WADE IN THE WATER: RACE, CLASS, LOCAL GOVERNMENT AND HURRICANE KATRINA

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ABSTRACT
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This dissertation investigates the role race and class play in the economic recovery of the states of Louisiana and Mississippi after Hurricanes Katrina and Rita in 2005. Race and class have been shown to affect economic development of localities elsewhere in the country. This project informs the debate on how race and class affect economic recovery after an unplanned event. Instead of focusing on New Orleans as a case, this research explores the effects of race and class on recovery efforts all of the parishes in Louisiana and all counties in Mississippi affected by the storm. Two main indicators of recovery: new employment and new housing construction--are used to test the hypothesis that race and class have a negative impact on parish recovery. The theoretical perspective looks specifically at the tipping point theory of socioeconomic composition of places to inform how the demographic characteristics of each location affect recovery rates. Using data from years 2003 to 2007 collected from the census and the state's department of emergency management, results show for job recovery, race and class play a significant role. The economic health of the parish is measured in the numbers of jobs reclaimed and housing units restored. Housing recovery data also confirm that racial competition and tipping points play a role in the effectiveness of economic recovery in these states.

DEDICATION

I dedicate this project to my parents who always believed in me, to my husband for his unwavering support, to the people of the Gulf Coast whose tenacity never ceases to amaze me, and to my son without whom I would not have had the motivation to finish.

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Introduction

When Hurricanes Katrina and Rita hit the gulf in 2005, few understood what the impact of these storms would be. The facts of both disasters are now well known: an estimated $81 billion of damage to the gulf region during Hurricane Katrina, $4 to 5 billion dollars worth of damage attributed to Rita, 250,000 residents displaced after Katrina, an additional 3 million residents evacuated during Rita, and over 1800 lives, disproportionately African-American and poor, lost to the flood as reported by the New York Times, the Federal Emergency Management Agency (FEMA) and various other news outlets (Department of Homeland Security 2006; Development 2006; Dewan 2006; Drew 2006; Saulny 2006a; Saulny 2006b). In the wake of these natural disasters, disaster preparedness, mitigation and local revitalization took center stage as federal, state, and local government entities took stock and created plans to rebuild the gulf region. To date, much of the scholarship on Hurricane Katrina in particular, has focused on failures of emergency disaster planning, namely FEMA's lack of response, (Eikenberry et al. 2007; Gerber 2007; Petak 1985; Schneider 2005), the race and class divide after the storm, (Elliott and Pais 2006; Lavelle and Feagin 2006; Stivers 2007; Tynes et al. 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 2006).

What is missing is attention to how smaller municipalities were affected by the storm. In fact, nearly all of the accumulated scholarship on Hurricane Katrina has been case studies of the city of New Orleans and its attempts to rebuild. Public administration and policy scholars have largely been silent on issues of race and class and the effect these have on creating public policy

at the local level. In addition, studies on the effectiveness of FEMA have neglected to discuss the issues of *local* emergency planning or recovery.

While New Orleans was the largest local unit to suffer during the storms, the path of both hurricanes passed over Florida, Louisiana, Mississippi, Texas, and Alabama before dissipating in Tennessee and Kentucky. Thousands of residents living in small towns in these states suffered damage from the storm yet little media or scholarly attention has been paid to their plight. Smaller units of government may lack the types of networks available to assist in disaster planning. Further, issues of race and class may be exacerbated in rural and sparsely populated areas (Browne and Hadwiger 1982; Long 1987; Marshall 2000; Quigley 2002).

This project adds to the scholarship on racial politics by exploring issues of race and class at the state and local level, focusing on how communities with larger minority populations deal with disasters. It also adds to the debate currently raging in public administration over effective and efficient government (Frederickson 1996; Osborne and Gaebler 1992; Thompson and Riccucci 1998). This project uncovers the impact of exogenous events on local government operations by looking at the rate of recovery in the two states most affected by the storm, Louisiana and Mississippi. It looks at the capacity of local areas to rebuild after a natural disaster and answers questions posed by many scholars and pundits after the storm regarding how race and class complicate rebuilding communities. This project uncovers how counties governments of various sizes and race and class compositions rebounded economically post-disaster.

Central to this project is a theory regarding how socioeconomic diversity affects economic outcomes in the wake of crisis. This theory rests on the premise that, in areas that are racially and ethnically diverse, groups will compete with the dominant racial group (typically whites) when creating public policy and communicating preferences for public services. The key

question in this line of research is whether close proximity to racial minorities will facilitate hostility (Bobo and Kluegel 1993; Gay 2004; Hutchings and Valentino 2004; Mendelberg and Oleske 2000; Morgan and Mareschal 1999; Sharp 2005; White 2007) the effect of which can depress voter turnout, political participation and dampen economic investment. The racial composition of Louisiana and Mississippi provides an interesting test of this theory. Many counties identified by FEMA as eligible for aid differ dramatically along race and class lines, providing the kind of variation needed to test the assumption of whether heterogeneous areas are likely to recover after storms at a different pace than their homogenous counterparts. The term homogenous--used liberally in this project--is defined as areas that are both racially and economically similar (i.e., white and black versus rich and poor). The remainder of this chapter will provide a brief timeline of the disaster, discuss the literature on race and class as it relates to local government management and public policy, provide background on public administration and emergency management issues, highlight the effect of race on political preferences and policy making at the local level, and discuss the importance of institutional constraints on the creation of public policies at the local level.

Emergency planning has long been a difficult policy area for political actors and analysts to discuss. Effectively planning for events that have a low probability of occurrence but a high hazard for damage to a community has consistently challenged government officials. Obstacles affecting this type of planning include organizational arrangements, institutional inertia, and the behavioral and cognitive limitations of emergency management planners (Gerber 2007). In the United States, emergency and disaster management planning systems began as a local government function. Issues of federalism and state's rights further complicate planning. The phases of disaster management--mitigation, preparedness, response, and recovery--require both

horizontal and vertical relationships among political actors (Burby 2006). The highly politicized nature of policymaking at the local level involves greater economic costs in mitigating hazardous events than calculable benefits to a community (Congress 2005; Long 1987). Emergency relief and disaster planning have typically been considered functions of fire and law enforcement in many towns and counties across the United States rather than as separate local government functions. And, emergency and disaster planning occupy a small part of law enforcement budgets (Petak 1985). After 9/11, the additional requirements on local and state governments to tie emergency planning policy to eliminating threats of terrorism further complicated this area of policy (Sylves 2008). As a result, disaster or emergency planning is best characterized as a bottom-up network which, if capacity is minimal at the local level, can result in limited response during and after a disaster (Waugh Jr. 2006a, 2007).

In addition to the difficulties associated with planning for disasters, many communities in the gulf region suffer from high levels of poverty; disparities along racial and economic lines came into sharp focus in the wake of Katrina. Following the storm, media attention was integral to highlighting many issues that faced the gulf region 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. The broadcast news images that flooded the airwaves during and after the storm showed nearly all left behind in the city of New Orleans were African-American—thus the conclusion was drawn (by the media) that racism was a major contributor to the lack of coordination and response as the storm passed and thereafter. Thus the question bears asking, is it insufficiency in the planning process that results in economic disparities in disaster recovery or do issues of race and class which have proven intractable in other areas of policy, make recovery more challenging?

Class also played an important part in who was left behind in New Orleans. Being poor means having fewer resources, such as access to a car, or the ability to purchase a home in a safer area, resulting in difficulties recovering assets post disaster. In New Orleans, safe ground is higher ground and large portions of the city, specifically Orleans, St. Bernard and Jefferson parishes, lie below sea level (ASCE 2007). These factors contributed to a lack of mobilization of citizens out of the path of the storm. 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 this region will revive itself after the storm is directly connected to how policymakers and the public at large react to issues of race and class.

Background:

Before launching into a more detailed discussion of race, class, public administration, urban politics, and disaster relief policy, a quick summary of the extent of damage to the gulf region is useful. In particular, a review of events leading up to the landfall of the hurricanes and subsequent evacuation orders is needed to understand local government's role in notifying residents of an impending disaster and execution of emergency plans.

The National Hurricane Center (NHC) issued its first advisory about the system that was to become Hurricane Katrina on August 23, 2005. Over the next two days, the storm strengthened and came ashore as a category one hurricane in North Miami Beach, Florida. Two casualties were reported. As the storm crossed into the Gulf, it strengthened due to its warm waters. On August 26, the NHC predicted the storm would become a major hurricane and Louisiana governor Kathleen Blanco declared a state of emergency. On the 27th, the NHC upgraded Katrina to a category three storm; its trajectory was projected to hit New Orleans directly and pass through Louisiana and into Mississippi within 48 hours. At this time, Mayor

Ray Nagin issued a *voluntary* evacuation of New Orleans residents. Mississippi's Governor Haley Barbour declared a state of emergency. On the 28th, the storm was upgraded to category four and quickly intensified into a category five hurricane before hitting land. Mayor Nagin then issued a mandatory evacuation of the city, less than 24 hours before the storm reached land (Townsend 2006). The hurricane made several landfalls during the evening of August 29, the third recorded near the Mississippi-Louisiana border, over a hundred miles from New Orleans. On the 29th, the first of three levees within New Orleans failed leaving most of the city under water. It would be weeks before it would be habitable and the 150,000 residents unable to leave the city were in the Superdome and later the New Orleans Convention Center for shelter from the sweltering heat and stagnant waters outside (Comfort 2006; Drye 2005).

Hurricane Katrina's winds and storm surge reached the Mississippi coastline on the afternoon of August 28, 2005, beginning a two-day path of destruction through central Mississippi; by 10 a.m. CDT on August 29, 2005, the eye of Katrina began traveling up the entire state, only slowing from hurricane-force winds at Meridian at seven p.m. and entering Tennessee as a tropical storm. Many coastal towns of Mississippi (and Louisiana) had been obliterated in a single night (Congress 2005; McClendon 2010). Hurricane-force winds reached coastal Mississippi by two a.m. and lasted over 17 hours, spawning 11 tornadoes and a 28-foot storm surge flooding 6-12 miles inland in places. Many, unable to evacuate, survived by climbing to attics or rooftops, or swimming to higher buildings and trees. The worst property damage from Katrina occurred in coastal Mississippi, where all towns flooded over 90% in hours, and waves destroyed many historic buildings, with others gutted to the third story (Editorial 2005b). Afterward, over 235 people died in Mississippi, and all counties in Mississippi were declared disaster areas, 49 for full federal assistance. Post-Katrina, a regulation for the

placement of emergency centers and floating casinos were changed. Emergency command centers were moved higher because all three coastal centers flooded at 30 feet above sea level during the storm.

Tropical Storm Rita developed on September 18, 2005. The storm increased in intensity, reaching category 2 status over the next 48 hours. Rita reached the Florida Keys on the 20th and swung out towards the Gulf of Mexico, reaching category 5 strength as it passed through the warm waters of the gulf. On the 23rd of September, Rita made landfall at the Texas-Louisiana boarder at category 3 strength (Lawrimore 2005). Unlike Katrina, the number of deaths caused by Rita was low; only seven (Knabb et al. 2006). Early evacuation measures taken by state officials reduced the amount of lives lost to the storm. In addition, power outages and costs to repair damages from Rita have been significantly less than Katrina. Although Rita has been identified as the fourth most intense hurricane ever recorded, the proximity of Rita to Katrina staved off a repeat of mistakes made one month earlier.

It is important to note that the outline above provides the barest detail of events occurring before, during, and after the storms. Most notably, this outline, as well as many media reports after Katrina, neglected to discuss the role of regional aid systems that were in place prior to the storm. Nor does it discuss the local level planning efforts made by cities in the damage path. This project rectifies that by analyzing the networks of emergency aid agreements in place before the storm. Typically, communities have mutual aid agreements so they can borrow fire, police, and emergency medical services in the event that their own departments are overwhelmed (Office 2007; Waugh Jr. 2006a, 2007).

In the case of Hurricane Katrina, the governors of Mississippi and Louisiana had the Emergency Management Assistance Compact (EMAC) to aid them in mitigating the impact of

the storm. This compact, created in the wake of Hurricane Andrew in 1992, represents a consortium of southern states to supplement supplies and manpower in the early stages of a disaster. The compact serves as a mechanism for collaboration at the local, state, and federal levels and facilitates sharing resources across and within state borders. The use of the EMAC and its resources was significantly different between Louisiana and Mississippi, however. Later chapters will discuss this issue in detail, but suffice it to say here that Louisiana Governor Blanco's use of the EMAC system was significantly less than her Mississippi counterpart, Governor Barbour's (Waugh Jr. 2007).

In the days leading up to Hurricane Katrina, the message to residents of the gulf region had a subdued tone. The area had seen its share of storms and very few had caused the kinds of problems that would be attributed to this particular one. The very fact that the mayor of New Orleans waited until a day before landfall to issue a mandatory evacuation of the city, reflects the nonchalance people in the region felt towards "another" hurricane. This is the main problem with emergency and disaster planning. It is difficult to know when a disaster will outpace networks in place. In addition, it is very difficult to make people leave their homes during a natural disaster, as fears of looting and the inability to protect private property after a storm may outweigh the benefits of packing up and leaving (2005; Cutter 2009; 2005a, c; Richard 2008).

So what happened? What made Katrina different from all the other storms? First, the scope of the storm has contributed to a reduction of population throughout the Gulf, most notably in New Orleans (Liu 2006). In addition, the entire racial composition of the Gulf has been altered due to the numbers of people displaced by the storm. Rebuilding infrastructure and restoring critical public services were delayed for months. New Orleans, once a city with a majority African-American population, according to the American Community Survey, has seen that

African-American population decreased by 57% while the white population decreased by just 36% (Frey 2006). Issues of where and how to rebuild are still being fought at city hall in New Orleans and across Louisiana and Mississippi. Finally, community building efforts have suffered a major blow in the wake of this storm. Many survivors are hesitant to come back due to lack of resources, failure of a plan laid out by local officials as to where to move back to, and a lack of guidance from the federal government regarding what the role of FEMA and other federal agencies will be if another storm of this magnitude hits the region.

Research Questions:

This project seeks to determine whether race and class play a part in facilitating or inhibiting recovery after an exogenous event, in this case, Hurricanes Katrina and Rita. Because racial diversity can act as an impediment to cooperation when citizens deliberate and form policy (Frymer 1999; Hutchings and Valentino 2004; LeMay 2005), it could be shown that as the number of minorities within a community increases, those communities will have more challenges in recovery after a storm. On the other hand, the impact of racial segregation and subsequent emancipation of African-Americans in the south may have a different effect on the cooperation/competition theory of race than initially expected. Historically, southerners have had a more difficult relationship with race than in other parts of the country exhibited by the adoption of Jim Crow laws in the wake of emancipation, and resistance to change after the passage of the Civil Rights Act of 1965(Oakes 1985, 1998; Shepard 2007). It could be that smaller, homogenous, and less populated areas have chosen to cooperate rather than compete over scare resources, leading to declining conflict over policy decisions. This type of cooperation could occur in places predominantly black and rich, white and rich, black and poor or white and poor. In effect, the research questions here pertain to whether changes in the ratio of minorities helps

or hinders the coordination necessary for disaster planning and recovery. Thus a heterogeneous community, one with racial and income diversity may be less likely to recover economically.

The second question is to ascertain whether class plays a role separate from race in recovery. If class acts as a separate variable affecting response and planning capacity, this analysis should show that counties with lower average incomes, and fewer economic resources in terms of taxable income, have difficulty participating in mutual aid sharing and lack the capacity to plan for emergency relief. It is assumed that better off communities will have access to the resources and additional personnel to aid in planning for disaster relief and should reflect a faster recovery time after a disaster.

