	21.93	11.32	36.25
Stone	20.4	17.98	67.7	0.87	1.53	0.0

^aThe cities of Gulfport and Biloxi are located in Harrison County.

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Notes

1. See the appendix for detailed information.
2. The 2004 Direct Expenditures are taken from the 2004 Consolidated Funds Report and include all direct payments to individuals (including rural housing assistance, aid to tribal governments, and flood insurance payments).

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