The third question that has gone unanswered so far is that of what *recovery* means. For this project, the ability of a community to recover will be tracked by the ratio of new jobs created after the storms. In addition, this project will look at housing, namely the number of new construction projects permitted post-storm. Both of these variables are at the heart of any community's economic and social strength. Thus tracking these variables over time allows for a better picture of the ability of these communities to persevere post-disaster. The Brookings Institute has assessed recovery of the Gulf Region using a variety of measures, ranging from the population returning to the area post-disaster, to the number of jobs created in the area, to the number of schools reopened in the wake of Hurricane Katrina (Liu 2006). Other scholars have tracked recovery by looking at the reconstruction of rental housing in New Orleans (Lubell 2006), transportation infrastructure (Weinberger 2006) or have used qualitative techniques to uncover the emotional and psychological recovery of storm survivors (Harris-Lacewell 2008). The questions this project seeks to answer are:

1. Does a high concentration of minority residents lessen economic recovery post-disaster?

2. Does a high concentration of poor residents lesson economic recovery post-disaster?
3. Does the interaction of race and class create barriers to recovery?
4. Are problems with economic recovery post-disaster policy-based or based in the discrimination of minority groups?

Research Design and Methods:

This project is based in part on research the Brookings Institute has conducted on the city of New Orleans in the aftermath of Hurricane Katrina (Liu 2006). Starting in 2005, Brookings began tracking the social and economic recovery of the gulf region using the Katrina Index. That project has focused primarily on the Greater New Orleans area, thus it makes no distinction between other areas or states affected by the storm. Brookings focuses, as this project does, on the following variables: Rebuilding Damaged Housing Stock, and Fiscal and Economic Conditions.

The project identifies cities within the counties FEMA classified as eligible for public assistance and individual aid following the hurricanes. In Louisiana, 37 parishes (counties) were identified and in Mississippi, 49 counties were so identified. The primary independent variable for this project is the *ratio* of minority-to-majority population. The secondary independent variable of interest is the *ratio* of citizens living under the poverty line to those living over it from 2003 to 2007. There is some debate regarding the desirability of using the concentration of minorities within a geographic area or other measures of heterogeneity such as a dissimilarity index in race research with some authors promoting the use of commonly used measures of dissimilarity (Massey and Denton 1988; Massey et al. 1996) to those who desire a redefinition of in vs. out group measures of dissimilarity (White et al. 2005). Dissimilarity indexes measure the evenness with which two groups (usually races) are distributed across a geographic area (Duncan and Duncan 1955). The index score that is the measure of dissimilarity can be interpreted as the

percentage of one of the two groups included in the calculation that would have to move to different geographic areas in order to produce a completely even distribution. This measure can also be used as a measure of income inequality (Massey et al. 1987). The percentage (i.e., concentration) of minority residents and those living in poverty is used in this project. Although there is a substantial literature on the effects and causes of dissimilarity in the United States (Baldassare 1992; Blandy 2003; Cohen 1993; Massey 1988; Myrdal et al. 1944), there also is a substantial number of studies that use concentration of minority population as well (see (Hutchings and Valentino 2004). Due to the fact that dissimilarity scores are based on Census data and the availability of relatively current scores will not be available until 2011, this project uses minority proportion instead. It should also be noted, that correcting for dissimilarity in a geographic area in some urban policy studies does not ensure that policy outcomes or societal outcomes improve (Galster 1987, 1996; Massey 1985); most notably, in cities with highly integrated neighborhoods, such as New York, Chicago, and other metropolitan areas with large ethnic populations, there are many examples of disparate policy and economic effects.

This project uses a descriptive, longitudinal panel design to collect data on each variable from the year 2003, before the hurricanes reached land, through the year 2007 (Campbell and Stanley 1963; Wooldridge 2002). This time-series panel design allows for an in depth look at the conditions before the storm hit and how each county in the analysis recovered. It utilizes a combination of census, state, and local government data sources. The cases will be stratified on two metrics. First, counties will be divided into four groups, based on the socio-economic composition of residents living in the area before the storm. Additionally, the concentration (ratio) of minority and class populations will be imputed in the original continuous-level variable

form in other models to directly test assumptions from the cooperation and competition theories of race and class (Leavitt 2008).

Another issue in disaster relief and recovery is the amount of capacity a community has before a storm (Ink 2007; Marshall 1979). Schneider (1995) notes that successful governmental response to natural disasters is dependent on the extent to which post-disaster behavior corresponds to prior government expectation and planning. Therefore, the ability of a community to recover may not only be tied to how race and class interact in the policymaking process, but may also be attributed to the ability of policymakers at the state and local levels to prepare plans and create bureaucratic norms of response that come into play once an emergency is imminent.

Sabatier's (1986) discussion of bottom-up policy implementation provides a good visualization of how emergency planning for disasters operates. In a bottom-up approach, emergency response should move upwards from the local level to other levels of government. The illustration below shows the pattern of response during a disaster:

Figure 1. Pattern of Emergency Response During Natural Disasters
(For interpretation of the references to color in this and all other figures, the reader is referred to the electronic version of this thesis (or dissertation).

In this scenario, local officials activate plans to handle disasters, state officials await direction from their local counterparts, and the federal government, if needed, coordinates outside assistance from the Red Cross, National Guards, and other governmental agencies in the wake of a disaster. On the other hand, poor planning and emergency relief infrastructure at the local level might require the replacement of the bottom up approach with a top down approach where the federal government takes over the normal response process. Somewhere in the middle, a confused response occurs leaving local, state and federal agents unsure of what actions to take

to alleviate the emergency (Sabatier 1986; Schneider 1995). Therefore the amount of planning and infrastructure at the local and state level should be considered as an outside factor that could affect the ability of a community to recover whether heterogeneous or homogenous in composition. Since both Louisiana and Mississippi had emergency planning policies in place, instead of including a variable for this in the longitudinal model, a content analysis of the plans looking specifically at mentions of planning for low-income and minority populations before and since Hurricanes Katrina and Rita is conducted. Recovery, then, in this project will be measured by the effect of the race and class metrics on job creation and housing permitting levels after the disasters as well as on mentions of these populations in planning documents. It is hypothesized that those parishes and counties with less heterogeneity will recover to pre-storm job and housing levels more quickly than those places with greater economic and income diversity/disparity. Poverty and racial diversity are not necessarily mutually exclusive categories. For example, a community could be primarily African-American and wealthy, conversely another community could be primarily white and poor. Finally, a community could be a mix between predominately one race and socioeconomic status.

Table 1.1: Types of Parishes and Counties Examined on Race and Class Dimensions

	Race Dimension	
Class Dimension	Black and Wealthy	White and Wealthy
	Black and Poor	White and Poor

Lack of diversity, or homogeneity is the key component of the theory to follow. The more alike residents are, the more likely policy planning can occur without conflict, leading to the activation of emergency plans in a timely manner which will result in faster economic recovery. There is a substantial literature, which concludes that in areas that are socioeconomically homogenous, economic outcomes are increased in comparison to more

heterogeneous counterparts (Alesina and Ferrara 2000, 2005; Alesina and La Ferrara 2002; Frank and Mark 2005; Habyarimana et al. 2006; Montalvo and Reynal-Querol 2005). Thus, research into the economic effects of natural disasters in diverse locales is both timely and necessary to informing the development of public policy.

Race and Class Variables:

This project will measure the minority population before, during, and after the storm. It will also track the percent of minority residents living in each area pre-post storm and the rate of return to the area for these groups. The minority population information comes from the US Census Bureau's population estimate dataset (Census 2008). Poverty estimates come from the Small Area Income Poverty Estimates dataset also compiled by the US Census.

Fiscal and Economic Capacity Variables:

This project's main dependent variable is the ratio of new jobs *prior to* and *following* the storms (Census 2007). This information comes from the Local Employment Dynamics Quarterly Workforce Indicators data which is a subsection of the Longitudinal Employer Household Dynamics dataset compiled by the Census Bureau.

Housing Variables:

This secondary dependent variable will track the number of residential building permits issued by each county *prior to* and *following* the storms. Information on new residential construction is gathered from the Manufacturing, Mining and Construction Statistics data collected by the Census Bureau.

Federal and State Funding:

This project also tracks the amount of funding given to each county in the analysis to ascertain the effect of outside resources on recovery capacity. This information was gathered

through a FOIA request to Regions VI and IV for individual and public assistance funding. State funding numbers were requested and received from each state's office of emergency management.

Sources of Invalidity and Secondary Data Source Issues:

As Donald Campbell and Julian Stanley (1963) note, utilizing time series designs in social research introduces issues of internal validity. Although the effects of history are spread over the time in a longitudinal design, history effects pose a particular problem here since the study compares two states with very distinct historical backgrounds. External validity issues of interactions between testing and the test group should be minimized as this study relies on secondary data. Secondary data do, however, have their own problems such as difficulties verifying sources of original data, age of data used, and understanding the methodology used to gather data (McNabb 2004; Pierce 2008). Verification of variables and evaluations for each database accessed is conducted.

Chapter Outline and Concluding Thoughts:

Chapter two discusses the literature on race and class and presents a theory of socioeconomic diversity as it affects a geographic area after a natural disaster. Chapter three provides the methodology used in the quantitative analyses. Chapter four looks at the state of Louisiana, examining recovery of jobs and housing, the effect of race and class on recovery as well as make comparisons to the state of Louisiana's recovery efforts. Chapter five examines the Greater New Orleans metropolitan area and makes comparisons to recovery in the rest of the state on the same metrics. Chapter six analyzes the state of Mississippi looking at the recovery of jobs and housing post-disaster and tracking the effects of race and class on recovery of these dependent variables over time; and chapter seven concludes the project. Because both states have

historical and institutional differences, each chapter takes care to provide a look at historical development as well as the relationship of local governments to state infrastructure.

This project sheds light on three issues: race, class, and the operations of local government and how these variables interact, creating differing outcomes for municipalities. The project uncovers the impact of exogenous events on the economic well being of an area post-disaster. It also explores whether areas with large numbers of minority residents and poorer citizens rebuild differently.

The larger question of whether to rebuild some areas at all came to the forefront soon after Katrina devastated the 9th Ward in New Orleans. The normative question of whether it makes sense to invest in some areas, particularly when a pattern of destruction by natural disasters is well documented has long been a part of policy discussions (Schneider 1995; Waugh Jr. 2006b; Webb 2002). This project looks at whether racial and class composition affects recovery. If this project is able to isolate these factors as an impediment to recovery, it could be that planning efforts should be modified in communities that are smaller, poorer and have more minorities. What we have seen so far in New Orleans is stratification along race and class lines producing an untenable variance in who gets to return to the city and who does not. This project takes these findings and applies the same logic to smaller municipal units to uncover whether New Orleans is a unique case that has set its recovery trajectory apart from other cities that have suffered massive losses in a natural disaster, or if issues of race and class retain their affect on smaller communities.

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Chapter Two: Literature Review and Theory

Introduction:

The argument presented in this project is that highly diverse areas have more difficulty determining what issues should be on the policy agenda, resulting in uneven policy outcomes in terms of how issues of race and class affect the recovery stage of emergency management planning (Nemeth 1986; Nemeth et al. 1974; Park and Vargas-Ramos 2002). This chapter presents several literatures relevant to uncovering the intersection of race, class, and their effect on policy outcomes. It discusses the literature on how economic outcomes are affected by socioeconomic diversity. The first literature includes a discussion of power, the concentration of power, and how it is wielded during the policy process. The second literature discusses municipal reform and its affect on political representation of minorities within cities and states. Finally, the third discusses economic outcomes in the face of diversity in localities.

Table 2.1: Literature on the Effects of Minority Presence and Poverty

	Effects on Minorities	Effect on Poverty
Power and Group Politics	Limited access to political agenda (Cooper 2005; Dahl 1961b; Mills 1956).	Limited access to political agenda (Cohen 1993a; Fleischmann et al. 1992; Robert 2003).
Municipal Reform	Declines in minority representation, limited policy development directed at minorities (Browning et al. 1984; Eisinger 1982; Joyce 1997; Lineberry 1977; McClain 1993b).	Same findings (Cohen and Dawson 1993; Hill and Leighley 1992; Leighley and Nagler 1992).
Economics of Diversity	Decreased investment, stunted economic outputs, service sector job dominated, educationally limited workforce (Alesina and Ferrara 2000; Collier 2000; Montalvo and Reynal-Querol 2005; Quigley 2002).	Same findings.

Table one shows how each literature tackles the effects of minority presence and poverty on different aspects of political life. Each of these components is critical to understating the nature of how localities plan for and recover from disasters. This diverse collection of literature shows how diversity at various levels of government inhibit political participation, cooperation among groups, decreases outside investment in the economy and promotes white flight, all of which can complicate economic recovery in places affected by natural disasters. In addition, these literatures exhibit how diversity in terms of race and class can inhibit the creation of policy that is careful to pay attention to the needs of these groups and require special attention in terms of policy development in the area of emergency management by policy experts.

As emergency plans act as roadmaps for mitigating and recovering from an event, the crux of this project is the attempt to determine how the atmosphere surrounding the creation of such policies interacts with the socioeconomic character of a place, and as result affects the economic outputs after a disaster has passed. This chapter will conclude with a discussion of theory and hypotheses to be tested empirically in the quantitative and qualitative chapters that follow.

Race, Class and Local Government Institutions

The earliest research on local governance and policy discusses the issue of pluralism and elitism as they affect the policymaking process (Abney and Lauth 1985; Cooper 2005; Davis et al. 1997; Mills 1956 ; Truman 1951). This research also debates the importance of power (Cooper 2005; Dahl 1961a; Hunter 1953; Kettl 1993; Moe 2005; Ordeshook and Schwartz 1987). The question, "who gets what and when," remains central in most political research. The connection to public policy lies in who maintains political power within cities, counties, states, and nations. The majority has the power to dictate the direction of policy and if the minority is

not cohesive or large enough to make a significant dent in the desires of the majority, public policy will be slanted toward majority desires. Therefore, participation in the political process, be it in the area of presenting alternatives to policy problems or voting for candidates that represent needs, is integral to who is in power and what the policy ramifications of that political choice will be on residents in a locale (Nelson 1979; Oliver 2000; Pelissero 2003). How people vote can be highly dependent on the local government institutions a particular municipality adopts. If a minority population grows within a locality, it is inferred that changes in political preferences and policies will result.

Municipal reforms in the United States transformed the way in which the electorate as a whole participated in the political process. Prior to the reform movement in the United States, many cities had developed a strong, party-based system that controlled nominations to public office using a network of party officials and material rewards to garner votes during election time (Alford 1968; Bobo 1990; Carmines 1995; Pelissero 2003). Minorities played an important part in the development of political machines because of the ability of party bosses to give material rewards to new voters in return for support for party candidates. This mobilizing function allowed the machine to retain its power and at the same time enhanced the political participation of those connected to parties. The effects of the political machine on African-American political participation was inherently limited due to the institutional arrangements in place that made it impossible for blacks to vote, however. Only in the 1960's and after the passage of the Voting Rights Act did political science and society at large see the emergence of a new voting bloc. The enfranchisement of African-Americans coupled with the decline of the political machine due to the development of federal programs which provided many of the material benefits machine bosses used to provide to minorities, ushered in a new flurry of

political studies on minority representation (Guterbock 1983; Leighley 1999; Lopez and Pantoja 2004; McKenzie 2004; Mladenka 1989).

As the African-American population growth in urban areas remained unchanged in the 1980s and 1990s, other ethnic and minority groups grew in proportion (Shrestha 2006). Scholars began to study the emergence of coalitional politics, and this line of research quickly subsumed previous studies on single racial groups. As it were, research on minorities has tended to focus on the interaction between a majority group (namely whites) and blacks in the political process. As the Latino population grew in the United States, scholars noticed that these newly emerging groups had differing political preferences and could not simply be lumped together when looking at minority/majority dynamics. In the beginning, Latinos often voted with blacks as an ethnic bloc. When immigration and English-only policies gained traction in the political debate, the policy preferences of these two groups diverged (McClain 1993a; McClain 1993c). Policy differences have produced conflict, particularly in southern states where the Latino population has grown, and in New Orleans, the growth of the Latino population in the wake of the storm has changed not only the racial makeup of the city, but the political landscape as well (Saulny 2006). As recovery began in both Louisiana and Mississippi, the influx of Hispanics seeking jobs in construction and tourism changed the political landscape within both urban and rural areas. And although emergency planning is not directly concerned with the changing composition of races within an area, the types of skills sets that these new groups bring are integral to the quality of recovery experienced in certain areas.

Race, Class and Public Policy Development:

Early pluralist scholars noted that in the United States, ethnic integration was unavoidable in a pluralistic democracy (Dahl 1961a). As minority groups gained their

independence, public policies changed to meet the demands of these newly enfranchised groups. Pluralists determined that in a representative democracy, in order to have policy preferences realized, ethnic groups should compete through electoral contests and economic development in order to be assimilated into the mainstream of urban political life. Critiques of this literature point out that this theory on the whole fails to account for the political reality of economic inequality in the US. Additionally, those who occupy the lower classes within the United States typically are disorganized in creating the necessary group power to affect change in the political process, resulting in policies that may not necessarily benefit them (Dwyre et al. 1994; Pippen et al. 2002).

Schattschneider's research on the *mobilization of bias* also notes that economic equality is a key factor in the realization of some group's policy preferences over others (1960). To him, conflict is *the* central fact in a free society. Further, it is the contagiousness of conflict that characterizes the American system of government. On the face of it, this social theory of conflict seems very simplistic; who wins the fight is a product of who is involved. Schattscheider's theory has an important caveat about the confidence and size of the minority, however; if they feel they will be penalized for their actions, *they won't fight* (Schattschneider 1960, 8 emphasis added). His research on the interest group community in Washington D.C. led him to conclude that the middle and upper classes were better organized and more moneyed. Therefore, this "middle and upper class bias" of interest groups limits the amount of representation of lower class and minority groups. Furthermore, if groups become more inclusive of the minority, the power of these groups would be mitigated because, " if everybody gets into the act, the unique advantages shared by the pressure group would be destroyed…"(Schattschneider 1960, 34).

This connection is relevant to the problems exhibited in Hurricane Katrina. The emergency planning policies in place neglected to consider the special needs of minorities who did not have access to cars, the time it would take to evacuate the larger urban areas completely, and the need for housing temporarily displaced persons, as well as for the sick (Lubell 2006). The policies surrounding emergency planning and subsequent recovery reflect an upper class bias as those who had access to cars, as well as things like homeowner's insurance policies on their property were able to evacuate in a much more orderly fashion and recover their homes more quickly than those left behind. This problem illustrates the "mobilization of bias" in action.

Race vs. Class

Poverty in the local and state contexts also affects the ability of citizens to access the political system. Banfield and Wilson's *City Politics* was one of the first efforts to explore the effects of municipal reforms (Banfield and Wilson 1963). Their political ethos theory pitted private-regarding immigrant working class values, which favored sustaining traditional political machines, against public-regarding white Anglo Protestant middle-class values, which supported municipal reform. Thus, lower-class workers had very different policy preferences than white-collar counterparts, but institutional reforms made it difficult for poorer residents to participate in the political process. This theory also left little role for African-Americans in the municipal reform movement since, at the time, African Americans could not vote. Since the adoption of municipal reforms, scholars examining black voter turnout in elections which have no blacks running for office often found low rates of participation by blacks and other minority groups (Oliver 2000; Verba 1993; Wolfinger 1965; Wood 2002). Those in the lower classes also have dismal voting participation rates (Avery and Peffley 2005; Leighley and Nagler 1992; Rosenstone 1982).

Scholars of public policy have also found significant differences in economic impacts of municipal reforms. Elaine Sharp (1991) found that unreformed cities provide minorities more access to local decision makers, resulting in greater attention to minority economic development needs. However, James Clingermayer (1994) found that the development policies of unreformed cities had the strongest impact on the formation and implementation of zoning policies that were restrictive towards minority groups.

Cohen and Dawson, in their exploration of the effects of neighborhood poverty, find that the devastation of the urban core as first described by Banfield and Wilson (1963), has propagated a decline in black voting, particularly in areas that are well below the poverty level (Cohen 1993a). Decline affects blacks in particular, because after the massive influx of freed slaves during emancipation, the city core continues to be populated by African-Americans and poor whites who do not have the economic resources to move from the city center (Banfield and Wilson 1963). This situation decreases the effectiveness of institutions that promote political participation in these areas (community groups, party offices, churches that support political candidates), thus reducing the political efficacy of residents.

J. Eric Oliver and Tali Mendelberg (2000a; 1999, 2000, 2001) have studied in depth the effects of socioeconomic status, city size and segregation on political participation. In considering the social composition of American localities, Oliver and Mendelberg convincingly show the impacts of socioeconomic status and residential segregation on the dynamics of democratic government. Their findings indicate that individual political behavior varies systematically across economic contexts. They do not find a positive relationship between affluence and participation they do, however; find that political participation is lower in cities with higher median household incomes and in those more economically homogenous.

Mendleberg and Oleske find similar results in an exploration of the political communication patterns in various California neighborhoods. They found that "subordinate groups cannot rely on deliberation to secure equality" and therefore ensure political outcomes that are favorable to them, because deliberation must have equality and community as preconditions to succeed and in the areas they explored, these preconditions were not found (Mendelberg and Oleske 2000). Most importantly, once individual-level characteristics were taken into account, participation rates for contacting, attending meetings and voting diminished ten percent from economically homogenous upper-middle class cities to economically diverse middle-class cities. Therefore, while homogenous municipalities participate less, they also seem to have fewer things to debate.

These findings lend additional credence to racial participation studies by showing that competition over resources matters to who participates and what the policy results will be. In the case of disaster recovery, particularly when outside federal assistance is in play, we may see poorer communities benefit more because they receive more money. This effect may be limited by the heterogeneity of residents in a locale, however, or the influx of dollars may mitigate competition strategies between residents. In terms of disaster planning, a lack of participation by minority or poor groups during the planning process inhibits the ability of an area to consider the needs of these populations, resulting in retarded economic recovery after a natural disaster.

Race, Class and Economic Outcomes:

The literature discussed above has dealt with the political ramifications of diversity on policy outcomes, voting participation and participation. There is some literature that deals with the effects of minority and poverty population on the economic outputs of a locale. This aspect

of the effects of diversity is critical to the theory developed here as emergency management policies are connected to returning economic normalcy to an area once a disaster has passed.

Alesina and La Ferrara (2005) survey the literature on the economics of diversity and find the production of public goods in ethnically and racially fragmented societies (studied at the village, city, state and country levels) are lower than in places where racial and ethnic homogeneity is present. Additional work by Alesina and LaFerrara (2000; 2002) determine that trust and social capital are critical to ameliorating issues of public good production. Looking at economic outputs and demographic fragmentation, the authors find that private investment is lower in places that have high fragmentation.

Paul Collier finds that diversity is tied to lower overall economic growth in places where political rights are limited (Collier 2000). Given the South's history of suppressing the political participation of minorities in various ways, and the current position of both Louisiana and Mississippi at the lower ends of economic investment compared to other states in the union, the conclusions Colliers presented are worth mentioning here. Finally, Ferraro and Cummings (2007) find the economic behavior in societies is directly related to differences in ethnicity, race and religion. Research into the effects of income stratification has yielded similar results (Moller et al. 2009; Tomaskovic-Devey and Roscigno 1996). Thus, higher fragmentation on racial, ethnic and/or class lines yields lower economic investment and outputs at the state, city and country level (Ottaviano and Peri 2005).

Theory Construction:

Public policy scholar Elinor Ostrom (1990) highlights the importance of informal and formal groups coming together to determine the decision rules to be used in protecting scare resources. The political power theory discussed by early political scientists Hunter (1953), Dahl

(1961b) and Mills (1956) and later, with scholars studying suburban political behavior (Oliver 2001), highlight the importance of people coalescing around a specific policy need. From this, the theory presented here takes the premise that in communities of homogeneity (i.e., those where the majority of the population have similar economic or racial characteristics) policymaking is easier because people with similar socioeconomic situations desire similar policy changes. Thus it would follow that in communities that have a more mixed socioeconomic makeup, policy creation is more challenging and, as a result, policy outputs are decreased as well. Additionally, communities of color and poverty often lack cohesion around policy desires because their policy needs are more diverse (Cohen 1993b; Robert 2003). The end result of socioeconomic and racial diversity is a policy atmosphere that is combative resulting in policy outcomes that are disparate among groups.

Theory:

The theoretical perspective presented here has three parts. The first concerns the racial composition of a locale. Following the assumptions of the theory of competition and cooperation as it pertains to minority representation in local government, this perspective focuses on racial dynamics at the local level to predict recovery outcomes. To this end this project looks at the ratio of minority presence as an impediment (or promoter) of recovery efforts.

1. **H1: Increased ratios of minority concentration *decrease* the amount of economic recovery post disaster.**
2. **H2: Lower class concentration *decreases* the amount of economic recovery post disaster**
3. **H3: Increased ratios of both minority and lower class concentration *decrease* the amount of economic recovery post disaster.**
4. **H3a: Differing Racial and lower class concentrations combinations may act as tipping points, which, once a critical threshold is passed, decrease economic recovery.**
5. **H4: Increased funding mitigates racial and economic disparities in terms of economic recovery post-disaster**

Consistent with the scare resources or "commons" theories of policy, it is believed that race and class both act to decrease the likelihood that citizens will be able to cooperate when disaster strikes. Secondly, the class component of this theory predicts that class has a separate and distinct effect on recovery (Hamilton 1972; Hill and Leighley 1992). Class variables may also work in tandem with race to exacerbate barriers to community recovery. Finally, the racial makeup and class structure of a community may interact causing differing outcomes in recovery efforts resulting in what is termed ***Racialized Response Theory***. Thus, this project will also attempt to test whether areas that are diverse will experience greater difficulty recovering economically post-disaster. The question to be answered by the dissertation is how race and class composition of a locale affect both the policy process as well as the recovery process post-disaster. It is hypothesized that at the outset, there is competition over the nature of public policy, that race and lower class play a significant role in inhibiting areas with high concentrations of minority and poor residents to plan accordingly for disasters as well as to recover economically from disasters once the threat has passed, resulting in decreased economic activity in the recovery stage of disaster relief.

The distinction of the racialized response theory from traditional theories of competition and cooperation is that instead of thinking of race as a characteristic that set New Orleans apart from other natural disasters of this type, I propose that high concentrations of minority and lower class within any local area make it difficult for important needs to be met in terms of economic recovery. This occurs in several ways. At the policy development level, an increase in minority population may result in more groups at the table during the policy formation stage, resulting in specific mentions of how these groups are to be evacuated during an emergency if cooperative strategies are present within the community. This is not an assurance that these groups' needs are

met, but it may allow for policy planning and emergency response to be more sensitive to group needs. However, if competition is present at the outset before disasters strike, then the policy planning process is more at risk of leaving out these populations resulting in differing economic outcomes in the recovery phase due to the "closed circle of deliberation" that dominates policymaking in areas that are diverse (Mendelberg and Oleske 2000; Oliver and Mendelberg 2000b).

At the economic level, we may see that the institutionalized effects of race are exacerbated in communities with high competition. Thus, if emergency planning makes no mention of how minority and poor populations should be treated during and after storms (i.e., in terms of evacuation, temporary housing, job placement services, etc.), the previous race and class composition of the community may be a critical part of why economic outcomes post-disaster in heterogeneous areas are less positive than in homogenous counterparts. And as the population of minorities grows in a locale, divergent demands for policy grow. This affect will permeate all types of policy, including disaster relief. I seek to determine if the presence of minorities in an area restricts economic recovery, particularly in the face of massive outside investment.

There may be some question regarding whether this project merely shows the effects found only show how race and class exacerbate recovery much like they inhibit economic development in times of peace as opposed to crises. While institutional history and the effect of past racism may be present in the statistical results presented, the planning for response to a disaster is not, as it is purported to be, a neutral activity undertaken by political and policy experts. Both Mississippi and Louisiana have high rates of minorities living within their borders as well as high numbers of residents living in extreme poverty. Neglecting to include these populations throughout the policy making process or in formal policy documents will have direct

effects on how locales are able to regain their footing economically. Planning is a purposeful process undertaken in communities and states to itemize priorities for an area's recovery after an emergency. This project sheds light on whether race and class are simply insurmountable obstacles that impede economic recovery in the face of outside investment. If this is case, it could be that nothing federal, state or local officials can do in the face of emergencies like these.

The question remains how best to identify and measure how this racialized effect plays out in the recovery process. This research investigates the number of jobs created in an area once a disaster has hit, as well as housing production and population shifts. Better planning and cooperation before a disaster should result in a shorter, more temporary effect on the demographic character of a parish and it is hypothesized that jobs and housing should return to more homogenous areas faster than racially mixed areas. This is due to the lack of conflict over what needs to be included in a local response plan and the ability of residents to evacuate and return more quickly (i.e., richer residents have means to leave and return). The reason for this difference in return to normalcy is tied to differences in socioeconomic composition, communication and inclusion in the planning process, and organization of recovery in these places that make it easier for homogenous areas to return to previous states faster than those that are more heterogeneous.

There are a few ways that racial and class diversity could affect the policy process and subsequent economic recovery of areas following a natural disaster. The Racialized Response Theory surmises that diversity leads to conflict, conflict leads to incoherent policies and, as a result, recovery is disjointed. Another perspective would theorize that diversity (along racial and class lines) creates an atmosphere of general malaise at the local level, and in places with high instances of minorities or poor there is consistent lack of government and social resources,

business investment and coherent policy planning (Ford 1994; McFarlane 1999). As a result, economic recovery would be suspect. Finally, an institutional racism perspective would posit that diversity leads to a targeted lack of investment in certain areas due to discrimination or decision rules that affect economic recovery in distinctive ways for certain parts of the population, namely those in minority groups and those who are impoverished (Bullock and Rodgers 1976; Smith 1997). This project tests the first perspective and theorizes that it is diversity itself that causes disjoint in planning, leading to disjointed recovery in areas that are highly diverse. As it is not possible to directly observe the policy process itself pre-Katrina, this project looks specifically at the effect of diversity on economic indicators over time. The results should shed light on whether this effect is systemic and will illuminate how the policy process itself can be informed to take into account how diversity might need to be managed for future disasters.

This project connects the literatures on power, policy, race and class to explore how extraordinary events affect the ability of places to regain stability. It tests empirically the effects race and class has on economic recovery as well as explores the dynamics of policy planning in diverse socioeconomic situations. This project makes a unique contribution to the literature on policy planning as well as the various literatures on minority competition and cooperation, intergroup conflict, and the political power studies that once dominated the literature in political science. The following methodology chapter describes at the development of variables, discusses the rationale for case choice as well as describe the methodology employed to analyze the data collected.

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Chapter Three: Methodology

Introduction:

Before proceeding with a discussion of emergency management planning at the local and state level and the analysis of how race and class affect the economic recovery of Louisiana and Mississippi, a discussion of the panel analysis methodology, and variable creation, as well as the qualitative analysis procedure is needed. This chapter provides a detailed discussion of how the cases for analysis were chosen, data sources, how each variable used in the quantitative chapters was created, the methodology employed to analyze the data, as well as the qualitative content analysis procedure used to analyze state emergency management plans. To begin, this chapter will discuss the justification for choosing the cases included in the project and the decision to utilize panel analysis.

Case Selection:

The cases in this project include all of the counties and parishes (Louisiana's etymology uses "parishes" to delineate county governments) in the states of Louisiana and Mississippi that were classified by FEMA as eligible for both Individual and Public Assistance post-Katrina. Mississippi was selected as a case due to the fact that it had a large number of counties affected by the hurricane with varying degrees of class and racial diversity. Additionally, since a project of this nature has not yet been conducted, the opportunity to explore the dynamics of urban issues, emergency management, and race and class in a state not typically the focus of post-hurricane analysis provides a unique opportunity to contribute to the literature. Also, because of the heavy focus on New Orleans we don't know much about the rest of Louisiana or any other state that suffered damage at the hands of Hurricane Katrina. Tracking two years before the storm and two years after the storm ascertains the effect race and class had on each locale in the

dataset. This provides a baseline of the economic conditions prior to the storm and allows for an examination of how quickly a locale was able to return to a baseline state post-disaster. Additionally, it should be noted here that this project provides a snapshot of the immediate pre/post socioeconomic changes in the states affected.

Data and Data Sources:

Counties are used as the unit of analysis due to the lack of available data for both Louisiana and Mississippi's smaller cities. The main dependent variable—the number of job starts, is defined by the census as employees in newly created jobs that *were not* employed by the same employer in a 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 dataset.

$$\text{New Hires} = \frac{\text{New Jobs Added}}{\text{Total Jobs- Job Separations}}$$

This information is provided by the Quarterly Workforce Indicators tracked by the Longitudinal Employer Household Dynamic dataset for the Census. The New Jobs Added portion of the New Hires equation is taken from the U.S. Census Local Employment Dynamics Quarterly Workforce Indicators dataset. For each entity (county or parish) included in the data set, this number reflects the "estimated number of workers who started a new job (Abowd 2011)." Specifically, this number reflects 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 of the previous year. Next, 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 2011). Thus a worker is counted in this equation if he or she has

positive earnings in *t-1* and *t.* Finally, the Job Separation portion of the dependent variable is calculated as the estimated number of workers who had a job for at least a full quarter and then the job ended (Abowd 2006). Thus a worker is defined as separated if he or she had positive earnings in *t,t-1*, but no earnings in *t+1*. Each component of the formula above answers a different question about the economy. Separations highlight which economies are losing stable workers, while New Hires highlight which economies are hiring new workers. Total Employment is a reflection of which economies at the beginning of each quarter performing the best, who is being employed by various industries and are there discernable trends among local economies (i.e., are industries growing or shrinking at similar rates). Since the dataset collects information at the county and parish level, information about individual industries or businesses within each area is not included in the data but is available through the Quarterly Workforce Industries data tools.

Another ratio level variable is created for the other dependent variable—the number of new housing permits issued by each parish/counties during the same period. The data for new housing permits come from the Building Permit Estimates dataset as reported by the Census. The New Housing Permits are reported to the Mining, Manufacturing, and Construction Statistics division of the U.S. Census by local permit-issuing jurisdictions by a building or zoning permit. Not all areas of the country require a building or zoning permit. Thus, these statistics only represent those areas that do require a permit (2009). Total Housing Stock reflects the annual housing estimates reported by the Population Division of the U.S. Census.

$$\text{New Homes} = \frac{\text{New Housing Permits Issued}}{\text{Total Housing Stock}}$$

The main independent variables for this study are the yearly percentage of minority residents in a county and the percentage of residents living under the poverty level in each county for the years under study. This information was collected using Population Estimates (Census 2008b) and the Small Area Income Population Estimates data (Census 2008a) for the counties and parishes under examination. Other variables of interest are the amount of federal funds approved by FEMA as well as the amount of damage assessed by FEMA mitigation teams post-disaster.

A note on the percentage of minority residents' variable: the United States Census categorized those of Hispanic origin as a separate ethnic group. So respondents answering race and ethnicity questions may choose Hispanic or non-Hispanic origin and a race category. The census uses six categories to delineate race: White Alone, Black Alone, American Indian and/or Alaskan Native alone, Asian Alone, Native Hawaiian and/or Other Pacific Islander Alone, or two or more races. For the purposes of this study, minority population includes the respondents who were of Hispanic Origin and any race, as well as individuals who were non-Hispanic in origin, but non-white. It should be also noted that the percentage of residents of Hispanic origin, as well as other racial groups aside from African-Americans is very low in the states of Louisiana and Mississippi until recently, (Brunsma 2007) African-Americans were the dominant racial group.

FEMA funds are the total amount of funds approved for each county under examination. 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 Assistance (IA) and Public Assistance (PA) funds dedicated to recovery in each county. FEMA's Individuals and

Households Program (IHP) assists homeowners and renters with reconstruction after a declared disaster (Federal Emergency Management Agency 2008). Funds help applicants pay for temporary housing, repair, replacement, disaster related medical services, burial costs, and moving expenses for example. FEMA's Public Assistance (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 the purpose of this study, the percentage of total funds received by each parish/county was recorded.

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 offers up to $150,000 in compensation to homeowners for losses sustained after the hurricanes. It also provides compensation in the form of loans and grants to owners of rental properties to rebuild. Finally the program compiled a list of participating building professionals so that homeowners can access guidance on rebuilding new homes to post-Katrina building standards (Home 2007). 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 their rebuilding efforts in the devastated Gulfport area. The Housing Assistance Program, or HAP, provides homeowners with money to rebuild homes that sustained damage during the storm. The program had two phases. Phase one was directed at homeowners with homeowner's insurance and phase two was directed at homeowners with a household income beneath 120% AMI with Hurricane Katrina storm surge damage. Like the Road Home program, HAP offered up to 150,000 dollars in compensation for hurricane victims (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, tenure, insurance status and housing type) 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. Table one below lists all the variables used in the project as well as there source.

Table 3.1 Variables and Sources

Variable	Source
New Hires	Local Employment and Household Dynamics (LEHD) dataset
New Home Construction	Manufacturing, Mining, and Construction Statistics (MMCS) dataset
Percentage of Minority Residents to White Residents	Population Estimates dataset
Percentage of Residents Living Under Poverty Line to Those Living Above It	Small Area Income and Poverty Estimates (SAIPE)
% of Individual Assistance Received	Federal Emergency Management Agency
% of Public Assistance Received	Federal Emergency Management Agency
% of State Program Funding Issued	Road Home Program, Housing Assistance Program.
Katrina/Rita	Dummy Variable coded 0 prior to storms and 1 during and following storms.
Year	Coded 1 for year of interest, 0 for all other years.

Variable Creation:

This section discusses how each variable was calculated for use in the analyses. The U.S. Census defines New Hires as the total number of ascensions that were not employed by an employer during the previous four quarters. In plainer language, this number tracks the number of new hires working for an employer in the current quarter. This allows a researcher to

determine which industries are hiring new workers, which geographic areas are doing the most hiring, or who (old or young) is being hired for work. The new hires variable, which tracks the jobs created during the duration of the study, was created by taking the quarterly QWI New Hires numbers and dividing them by the quarterly Total Employment numbers. Total employment is calculated by the Census by tracking the beginning of quarter employment total of workers who were employed by the same employer in both the current and previous quarter. Thus, new hires that were employed in quarter one who retained their job in quarter two would be rolled into the total employment number for that particular county in the following quarter.

The result is a percentage or ratio of new hires to total employment that changes for each year in the data set. Years were used in the project because data for housing construction are only collected for certain areas on a yearly basis, thus making annual instead of quarterly comparisons between job creation and housing construction necessary. Ratio level variables allow for data to be arranged in such a matter that each county has a unique number attributed to job or housing growth throughout each year. Ratio level variables are ordered, mutually exclusive and have an absolute zero point that is meaningful for analysis (Johnson et al. 2008).

The Manufacturing, Mining, and Construction Statistics department of the US Census Bureau tracks monthly and annual new home permits by county for all 50 states. A new home permit is defined as a new privately-owned residential housing unit authorized by building permits. Other items that could be analyzed using these data include: number of buildings, units, and construction costs from new privately-owned residential building permits issued. These data are updated monthly. Most of the permit-issuing jurisdictions are municipalities; the remainder are county offices, townships or unincorporated towns. In some cases, counties are large enough to be tracked monthly and others only yearly.

The Katrina variable is a dummy variable. For the years in the panel, Katrina is coded 0 for the years prior to the storm making land (2003 and 2004). For years affected, the variable is coded 1 (2005, 2006 and 2007). In some models year dummy variables were added to ascertain the magnitude of difference of the race and/or class effect on economic development for each year since the storm had passed. The imputation of data for panel analysis requires that each year be represented in the panel. Therefore, in the analysis of the effect of each year on local job creation and housing, a dummy is created to separate that year's observation from the other years in the dataset.

Panel Analysis Methodology:

Before presenting the results of the panel analysis, this section discusses the rationale to use the panel model to estimate changes in employment and housing. Time series analysis (of which panel analysis is a part) permits the analysis of a consistent set of variables with data collected on units of analysis over multiple periods. This approach has many uses, for example, the analysis of performance between different operating units (i.e., stores) over time. Within the social sciences, panel analysis enables researchers to analyze, among other things, political behavior and organizations over time. Since the data collected create a natural panel by which a deeper exploration of how the dynamics of minority and class diversity affect economic output, panel analysis techniques were used. In all cases, panel analysis is used to analyze the temporal effects of the independent and dependent variables. Because the variables include demographic changes from before, during and after the storm, the model controls for any significant changes in racial or class composition.

Random vs. Fixed Effects Models:

Panel data analysis includes both temporal and spatial dimensions. The spatial component refers to a set of cross-sectional units. These could be firms, counties, states, or even individuals. The temporal dimension is the periodic observations of a set of variables describing the cross-sectional units over a particular time span. Fixed effects models explore the relations between predictor and outcomes variables *within* an entity (in this case counties). Thus, a fixed effect model assumes that there are individual level characteristics that bias predictor outcomes and should be controlled. The fixed effect model removes the impact of these individual (or time-invariant) level characteristics to assess the predictor variables net effect.

(1) Fixed Effects: $Y_{it} = \beta_1 X_{it} + \alpha_i + u_{it}$

Where: α_{it} is the *unknown* intercept for each entity

Y_{it} is the dependent variable where *i* represent the entity and *t* is equal to time

X_{it} is an independent variable

β_1 is the coefficient for the independent variable

u_{it} is the error term where *i* represents the entity and *t* is equal to time (Gujarati 1995; Stock 2003)

In a random effects model, it is assumed that the variation across entities (in this case counties) is random and uncorrelated with the independent variables included in the model (Greene 2003). Thus, the alpha term (which is an unobservable effect of each individual entity) is treated as an unknown parameter in a fixed effect model and a random parameter in the random effect model (Hsiao 2003). The following equation models the random effect relationship:

(2) Random Effects: $Y_{it} = \beta X_{it} + \alpha + u_{it} + \varepsilon_{it}$

Where: α_{it} is a *random* intercept for each entity (*i)* at each *t* (time),

Y_{it} is the dependent variable where *i* represent the entity and *t* is equal to time

X_{it} is an independent variable

β is the coefficient for the first independent variable

u_{it} is the between-entity error term where *i* represent the entity and *t* is equal to time, and

ε_{it} is the within-entity error term where *i* represent the entity and *t* is equal to time

(Stock 2003)

Since it is assumed that the variation across each entity (county) is unrelated to the independent variables included in the model, using random effects is appropriate (Greene 2003). Additionally, random effects models have the distinct advantage of allowing for time-invariant variables to be included among the regressors (Yaffee 2003). Since this project is interested in ascertaining the effect of federal and state funding on job and housing creation post-disaster, it is necessary to use random effects estimation. Finally, using a random effects model allows a researcher to make inferences about entities not included in the sample.

The generally accepted rule of thumb for choosing between the fixed and random effect models is to use the fixed effect model when you want to control for omitted variables that differ between cases but are constant over time. Random effects are typically used when some omitted variables may be constant over time and vary between entities *or* may be fixed between cases but vary over time. Essentially, random effects allow a researcher to control for both types of

omitted variable bias by estimating the weighted average of the fixed and between effects estimator (see formula 2 above).

One way to determine which model is most useful is by running a Hausman test. A Hausman test checks a more efficient model against a less efficient but consistent model to make sure that the more efficient model also gives consistent results (Stock 2003; Wooldridge 2002). The Hausman test tests the null hypothesis that the coefficients produced by the random effects estimator are the same as the ones produced by the fixed effects model. If they are insignificant with a chi-square larger than .05, then one should use the random effects model; if not, one should use the fixed effects model. A Hausman test was run for each model presented in subsequent chapters to determine if a fixed effects or random effects model was indeed the correct model to be used.

Another way of thinking about fixed versus random effects models is that a fixed-effects analysis can only support inference about the group of measurements (subjects, states, etc.) you actually have - the actual subject pool you looked at. A random-effects analysis, by contrast, allows you to infer something about the population from which you drew the sample. If the effect size in each subject relative to the variance *between* your subjects is large enough, you can guess (given a large enough sample size) that your population exhibits that effect. Thus when random effects models are reported in the quantitative chapters, some generalizations to other counties affected by Hurricane Katrina that are not included in this study can be (tentatively) made (Wooldridge 2002).

Panel Analysis vs. Linear Regression:

Panel analysis allows a researcher to conduct a longitudinal data analysis. While a researcher could simply produce a linear regression model and use a cluster function to group

cases by a time period, panel analysis allows a researcher to control for some types of omitted variable bias, something linear regression, even when using a cluster function, cannot (Yaffee 2003). Further, because panel analysis has various functions (i.e., fixed effects, random effects and between effects), a researcher has more control over determining which model fit is best for a particular panel of data. Additionally, panel analysis allows for the examination of balanced and unbalanced panels (i.e., variables may be present in one year but not another, or data may be available for one case in a certain period but not for another), something linear regression cannot do (Greene 2003).

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Chapter Four: Louisiana

Introduction:

The state of Louisiana has an economic, political and social history unlike any other state in the union. There is a rich diversity of people, including Native Americans, as well as settlers from France, Spain, England, Germany, Acadia, the West Indies, Africa, Ireland and Italy (S. o. Louisiana, 2009, pp. 584-586). French colonists initially settled Louisiana and were soon joined by Spanish and Acadian explorers. Later, French aristocrats fleeing slave revolts in the West Indies or the French Revolution joined the mix. As part of this French colonial legacy, counties in Louisiana are called parishes. In addition the judicial system in Louisiana has its roots in Napoleonic law, not English common law which is practiced in the rest of the 49 states in the Union (Court, 2009).

The state has been governed under ten different flags beginning in 1541 with de Soto's claim of the region for Spain. La Salle, a French explorer later claimed it for France and for many years Louisiana was a subject of Great Britain, Napoleonic France, and the Lone Star flag of West Florida. During the Civil War, Louisiana became an independent republic before joining the Confederacy (S. o. Louisiana, 2009). In 1803, the United States had a stake in Louisiana due to its importance to increasing global trade and for the security of the growing south and mid-west regions of America. President Thomas Jefferson negotiated the Louisiana Purchase from Napoleon I in 1803.

Louisiana's early economy was marked by the importance of the region as a trading and financial center. Although the Civil War shattered the plantation economy that created much of Louisiana's wealth in the 1700 to1800's, the state continued to be a powerful agricultural center

after the war. The land was fertile and Louisiana soon had a significant place in the growing US economy as the leading producer of sugar, cotton, indigo, and later sulphur, oil and natural gas.

Social Institutions and History:

During the Antebellum period, state government authorities granted large pieces of land, called concessions, to influential white men. Most colonists at the time received smaller holdings, called habitations and as time went by habitations became smaller. When sugar and cotton became profitable in the 1800s, many concession owners sought to consolidate habitations into large plantations (Museum, 2009). To run these plantations, white landowners relied on slaves to maintain the crops. Cotton was important for Louisiana's economy and in 1860; Louisiana produced nearly one-third of all cotton exported from the United States overseas. Sugar was also an important crop and during the antebellum period, nearly all sugar consumed in the United States came from Louisiana.

Slaves made up slightly less than half of Louisiana's population in 1850. Nearly three-fifths of these slaves lived on plantations outside New Orleans (Museum, 2009). In 1811, the largest slave revolt in the history of Louisiana broke out. During the uprising, two white men and sixty-six slaves were killed and several plantations were destroyed by fire. Slaves, who were caught, were tried and killed as a warning to other potential rebel slaves. Slavery continued in Louisiana until the end of the Civil War. During the civil war, Louisiana played an important role in providing munitions and other goods to Confederate forces. In 1862, the Union occupied New Orleans and remained in the area for the duration of the war (Museum, 2009).

Louisiana played an important role during Reconstruction; the state was the only area in the Deep South where Union authorities implemented Reconstructionist policies during the Civil War. Since Union forces occupied New Orleans, southern Louisiana served as the experimental

ground for early integration attempts. Lincoln's Emancipation Proclamation did not apply to Union-held territories, thus slavery continued in the 13 parishes occupied by the Union. Lincoln's plan to readmit states to the union by selecting delegates had a liberating effect on slaves in the state; delegates to the constitutional convention agreed to abolish slavery without compensation to slave masters, although they did not extend voting rights to black men.

The constitution adopted in 1864 extended voting rights to black men who fought for the Union, owned property, or were literate (Museum, 2009). The Freedman's Bureau, an agency created by the United States Congress tried to solve issues pertaining to the ending of slavery, but was unsuccessful in affecting change in postwar economic and social relations. Louisiana and other southern states enacted Black Codes in 1865, a pre-cursor to Jim Crow laws, to curtail black electoral participation.

Radical Republicans, a loose faction within the Republican Party, who opposed Lincoln's terms for reinstating southern states after the Civil War, led the riot of 1866 in the city of New Orleans. Federal troops were called in, but arrived after much of the carnage had abated. Listed as one of the bloodiest riots during the Reconstruction era, it claimed 37 lives (34 black and 3 white) and wounded 146. Radical Reconstruction in Louisiana was very contentious with segregationists and white supremacists on one side, and Reconstructionist supporters on the other. The Louisiana Constitution of 1868 marked a huge victory for Reconstructionist causes as it extended voting rights to black males, established integrated schools and guaranteed equal access to public accommodations. The document did little to end racial discrimination, however, and the color line remained.

Economic Institutions and History:

With the end of the Civil War and slavery, the economic institutions of the state changed dramatically. Ex-slaves moved in droves from plantations to the cities of Baton Rouge and New Orleans seeking their fortunes. These large increases in population placed a strain on the economic development of cities as well as on the provision of social services. Plantations were broken up and agricultural advances automated the harvesting of many crops; sharecropping replaced many of the grand plantations of old. In the city, the building of a railroad offset the decline of steamboat traffic. In addition, the widening of the Mississippi River into the Gulf allowed larger ships to utilize New Orleans as a port. Repeated floods posed problems and levee construction increased during this time. In 1927, the federal government took over the construction of the levee system. Finally, the discovery of natural gas and oil in the 1900s spurred a new economy and industries capitalizing on the production of these new goods carried the state into the 20th century (S. o. Louisiana, 2009).

Local Government Institutions:

Parishes are the territorial subdivisions that manage the functions of local government within the state of Louisiana; the 64 parishes operate much like counties in other states. The main functions attributed to parishes range from bridge construction and maintenance to promoting economic development and tourism (P. J. A. o. Louisiana, 2009). Louisiana is unique in that its parishes are governed in most cases by policy juries. The policy jury form of government is similar to the traditional commissioner form of government. The jury performs legislative functions such as enacting ordinances, setting policy, and establishing programs. It also serves an administrative function as juries prepare the budget, hire and fire personnel and

negotiate contracts. In 1974, the state granted home rule authority to parishes and municipalities and since then, some parishes have adopted the police jury form. In addition, parish government in the state include President-Council charters, Council-Administrator, Parish-Commission forms of government as well as City-Parish consolidated forms. Four of Louisiana's eight metropolitan areas have adopted this latter form, including New Orleans.

The Levee System:

Since this project deals with the management of natural disasters, a discussion of the complexity of the levee management system is needed. As stated earlier, Louisiana has suffered its share of hurricanes, floods and tropical storms since its discovery by the Spanish in the 1500s (Roth, 2003). In 1717, the first man-made levee system was started by Bienville, New Orleans' founder and first mayor. Before this time, reinforcing natural levees that existed was the solution to assuaging storms. The original levees only reached three feet in height and the original levee system was completed in 1727 (Addison, 2000). After this time, private interests expanded the system. The unorganized levee system was turned over to the Army Corps of Engineers in the 1850s. Several Congressional studies pointed to issues of settlement and expansion of the city as major impediments to levee efficiency. The Army Corps of Engineers overlooked many of these findings and the city continued to grow. As time progressed and the city expanded, a new problem emerged.

Lake Pontchartrain is an estuary that leads to the Gulf of Mexico. In the 1920s, the Industrial Canal, a project funded by the state government, was built, and connected the lake to the Mississippi River. The canal passes through the 9th ward of the city. Like other canals throughout the city, it is managed by a lock system. During hurricanes, storm surges can build up in the lake and floodwaters often spill into the city as evidenced not only by Hurricane Katrina,

but also by several hurricanes since its construction. In 1947 when Hurricane Betsy overwhelmed the levee system, the Army Corps of Engineers undertook several projects to raise levees encircling the city and outlying parishes. But due to cost concerns, the levees were only built to withstand a category three storm.

The problems with the levee system in Louisiana have many facets. First, wetland degradation due to the vast expansion of the city of New Orleans post-Civil War has contributed to issues of flooding. In addition, the canalization system implemented by the ACE spurred by the burgeoning shipping industry in the 1950s increases the likelihood of diversion of floodwaters to places in the city and lake instead of the Gulf. Finally, the siphoning of sediment rich water into the gulf further erodes the natural protection provided by the surrounding landscape (Addison, 2000).

The Army Corps of Engineers stated that Hurricane Katrina was simply too massive, and that the swells created by it exceeded the walls causing much of the damage. Research has indicated that the levees constructed in the 1950s and 60s had flawed design features, inadequate construction and poor maintenance leading to the breeches that damaged much of the city (Grunwald, 2005). Essentially, the growth of the city, compromises in planning due to bureaucratic intervention and lack of funding resulted in much of the flooding that occurred in the city of New Orleans and the surrounding parishes in the wake of Katrina.

Levee Boards and Levee Districts:

Before the topic of local governmental institutions involved in hurricane planning and protection is completed, the levee board organizational structure should be discussed. Levee boards were created by the Louisiana state legislature in 1890 (Louisiana, 2007). Initially the board was created to protect the city of New Orleans from flooding, however other parish

governments in the state soon adopted similar levee boards. Before the creation of the board system, communities on the Mississippi River were responsible for creating and monitoring their own levee systems. In New Orleans, the levee board was responsible for the maintenance of over 126 miles of levee systems, floodwalls and other related structures.

The Orleans Levee District coordinates with the Army Corps of Engineers and also shares costs. In addition to the original responsibilities granted to the boards in 1890, in 1928 the state legislature authorized districts to construct, dedicate, operate and maintain public parks, beaches, marinas and other similar facilities (District, 2009). The operation of such boards has not come without scrutiny however. In the wake of Hurricane Katrina, the Orleans Levee District was investigated for malfeasance in relation to the maintenance of the levees under its purview. Further investigations revealed that levee boards often were mismanaged, highly political, and disliked by residents. The Orleans board admitted to accounting irregularities leading to the cessation of local board operations and approval by the state legislature for a state run board system in 2007 (Anthony L. Vogt, 2002; Hudson, 2005; Konigsmark, 2005; Nossiter, 2005, 2006).

Louisiana Pre-Katrina:

In 2005, per capita personal income in Louisiana ranked 50th in the United States (Analysis, 2005). The pupil-teacher ratio in elementary and secondary schools lagged behind the national average by 1%. National expenditure for education in 2004 was $8,711, in Louisiana; the figure was $7,669 per student, over a thousand dollars less per pupil. Average graduation rates in the state were 69.4% compared to the national average of 74.3% (N. C. f. E. Statistics, 2005). Finally, state unemployment in 2004 was 5.7 percent compared to the national average of

5.5. In 2005, the unemployment rate increased to 7.1 compared to the nation's average of 5.1% (B. o. L. Statistics, 2009).

Louisiana's economic development has a long history starting with early successes in agri-business and recently marred attempts to rejuvenate natural gas and oil production. The state is a study in contrasts. It is split between two Federal Reserve Districts. Additionally, the economic heartbeat of the state (New Orleans and Baton Rouge) is located south of I-10. These are the areas hardest hit by hurricanes (Wall, 2008). Each time a hurricane hits the state, the heavily exported crops grown in the south are affected. In addition, since Louisiana is home to 10% of U.S. oil reserves and 25% of natural gas supplies, a storm like Katrina can and does shut down these operations for long periods.

In the 1970s, much of the state's revenue from the burgeoning oil industry was used to improve schools and highways (""Louisiana"," 2000). When world oil prices dropped in the 1980s, the Louisiana economy suffered. Since the 1980s, Louisiana has had some of the highest unemployment figures for women and the highest percentages of individuals and families living in poverty (""Louisiana"," 2000). In the 1990s, Louisiana attempted to revitalize the economy by legalizing riverboat and casino gambling. In 1992, the state legislature voted to approve gambling in New Orleans (Staff, 1992). This change spurred the service industry and employment in that sector increased throughout the 90s. Shipping and chemicals also played a large part in the economic sustainability of the state throughout the 90s. Despite increases in certain employment sectors, however, Louisiana's household income distribution has always been skewed (""Louisiana"," 2000, pp. 584-586). Currently, Louisiana suffers from a "brain drain" and although nearly 50,000 of the 250,000 residents displaced by the storm have returned,

it is yet to be seen if Louisiana can equalize economic benefits throughout its citizenry (Liu, 2006; Wall, 2008).

Politically, before the storm the state was marked by distinct disconnects between the hedonistic southern part of the state (New Orleans) and the conservative north (Baton Rouge). The contentious relationship between Governor Kathleen Blanco and New Orleans mayor Ray Nagin was exposed during the hurricane. Unfortunately, intergovernmental relationships did not improve as rebuilding began. As New Orleans grew as a political and economic powerhouse, the politics of the city often clashed with the politics of the overall state.

The story of Louisiana politics usually begins with the tale of Huey Long, who in 1928 made Louisiana the nation's first welfare state (Laborde, 1985). He ran a campaign that railed against the bourgeois and upper classes and won the support of the economically disadvantaged in large numbers. Although Long did not serve a full term, he continued many of the pork barrel projects that garnered so much support.

From the 1940s through 1960, the Long family remained a large part of Louisiana politics. Politics during this time swung between anti-Long and pro-Long types of policies and governing styles. Earl Long, Huey's brother continued much of the spending programs his brother championed while serving as governor, thus creating a political culture of intense loyalty and cronyism unmatched in other states. Interestingly, the voting coalition that elected Long three times was largely black and poor. Where other legislators won throughout the South during this period running on platforms of racial hate and segregation, Earl Long ran campaigns that were colorblind.

Modern Louisiana politics is quite different from the politics of the Long brothers. As machines and cronyism declined in state politics, the rise of state and national media outlets

changed the nature of politicking. In 1979 Louisiana elected its first Republican governor since the year 1877, David C. Treen (Laborde, 1985). Although Treen capitalized on the suburbanization of the southern part of the state, the margin that elected him was narrow. Interestingly, Treen grew up as a Democrat, and his gubernatorial style was one of two party politics. His lieutenant governor, Robert Freeman, was a Democrat, as were many of the members of his cabinet (Rees III, 1979). Following the election of Treen, Louisiana has seen governors that are both Democratic and Republican. Republicans such as Murphy Foster (1996-2004) ran against gambling and for the business lobby. Democrats such as Edwin Edwards (1984-1988 and 1992-1996) ran campaigns much like the Long's, capitalizing on the growing strength of the black population and urbanization of the southern half of Louisiana.

Those that govern Louisiana do so in a state that is highly fragmented; there is a true north-south division, with Baptists and Protestants living in the north, and the south being more French-Catholic (Rees III, 1979). Additionally, the geography of the land is very different, with cotton fields to the north and swamps and bayous in the south. Thus, the politics of the state remain divided on cultural and geographic lines.

Demographics of Panel:

Before delving into the panel analysis of the data, an overview of the basic demographics of the cases under study is presented here. Table 1 summarizes the following variables: Individual Assistance and Public Assistance funds received during Katrina and Rita, Road Home funds received from the state of Louisiana and the percentage of housing damage in each parish.

Table 4.1: Summary of Funding and Occupied Damage

	Katrina IA Funds (by 1,000)	Katrina PA Funds (by 1,000)	Rita IA Funds (by 1,000)	Rita PA Funds (by 1,000)	Road Home Funds	% Damage (rounded)
Mean	136113.9	82989.97	14023.45	7349.83	41219.15	36.65%
Std. Dev.	486183.7	244182.7	38667.64	22107.94	13437.47	23.20%
Min	0	66.812	0	0	25819.72	6.4%
Max	2760094.33	1277477	233324	108982.1	80590.85	90.2%

Sources: FEMA, Louisiana Governor's Office of Homeland Security and Emergency Preparedness, Mississippi Emergency Management Agency.

The above table details the dollars dedicated to the state of Louisiana as of June of 2007. FEMA funding devoted to the region under the Individual and Households Assistance (IHP) program has two funding classifications: Other Needs Assistance (ONA) and Housing Assistance (HA). IHP eligibility is based on residence within a declared disaster area. Moreover, to be considered, the affected home must be the individual's primary residence and it must be located in the disaster area designated for Individual Assistance. Additionally, within each household applying for assistance, an individual or a pre-disaster member of the household must be a United States citizen, a non-citizen national, or a qualified alien.

According to the Federal Emergency Management Agency's website, these three funding streams allow for residents affected by disasters to qualify for funding to pay for temporary housing, housing repair and replacement and for permanent housing construction. In addition, applicants may also be eligible to receive money for disaster related medical bills, funeral costs, clothing and other household items as well as moving and storage expenses related to a disaster under the ONA classification (Agency, 2009). Five counties: Allen, Evangeline, Sabine, St. Landry and Vernon parishes received no funding although each parish sent applications for assistance. Orleans parish received the most funding, $2,760,094,329.58, with 278,499

applications coming from the IHP program, 276,349 individuals receiving assistance under the HA program and 111,622 receiving funding under the ONA program.

Table 4.2 details the proportion of minority residents living within all affected counties over the period under examination. Orleans parish, home of New Orleans had (and continues to have) the highest concentration of minorities and residents living under the poverty line as reported by the Census. Livingston parish, part of the Baton Rouge metropolitan statistical area, is located approximately 62 miles from Orleans parish, has (and continues to have) the lowest concentration of minorities in the panel.

Table 4.2: Minority and Class Proportions by Year

Year		Minority Proportion (in percentages)	Class Proportion (in percentages)
2003	Mean	30.66	17.90
	Standard Deviation	14.40	3.68
	Min	5.30	10.50
	Max	70.40	25.50
2004	Mean	30.76	18.92
	Standard Deviation	14.37	3.92
	Min	5.30	11.2
	Max	70.40	27.0
2005	Mean	30.84	19.77
	Standard Deviation	14.33	4.75
	Min	5.4	11.0
	Max	70.4	30.50
2006	Mean	31.21	20.13
	Standard Deviation	14.23	4.74
	Min	4.90	9.90
	Max	64.00	30.30
2007	Mean	31.40	19.17
	Standard Deviation	14.19	4.53
	Min	5.10	10.80
	Max	65.40	30.50

As far as poverty is concerned, St. Tammany and Ascension parishes had the lowest mean concentration of residents living under the poverty line in the dataset. Evangeline and St. Landry top the list with mean concentrations of 27.16% and 27.24% respectively. Evangeline

parish is located 173 miles from New Orleans and is in the center of the lower half of the state. St. Landry parish is located directly east of Evangeline parish and its county seat, Opelousas, is approximately 153 east of New Orleans. Orleans parish follows close behind with an average concentration of 24.7% of residents living below the poverty line for the period under observation.

Table 4.3 details the five year average of: the proportion of minority residents to whites, the concentration of residents living under poverty, percentage of IA and PA funds received out of the total sent to the state, percentage of housing damage and percentage of Road Home funds received by each parish in the year 2006. Interestingly, there seems to be little relationship between the amount of damage reported and money received from various sources, save Orleans parish. This could be due to differences in the population and housing density of other parishes affected by the storm, however a closer look at insurance claims, home ownership rates, and existing infrastructure among parishes might reveal more information on why funding was so dramatically different within the state.

Table 4.3: Summary Statistics of the state of Louisiana

Parish Name	Minority Ratio (in %)	Class Ratio (in %)	Housing Damage (in %)	FEMA IA Funds (out of 100 %)	FEMA PA Funds (out of 100%)	Road Home Funds (out of 100%
Acadia	19.5	21.92	25.2	.0003	.0001	.0012
Allen	27.36	21.64	44.9	0	0	.0019
Ascension	21.64	11.74	15.8	.0018	.0009	.0008
Assumption	32.94	20.2	24.8	.0011	.0003	.0008
Beauregard	15.3	26.02	51.0	0	.0004	.0036
Calcasieu	26.12	17.04	64.4	.0003	.0006	.0543
Cameron	5.2	14.04	90.2	0	.0001	.0118
East Baton Rouge	46.1	18.68	11.0	.0071	.012	.0008
East Feliciana	46.0	21.62	17.2	.0006	.0005	.0001
Evangeline	30.42	27.16	13.1	0	.0001	.0002
Iberia	34.72	21.44	25.7	.0006	.0002	.0054
Iberville	50.78	22.06	21.0	.001	.0005	.0003
Jefferson Davis	18.72	18.9	50.3	0	0	.0034
Lafayette	27.22	16.2	29.1	.0039	.006	.0041
Lafourche	16.68	16.2	29.1	.0039	.006	.0041
Livingston	6.04	12.54	21.9	.0032	.0013	.0011
Orleans	68.12	24.7	71.5	.5445	.416	.4728
Plaquemines	28.8	16.32	80.0	.0243	.0805	.0197
Point Coupee	38.34	21.94	11.2	.0004	.0002	.0001
Sabine	25.48	18.94	16.4	0	.0002	.0001
St. Bernard	11.76	16.86	80.6	.0699	.2363	.1207
St. Charles	28.5	12.78	49.5	.0066	.0077	.0049
St. Helena	53.16	22.1	45.4	.0007	.0003	.0012
St. James	50.32	17.32	35.2	.0015	.0007	.0015
St. John the Baptist	49.26	16.64	46.3	.0048	.0011	.0009
St. Landry	43.12	27.24	15.7	0	.0003	.0003
St. Martin	33.08	19.5	14.9	.0001	.0001	.0036
St. Mary	35.76	22.1	24	.001	.0004	.0865
St. Tammany	13.4	10.76	70.5	.0791	.106	.004
Tangipahoa	30.02	22.82	44.4	.0112	.0055	.0074
Terrebonne	24.66	17.88	31.6	.0047	.0015	.0139
Vermillion	17.22	19.48	38.8	.0001	.0001	.01

Table 4.3 Cont,d

Vernon	19.68	16.6	24.3	0	.0001	.0004
Washington	32.32	25.26	67.7	.0086	.0353	.0045
West Baton Rouge	37.06	16.56	14.1	.0003	.0003	.0001
West Feliciana	50.96	20.92	8.5	.0001	.0001	0

Figure 4.1: Race and Class Distribution by Parish

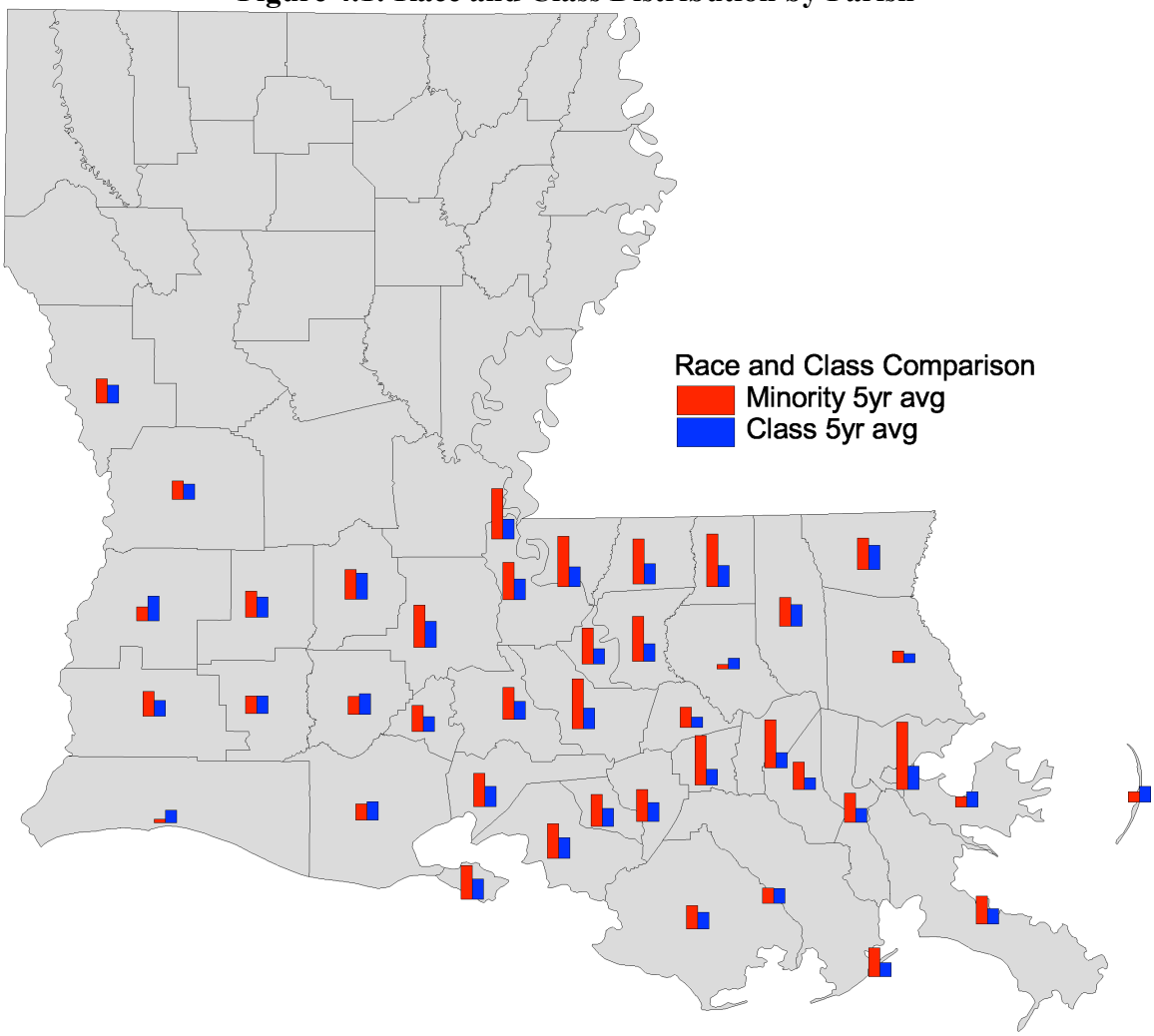


Figure 4.1 above shows the variation of race and class proportions for all parishes included in the dataset. Table 4 below details the main dependent variables of interest for all parishes; the ratio of new job starts during the period under observation and the ratio of new

housing construction permits to overall existing housing within each parish issued during the same period.

Table 4.4: Job Starts and Housing Permits

Year		Ratio of New Hires (in percentages)	Ratio of New Housing Permits (in percentages)
2003	Mean	19.15	.011
	Standard Deviation	3.67	.009
	Min	11.20	0
	Max	28.50	.04
2004	Mean	18.46	.011
	Standard Deviation	3.54	.010
	Min	11.90	0
	Max	26.80	.04
2005	Mean	21.79	.012
	Standard Deviation	4.26	.011
	Min	11.90	0
	Max	26.80	.040
2006	Mean	24.37	.015
	Standard Deviation	4.65	.013
	Min	15.30	0
	Max	32.50	.05
2007	Mean	22.01	.01
	Standard Deviation	3.62	.01
	Min	15.70	0
	Max	32.9	.03

The ratio of new job hires to the overall job situation of the parishes under examination fluctuated very little over the period. Looking at the average percentage of jobs created in the year directly following Katrina and Rita, there was an increase in hires of 2.58%. The parishes that fared best in the aftermath of the hurricane were Cameron, St. Tammany, Tangipahoa, and Vernon. These four parishes had vast differences in the amount of damage suffered from Katrina, with FEMA/HUD reporting 90.2% severe damage reported in Cameron parish to just 44.4% severe damage in Tangipahoa (Research, 2006).

Theoretical Impact:

As mentioned in the preceding chapter, natural disasters usually involve a disruption to the local economy. In the cases of Katrina and Rita, the economic impact was higher than usual, causing extreme damage to housing stock and building infrastructure as well as affecting the health of the human infrastructure needed to restart the economy once each area received the all clear. Evacuation numbers from Hurricane Katrina totaled over 1 million residents over the age of 16 (Kosanovich, 2006). For residents who fled the storm, the length of stay in out-of-state areas varied from short to long term, and in some cases was permanent. Decision makers charged with economic recovery need to consider how to handle future disasters, thus they require information on how the in and out-migration of populations throughout each parish affects economic recovery.

In addition to these economic considerations, an examination of the changing dynamics of race and class within each parish also needs to be explored. A substantial body of research has investigated the consequences of various disasters in the United States on labor market outcomes, primarily unemployment and employment ((Ewing, 2005; Webb, 2002). These studies generally find that the negative effects of natural disasters are short lived, with recovery levels of employment often outpacing pre-disaster levels. The short-term effects of Katrina on employment were described in the August 2006 *Monthly Labor Review*. Findings showed that employment declined in the affected states and counties but varied significantly by region, industry, and evacuation rates. Louisiana, in particular, had the most potential for labor market effects, as 17% of the state's employment was in the FEMA designated damage zone. In comparison, Mississippi's FEMA designated zone only contained 5% of the state's employment.

We now turn to the empirical testing of hypotheses developed in chapter two. The focus of the analysis here is on the effect of Katrina and Rita on the production of new jobs and new homes in each parish in FEMA designated areas. In the analysis that follows, a random effects panel model is used to determine labor market outcomes. The first model tests the hypothesis for new hires in each parish and includes the following variables: ratio of minorities living in each county over the time period, the ratio of residents living under the poverty line for each parish, per capita income for each parish, total population of each county as well as dummy variables to capture the effect of time before, during and after the storm. The second model tests the hypothesis that race and class have an effect on new housing permits in the dataset. Finally, a third model tests the hypothesis that funding has a mitigating effect on economic recovery. In this model we would expect the coefficients for race and class to be positive or not significant indicating that an influx of funding helped communities to overcome socioeconomic disparities post-disaster.

1. **H1: Increased ratios of minority concentration *decrease* the amount of economic recovery post disaster.**
2. **H2: Lower class concentration *decreases* the amount of economic recovery post disaster**
3. **H3: Increased ratios of both minority and lower class concentration *decrease* the amount of economic recovery post disaster.**
4. **H4: Increased funding mitigates racialized effects in terms of economic recovery.**

Panel Results:

In table 4.5, the dependent variable is the ratio of yearly new hires in each parish in the dataset. The quarterly data were totaled for each year in the panel to be consistent with the housing data collected from other census sources. Also in the model is a variable that has the ratio of minorities living within each parish (Minority Proportion). Other explanatory variables included in the model are a variable calculating the number of residents living in poverty for

each year of the dataset (Class Proportion). Class and poverty estimates were derived from the Small Area Income and Poverty Estimates (SAIPE) also collected by the Census (Census, 2008). Finally, dummy variables for years 2004 through 2007 are included to determine if there is a time effect in the model. Year 2003 is removed to act as a reference category in the model so that problems of collinearity are avoided. The second model (Table 4.6) estimates the multiplicative effect of race and class on job creation. The formula below is the mathematical representation of the theoretical implications:

$$1)\ Y_{it} = \beta X_{it} + ... + \beta_k X_{kit} + \alpha + \upsilon_{it} + \varepsilon_{it}$$

-or-

2) New Hires= Minority Proportion+ Class Proportion+ Minority*Class Proportion+ 2004+ 2005 (Year of Katrina and Rita)+ 2006+ 2007

Where Y is the number of new jobs created in each parish for each year of the dataset,

$\beta X_{it}...\beta X_{kit}$ are the coefficients for the indepedent variables for each parish (*i)* for each year (*t)* in the dataset,

where α is the random intercept for each parish (*i*) at each year (*t*) in the dataset,

where υ is the between parish (*i*) error term for each year (*t*) in the dataset,

and where ε is the within parish (*i*) error term for each year (*t*) in the dataset.

Table 4.5:
Effect of Poverty and Race on New Hires

Variables	New Hires Model
Minority Proportion	-.004**
	(.002)
Class Proportion	-.009**
	(.004)
Minority x Class Proportion	.0001
	(.0001)
2004	-.004
	(.008)
2005	.069***
	(.009)
2006	.109***
	(.010)
2007	.064***
	(.007)
Constant	.469***
	(.066)
No. of observations	185
No. of groups	37
R^2 (overall)[1]	.4510
Rho= .63599024	
Prob > chi^2= 0.7136 (Hausman test)	
Prob > chi^2 = 0.0000 (Breusch-Pagan Lagrange Multiplier test (BPLM))	

[1] Overall: The average R-squared from the between and within mean-deviated regression, which is equivalent to the ordinary r-squared from running OLS on the transformed data.

Interpreting the coefficients in random effects models is difficult because they include both within and between entity effects as illustrated by the formula above. In the case of time series, cross-sectional data the coefficient can be interpreted as the average effect of X over Y when X changes across both time and entity by one unit. In table 6 we see that the proportion of minority residents (H1) within each parish has a small, yet significant and negative effect on a one-unit change in job production within each parish in each year in the dataset. The individual year effect illustrates that the passage of time post-Katrina has a strongly positive effect on each unit of job production for each time period in the dataset.

Class also has a small, significant and negative effect on job production verifying hypothesis two. Interestingly, there is no evidence of a multiplicative effect of race and class on the production of new jobs throughout the panel time period, thus hypothesis three is not confirmed. The hurricane has a strong, positive affect on job creation during the years 2005, 2006 and 2007. The overall r-squared for the new hires model is .45, illustrating that the variables used to estimate this model explain 45 percent of the variation in the dependent variable. The Hausman test examines the null hypothesis that the unique error terms (u_i) are correlated with the regressors (as they are in the fixed effect model). In this case the value .7136 is greater than .05, thus using a random effects model is appropriate. Finally, the Breusch-Pagan Lagrange multiplier test tests the assumption that variances across all entities in the panel are zero, meaning there are no significant differences across units. To reject the null hypothesis that the random effects model is appropriate, the result of this test must be less than .05, since the threshold is .0000, we reject the null hypothesis that random effects is not appropriate and conclude that there is significant differences across the parishes in the data.

Table 4.6:
Effect of Poverty and Race on New Home Permitting

Variables	New Home Permits (Random)	New Home Permits (Fixed)
Minority Proportion	-.0006*** (.0002)	-.001 (.001)
Class Proportion	-.0011** (.0005)	.0005 (.001)
Minority x Class Proportion	.00002** (.00001)	-1.22e-06 (.00002)
2004	.0009 (.001)	.0001 (.0011)
2005	.002 (.001)	.0002 (.002)
2006	.005*** (.001)	.003* (.002)
2007	.0006 (.001)	.0000 (.002)
Constant	.036*** (.010)	.0333 (.040)
No. of observations	185	185
No. of groups	37	37
R^2 (overall)[2]	.2747	R^2(within)[3] .1388
Prob > chi^2= .0117 (Hausman test)		Prob> chi^2= .0117 (Hausman test)
Prob > chi^2 = .0000 (BPLM test)		Prob> chi^2= .0000 (Wald test)

[2] Overall: The average R-squared of the between and within mean-deviated regression, which is equivalent to the ordinary r-squared from running OLS on the transformed data.
[3] Within: Reflects the amount of variance explained by X after having taken out the fixed effect of the unobservable variables that affect each entity in the dataset.

In terms of new housing, the proportion of minority residents again is significant and negative, the expected direction based on earlier hypotheses (H1). Class also has a negative and significant effect (-.011), on each unit of housing production in the panel (H2). Race and class do not have an effect on housing production and the sign of the coefficient is in the wrong direction (H3). The yearly effect of time is strong and positive, but only in the year 2006. The overall r-squared value for the new homes model is .27 (using random effects), illustrating that the variables used to estimate this model are not accounting for as much of the variation in the dependent variable as is the case for job creation.

The Hausman test for the new home permitting model indicated that using a fixed effect model was more appropriate and the second column shows the coefficients of the same variables. A Wald test for heteroskedasticity confirmed that heteroskedicity was present indicating that robust standard errors should be used for this model. The r-squared value using fixed effects is .13 indicating that the variables hypothesized to have an effect on new home permitting post-disaster have very little explanatory effect on the dependent variable. One variable that is thought to be missing from the new homes model is rental data from each parish. Unfortunately, the census only collects these data from a sample of parishes and the data on rental rates at the time of the analysis were 5 years old. It could be possible that rental data as it becomes more readily available might help to provide more explanatory power in the model. However, due to the fact that thess data are not available for the time period under examination, nor are available for all parishes included in the dataset, they cannot be used here.

The sample was then divided into four categories marking the amount of racial and class disparity to measure evidence of a tipping point (H3a). To create this variable, the cases were split by the concentration of poverty and minority presence into four groups.[4]

Table 4.7: Race and Class Characteristics of Louisiana Parishes

	Race	
Class (Income)	Black	White
Wealthy	Examples include: Assumption, Jefferson, St. James, and St. John the Baptist	Examples include: Plaquemines, Terrebonne, La Fourche, Vernon, and St. Charles
Poor	Examples include: Tangipahoa, Orleans, Iberville, and St. Martin	Examples include: Acadia, Beauregard, Vermillion, and Sabine

Four dummy variables delineating a parish's socioeconomic composition were added to the database. Table 4.7 above shows the parishes that would fall under each classification throughout the panel. Table 4.8 shows the correlation table between the newly created variables and the original, untransformed dependent variables. The untransformed race and class proportion variables are moderately correlated with each other at .69 while the relationship between the newly created variables to the original untransformed variable range from a high of .66 between the High Black High Poor parishes to Class Proportion to a low of -.62 between the Low Black High Rich category and untransformed Minority Proportion variable.

[4] The minority proportion variable has a range from a minimum of 4.9% to 70.4%, class proportion ranges from 9.9% to 30.5%. To create this variable all parishes that had averages **above** the mean were categorized as high, and those **below** the mean were grouped as low for each category. Example: Parishes with a minority proportion above 30.9 and a class proportion above 19.1 are classified as High Minority/High Poor.

Table 4.8: Correlation Table of Race and Class Variables

	Minority Proportion	Class Proportion	High Black High Rich	High Black High Poor	Low Black High Poor	Low Black High Rich
Minority Proportion	1.00					
Class Proportion	0.6995*	1.00				
High Black High Rich	0.3221*	-0.2141*	1.00			
High Black High Poor	0.5864*	0.6614*	-0.3012*	1.00		
Low Black High Poor	-0.2649*	0.2595*	-0.1561*	-0.2875*	1.00	
Low Black High Rich	-0.6282*	-0.6816*	-0.3119*	-0.5744*	-0.2978*	1.00

Note: * Significant and the .05 level.

Then a model (table 4.9) to estimate the separate socioeconomic effect of each type of community was run. The following equations illustration the model specifications in as linear regression form.

(3) New Hires= Minority Proportion +Class Proportion+ Race x Class Proportion+ 2004+ 2005+ 2006+2007+ Low Minority*High Poor+ High Minority*High Poor+ High Minority*Low Poor

(4) New Homes= Minority Proportion+ Class Proportion+ Race x Class Proportion+ 2004+ 2005+ 2006+2007+ Low Minority*High Poor+ High Minority*High Poor+ High Minority*Low Poor

Table 4.9: Effect of Socioeconomic Categorization on New Hires and Housing

Variables	New Hires Model	New Homes Model[5]
Minority Proportion	-.005** (.002)	-.001 (.001)
Class Proportion	-.008** (.004)	.0006 (.0014)
Minority x Class Proportion	.0001 (.000)	-2.89e-06 (.000)
2004	-.003 (.008)	.0005 (.0011)
2005	.069*** (.008)	.0001 (.002)
2006	.109*** (.010)	.0033* (.002)
2007	.063*** (.008)	-.00007 (.002)
Low Minority*High Poor	-.0001 (.017)	-.001 (.010)
High Minority* High Poor	-.002 (.023)	.002 (.002)
High Minority* Low Poor	.005 (.019)	.031 (.002)
Constant	.472*** (.069)	.031 (.041)
No. of observations	185	185
No. of groups	37	37
R^2 (overall)	.4549	.1444
Prob > chi^2= 0.7338 (Hausman test)		Prob> chi^2= .0099 (Hausman test)
Prob > chi^2 = 0.0000 (BPLM test)		Prob> chi^2= .0000 (Wald test)

[5] Fixed effect model.

Notes: Numbers in parenthesis are robust standard errors.* significant at 10%, ** significant at 5%, ***significant at 1%

Both models estimate a negative effect of racial diversity on new hires and housing permits in the parishes during the time period under examination. In the new jobs model, both the proportion of minorities and poor residents has a negative and significant effect on job creation. An increase of .005 minority proportion in a parish results in a decrease of one unit of new hiring activity. An increase of .008 in poverty concentration results in a decrease of one unit of job creation. The passage of time again has a strong, positive affect on economic activity; however categorizing the parishes by socioeconomic differences has no effect what so ever on economic activity (H3a). The overall r-squared value for the new hires model is .45, which reflects a moderate explanatory power of explaining the variance in job creation during this time period. The second model estimating the effects of the independent variables on new home permitting perform poorly. None of the variables that were hypothesized to have an effect on home permitting reached statistical significance.

To ascertain the effect of funding on economic activity throughout the panel, two other models were run to assess its ability to mitigate the affects race and class in the panel. Because outside funding was only recorded as a total by FEMA and GOSHEP, and not in yearly distributions to each parish, using a linear regression model instead of a panel regression is appropriate here. The formulas below reflect the linear regression specification for each model.

(5) New Hires= Minority Proportion +Class Proportion+ % of Public Assistance Received+ % of Individual Assistance Receive+ % of Road Home Assistance Received

(6) New Homes= Minority Proportion +Class Proportion+ % of Public Assistance Received+ % of Individual Assistance Receive+ % of Road Home Assistance Received

Table 4.10:
Effect of External Funding on New Home Permitting and Job Creation in Louisiana

Variables	New Hires	New Home Permits
Minority Proportion	-.0022* (.0011)	.00002 (.0001)
Class Proportion	-.006** (.002)	-.0012*** (.0004)
% Individual Assistance Rcvd.	-.012 (.237)	.070 (.045)
% Public Assistance Rcvd.	.103 (.176)	-.018 (.041)
% Road Home Assistance Received	.332 (.271)	-.086** (.032)
Constant	.508*** (.041)	.036 (.009)
No. of observations	37	37
R^2 .3613		R^2 .3819
Prob > F= 0.0001		Prob> F= 0.0009

Notes: Numbers in parenthesis are robust standard errors.* significant at 10%, ** significant at 5%, ***significant at 1%

In table 4.10, which illustrates the effect of funding on new hires, an increase in minority proportion decreases job creation .0022 (H1). Similarly, poverty affects job creation by .006 for every unit of job creation in the dataset. Federal Public and Individual assistance have no statistically significant affect on job creation, nor did the influx of state Road Home funds. The r-squared for the new hires model is .36, reflecting moderate explanatory power. Turning to new homes, minority proportion has a positive, but insignificant affect on permitting, thus hypothesis one is not supported when looking at home permitting. Class has a significant and negative

effect. And of the various funding streams, only the state's program had an effect on home permitting in the panel. The r-squared for the new homes model is .38, a moderate fit to the data.

A model estimating all variables was run to determine the effect of race and class on economic recovery in the state. The results in table 4.11 illustrate that both the proportion of minority and poor residents for both model performed as hypothesized, each having a significant and negative affect on new hiring and new home permitting throughout the panel. Only Road Home funding had an affect on new home permitting in the state, however the effect negative and significant, not positive as expected. The yearly effect was strong for new job production, but limited in new home permitting. Overall the fit of each model is moderate, with the variables predicting 44% of the variance in new hiring and 32% of new home permitting respectively.

Table 4.11 Effect of All Variables on Economic Recovery

	New Hires Model	New Homes Model
Minority Proportion	-.009** (-.003)	-.001*** (-.0002)
Class Proportion	-.015** (-.004)	-0.00252*** (-.0006)
Race x Class Proportion	.0004* (-.0001)	.000004*** (-.00001)
High Black High Rich	.030 (-.0299)	.005 (-.00459)
High Black High Poor	-.0118 (-.0283)	.006 (-0.00374)
Low Black High Poor	.0004 (-.0248)	.00096 (-.003)
2004	-.00333 (-.00619)	.00141 (-.000846)
2005	.0689*** (-0.0106)	.00373* (-0.0014)
2006	.110*** (-.0114)	.00632*** (-.0016)
2007	.0652*** (-.0106)	.00137 (-.00155)
% Individual Assistance	-.278 (-.204)	.0563 (-.036)
% Public Assistance	-.0461 (-.117)	-.0263 (-.0298)
% Road Home	.365 (-.268)	-.0710*** (-.0194)
Constant	.593*** (-.0644)	.060*** (-.0101)

Table 4.11 Cont,d.

No. of observations	185	185
Adjusted R^2	0.442	0.327
Prob>F	.0000	.0000

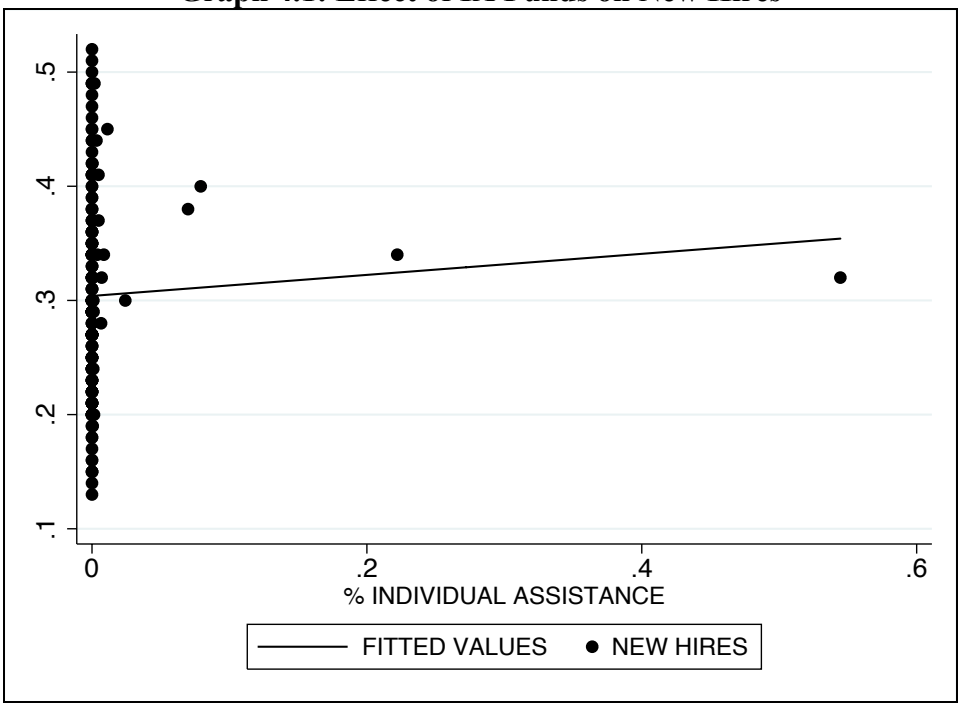
Notes: OLS Regression. Numbers in parenthesis are standard errors.* significant at 10%, ** significant at 5%, ***significant at 1%

Overall, hypotheses one and two testing the effects of poverty and minority proportion on job activity post-disaster were largely confirmed. Hypothesis one predicted that the higher minority proportion within an area, a decrease in job and housing creation would result. Hypothesis two predicted that an increase in the proportion of residents living in poverty would result in lower job and housing creation throughout the panel. Hypotheses one and two were not confirmed when exploring the relationship between race, class and home permitting throughout the panel. Further, evidence of a multiplicative effect of race and class was not borne out in any of the analyses above. Finally, the effect of outside funding on promoting job activity and home permitting was negligible.

Finally, to further explore the relationship between funding on job creation and home construction, the following graphs illustrate the prediction of the dependent variable (in this case, New Hires or New Home Permitting) from a linear regression and plot the values predicted by the model as a line in graphic form. This linear prediction plots show in graphical form the fit between the amounts of funding received on the creation of new jobs throughout the panel. This is the same as running a regression modeling a single independent variable and dependent variable, predicting the fitted values from the regression model for each entity and plotting those fitted values against a scatterplot of the original data. Graph 4.7 estimates the effect of the Individual Assistance funding streams new job creation for the all the years in the dataset. For sake of space, the linear prediction plots for the new housing variable are not shown but the

effect is nearly identical. In the case of the other funding streams and their relationships to the other dependent variable, New Home Permitting, which were estimated but not shown here, the effect of funding was very small. Additionally, the large amount of funding directed to Orleans parish in all cases acts as an outlier pulling the regression line upward.

Graph 4.1: Effect of IA Funds on New Hires



Conclusion:

The state of Louisiana suffered significant damage after hurricanes Katrina and Rita made ground. In terms of job creation, we see that higher diversity acted as a significant impediment to job creation post-disaster. In term of lower class, the effect was less apparent but did depress job creation. In terms of housing development in parishes following the storms, higher proportions of minorities are negatively correlated with the amount of new permit issued post-disaster. Class was also shown to have negative effects on new hiring activity but not in the area of new home permitting. This effect remained when taking into account the massive amounts of outside investment from FEMA and the state to the parishes as well.

As we move forward to analyzing the greater New Orleans area, it is expected that the findings will remain similar to what was found here. Minority composition and lower class are expected to act as significant deterrents to economic activity in both housing and job creation. Funding, however, may bolster economic activity as Orleans parish received the most funding of all parishes. As New Orleans was the most damaged during the hurricane season of 2005 however, and suffers from the greatest poverty contrast of the parishes, results could show that class, not race, has a more significant effect in the models to follow.

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Chapter Five: New Orleans

Introduction:

In the early 1700's when Bienville founded the city of New Orleans, it was the only place among the marshes and thickets that had solid soil and thus, could support a port city (Miller 2008). The initial settlement, named L'Isle de la Nouvelle Orleans (the island of New Orleans), was virtually surrounded by water. In 1718, the urban landscape began to take form. The first plan called for a sixty-six block grid until the city was expanded under Spanish rule in the 1760s. Population growth nearly tripled from 3,100 residents in 1769 to 8,000 –plus residents in 1797. Trade primarily drove population and sprawl. The Spanish built the Corondelet Canal to facilitate drainage and navigation. At the same time, two fires (in 1788 and in 1794) ravaged the inner city and the Spanish rebuilt on a much larger scale following those events. Changes to the municipal building codes required fire walls to be constructed in new homes and businesses as well as requirements for using more brick and cement as building materials (Magill 2003 quoted in Miller 2008). Regardless of the explosion of growth during the early period, building did not cross the river, thus the city of New Orleans remained within the crescent created by the natural boundary of the Mississippi River.

Social Institutions and History:

Racial segregation played a major role in the cultural development of New Orleans from its founding. When the Spanish took over rule of the territory from the French in the late 1700s, western traditions of ethnocentrism drove much of the social policies enacted in the city. Coupled with the use of the port city as a major slave trading post, race has been an integral component of interpersonal relationships in the city for over 300 years.

The Spanish authorities made race mixing illegal in the late 18th century (Miller 2008). Before this change in law however, race mixing was prevalent in the city. The French, the original settlers of New Orleans had adopted a social classification scheme much like they had adopted in Haiti, and sorted residents based on their ethnic variations (i.e., Pure Black, Three-Quarters Black—Sambo or Mangro, half-Black-Mulatto, one quarter black—Quadroon, and less than one-quarter Black—Octroon, or Pass as White- Kephart, 1948 quoted in Miller, 2008). Thus after the enactment of race mixing laws in the 1800s, many mixed raced residents passed into white society in order to benefit from membership in the city's political and social elite. When the United States gained authority in the territory, segregationist policies were enforced often more harshly than under Spanish and French rule.

In fact, after Louisiana was accepted into the union, the politics of segregation (i.e., denial of social, economic and political access) began what many observed after Hurricane Katrina as "extreme stratification" (Dreier et al. 2001). Despite the increase of a racialized landscape within the city, it continued to grow attracting immigrants from Ireland, Germany, and Italy. With the onset of Jim Crow coupled with discriminatory lending and housing policies of the late 19th and early 20th century, the city of New Orleans began to exhibit a highly stratified social and economic landscape (Dreier 2006).

By the time Katrina hit, New Orleans was one of the poorest and most segregated cities in the America. Residential segregation was so prevalent that in order for there to be an equal distribution of blacks and whites in every neighborhood within the city, 69% of black residents would have to relocate (Center 2000). Additionally, 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 2006). In addition, research

by the Brookings Institute reveals that in 2000, New Orleans ranked second among all US cities in concentrated poverty behind El Paso, Texas (Durant 2008).

Economic Institutions: History and Present Day

The slave-based economy flourished in New Orleans under Spanish rule, the second brief French command, and American control until the Civil War (Graham 2008). After the Civil War, emancipated slaves left rural parishes and settled in New Orleans. Prior to emancipation, the city's residential patterns were organized loosely, with black and white residents living in close quarters. After the Civil War, during reconstruction and the introduction of Jim Crow, the residential patterns had a marked shift with clusters of black blocks located within larger census tracts, with whites and mixed race residents on the outer fringes and main avenues. Additionally, the concentrating of blacks in close quarters was exacerbated by the custom of building slave quarters and servant's quarters in the rear of the master's house. Little changed until the civil rights movement of the 1960s, however by this time, the expansion of the city allowed for whites to flee to other surrounding areas leaving black residents behind in the center (Graham 2008).

New Orleans' economy has been dominated by four sectors: oil and gas related activities, tourism, shipbuilding and aerospace manufacturing. After the oil bust of the 1980s, many large oil-related industries left New Orleans. In the absence of a strong oil and gas industry, New Orleans turned to tourism as its major economic engine. Tourism is the driving force of the economy, supplying the city with over 66,000 jobs in 2004 (History 2000). Despite New Orleans' heavy focus on tourism as a money maker, it is also a major transportation hub and its location in the Gulf of Mexico makes it a port of call for many imported goods from Latin and South America.

The influx of nearly 10 million visitors annually to the city is a double-edged sword for economic prosperity however; many jobs within the tourism industry are low paying and seasonal. Research has found that retail businesses connected to the tourism industry typically recover last after natural disasters (Waugh Jr. 2006). Additionally, small and locally owned business typically fall prey to the same fate. After Hurricane Katrina made ground, the effects of the city's reliance on tourism as a backbone of the local economy became evident (Redwood 2008). Directly after the storm, the New Orleans area lost over 200,000 jobs in both the public and private sectors. In November of 2005, the unemployment rate was 17.4% compared to the 4.6% reported in 2004 (Whelan 2006). Although the unemployment rate fell to 8.2% in December of 2005 and had mostly recovered by April of 2006 (5.1%), problems with housing and insurance claim processing exacerbated the ability of businesses to get back on their feet.

Complicating issues even further was the influx of a new minority group post-Katrina. The H-2B guest worker program, which paid laborers to relocate to New Orleans to assist in rebuilding, had various problems. First, many Latino workers reported being promised full time work and wages between $1000-1500 per month (Redwood 2008). But when workers arrived, most received wages that were substantially below this figure. Additionally, the H-2B visa program restricted workers from seeking outside employment to supplement their income. Complicating matters even further was the suspension of the Davis-Bacon Act of 1931, an act which requires employers to pay prevailing wages on federally financed construction projects (Edsall 2005). This had a dual effect of depressing the wages paid to black workers returning to previously held jobs as well as on the newly imported Hispanic workforce.

Private businesses also fared badly in the weeks and months post-Katrina. The major issue of housing shortages and flooding restricted much of white-collar worker's ability to come

home and restart the economic engine of the city's downtown area. The infamous FEMA trailers sent to the area to temporarily house workers faced problems with passing electrical inspection, NIMBYism regarding the siting of large trailers from FEMA as well as air quality issues inside the trailers (Hsu 2007; Nossiter 2006a; Saulny 2006). Finally, complications with permission to rebuild from FEMA delayed many local business construction projects for months. Outside capital funded construction projects for businesses that could find it. And in the weeks and months following the hurricane season, delays in public assistance and state funds to the city coupled with issues of insurance and claims processing led many businesses to close for good.

Local Government Institutions:

The history of New Orleans and its prominent place as the largest city in the southern part of the state play a large role in the politicization of its citizens. When Louisiana seceded from the Union in 1861, the federal government took steps to allow parts of Louisiana (New Orleans and the surrounding area) to have representation in the U.S. Congress during the latter part of the war. Additionally, for the duration of the Civil War, both the Confederacy and the Union recognized their own distinct governors (Kean 1915).

The current electoral system in Louisiana dates back to Edwin Edward's efforts to limit the power of the Republican Party within the state. In 1976, the democratic governor instituted a change in the state's constitution that called for an all-inclusive primary, in which candidates for office would initially run against all other candidates for the same office, regardless of party affiliation (Warren 2008). If a candidate receives more than 50% of the vote, there is no run-off election and the candidate is the winner. If no candidate wins a 50% majority of the popular vote, the top two vote getters face off in a run off election. Additionally, candidates who lose in the

"jungle primary" are free to throw their support behind a candidate in the runoff election in hope of gaining a position in the coming administration.

Democratic politicians and African American candidates have faired well under these electoral rules (Bullock 2006). With the enfranchisement of blacks in the 1960's, the substantial increase in black voter representation resulted in the election of many black public officials. In 1968, there were 36 black public officials serving at the state level. From 1977 through 2002, three black public officials have served. Ernest Morial was elected as mayor of New Orleans and served until 1986. The election of Morial was followed by the election, Sidney Barthelemy, a creole and black public official, who served from 1986-1994. Marc Morial, son of Ernest Morial, served from 1994-2002 and was succeeded by Ray Nagin in 2003 (Bullock 2006).

Peter Burns and Matthew Thomas have written extensively on the presence (or lack thereof) of regime politics in New Orleans pre and post-Katrina. In non-regime cities, the presence of temporary networks of stakeholders, and brief, but fleeting coalescence around certain issues mark the day-to-day operations of government, whereas regime cities have the necessary components of a closely linked political and pro-business agenda, a governing coalition, political and business resources and a scheme of cooperation to ensure a well functioning city (Stone 1989). New Orleans typifies a non-regime city in that cooperation between black leaders and white businesses has been tenuous at best (Burns and Thomas 2006). This lack of cooperation coupled with severe and continuing declines in corporate sustainability, has mired New Orleans' ability to flourish economically in the wake of the disaster.

The organizational structure of the city government is the mayor-council form. Orleans Parish is coterminous with New Orleans, so in addition to having the mayor-council form of government, the city charter also provides for city-county consolidation. City-County/Parish

consolidation is one structural adaptation that may provide unified government in a metropolitan area. The advantages of city-county/parish consolidation, according to proponents, lie in simplifying the governmental structure in the county/parish, consolidating responsibility, eliminating duplication, mobilizing the resources of the area, promoting the orderly development of the county/parish, solving major area-wide problems, increasing popular control and achieving economies of scale (Louisiana 2009).

Although the current New Orleans charter dates from 1952, the city and parish began their merger in 1805-the nation's first consolidation. The New Orleans charter provides a strong mayor-council form of government with a seven-member council (five elected from districts and two at-large). The council selects its own presiding officer. The mayor serves a four-year term, as does the seven-member council. The city itself has approximately 6000 employees who work in the various city departments. There are seven municipal districts in the city. The city is also subdivided into seventeen wards and often residents of New Orleans refer to the area where they live by ward number. In the early 1900s, these wards had electoral representation in the General Assembly of Louisiana. Once the Louisiana constitution was changed to reflect a bicameral legislature, these positions were eliminated, however. These wards are further subdivided into precincts (police and polling) that manage public safety as well as serve as polling places for local elections (Kean 1915).

The Levee System:

The first foray into the extensive canal and levee system that dominates the New Orleans landscape began in 1807 (Mosher 1995). Technological advances of the late 1800s allowed the city of New Orleans to expand beyond the natural boundaries of the Mississippi River and began with the construction of a canal that linked the Mississippi to Lake Ponchartrain. The canal went

undeveloped and became what is now known as Canal Street. Canal street became a natural dividing line for new residents moving to the city and served as the dividing line between the French-Creole sector of the French Quarter and the "American" sector of uptown. These cultural and social artifacts are seen today with the Vieux Carre (French Quarter) and settlements to the east populated predominately by minorities, and the Central Business District, Uptown and University districts populated by whites on the opposite side of Canal Street.

The need for a levee system was evident even before the city's official founding. By 1812, the settlers of the Louisiana Territory had constructed levees from the east bank of the Mississippi River to Baton Rouge (over 130 miles) to as far west as Point Coupee (165 milles) (Miller 2008). Local leaders saw this taming of the swamplands to the north of New Orleans as a boon to economic development opportunities and as a way to curb the spread of yellow fever.

Once Louisiana became a part of the Union after the Civil War, it worked closely with the federal government to fund additional levee and canal projects. With the assistance of the US Army Corps of Engineers, the city of New Orleans has seen the construction of a massive flood protection system to protect it from river, hurricane and other precipitation-based flooding (Colten 2006). The Army Corp of Engineers has worked closely with the Orleans Levee Board to determine the flood protection needs for the parish. The levee board, created by the Louisiana legislature in 1890, had full control over all levee matters (repair, placement, and maintenance) and was given taxation powers to fund levee projects.

The Orleans Levee Board has had a checkered history connected to the enforcement of levee standards for the city. Levees constructed in the 1920s proved inadequate when a 1947 hurricane struck. In the 1960s, the Army Corp of Engineers played a larger role in constructing and repairing levees and were responsible for the construction of most of the levee system that

Hurricane Katrina tested in 2005 (Colten 2006). The levee board system, rife with political infighting and disorganization, came under intense scrutiny following the hurricane season of 2005. Many projects that were aimed at strengthening the system were discarded over time, resulting in uneven protection. The board's composition over the years consisted of patronage positions doled out by the governor and local governments, thus ignorance of planning for a cataclysmic event like a category 5 hurricane resulted in huge problems in 2005.

In effect, the city of New Orleans acts like a bowl when flooded and the levee and canal system, when working properly, acts as a siphon for floodwaters. When breeches in the system occur, it is quickly overwhelmed. Coupled with long periods of power loss in the wake of Hurricanes Katrina and Rita, the siphoning effect could not occur, leading to standing water in many parts of the city for weeks and even months in some cases (Grunwald 2005).

Problems with the levees and levee board management led to a resident-driven initiative to rid levee boards of political influence. A vote to amend the state's constitution to merge levee boards across the state was held in late 2006. The vote passed, with the majority of support coming from areas worst hit by Hurricane Katrina. The new system consolidates levee boards in the southern half of the state and creates a governing board staffed by experts from engineering and hydrology fields to manage flood protection (Donze 2006).

How the levee system came to dominate the socioeconomic distribution of the city is also important. Both political and economic forces have coalesced over the years to create a patchwork of faulty protection for residents living within city limits as well as in outlying areas. Housing development in the city followed the trajectory of many gulf or port cities. Higher ground along the river was settled first, while later development consisted of single and double shotgun homes built on low ground (formerly cypress swamps) to accommodate the influx of

immigrants in the late 19th and early 20th centuries (Reichard, 2006). The juxtaposition of opulence (in the cities' Garden District, Esplanade, Metairie and Gentilly areas, for example) and poverty of the Seventh, Eighth and Ninth wards highlighted the socioeconomic inequalities present in New Orleans before the storm. Post World War II much of the remaining low land was developed into middle-class, suburban housing with little attention given to the need for correctly reinforced foundations or levees. The result of the levee breaks for many areas was cataclysmic, worsened by their inability to slough off water for weeks after the storm. Both middle-class suburban neighborhoods and inner-city public housing built on low land were affected (Reichard, 2006).

New Orleans, Pre-Katrina:

We now turn to the socio-economic profile of New Orleans pre-Katrina along with the backdrop of the state of the city and surrounding area before the storm made ground. The New Orleans' poverty rate in 2000 was 28% compared to 12% for the entire nation (Census 2008). The number of high-poverty census tracts (more than 40% of residents in poverty) grew from 30 in 1980 to 49 in 2000. Additionally, the population *within* these tracts grew 12% from 96,417 to 108,419 in that same time span. The black poverty rate was more than three times the white poverty rate (35% vs. 11%), and 43% of blacks lived in poor neighborhoods (Census 2006; Institute 2005).

According to a measure of racial segregation—the Dissimilarity Index—New Orleans ranks very high among large cities with minority populations (Center 2000). Blacks and whites lived in different worlds, marked by geographical separation as well as by other measures of socioeconomic status. Educationally, New Orleans had a pattern of underachievement that put minority and poor students behind their white counterparts. In 2005, before Hurricane Katrina

struck, only 26% of third graders in New Orleans scored above national averages on standardized tests collected by the No Child Left Behind Act (Statistics 2005). New Orleans students in the 10th grade also fared badly. Only 40% of public school students scored at basic levels for language arts and 39% for basic math skills in 2005.

There is also geographic dissimilarity in the public schools. In 2005, before the hurricane season, an overwhelming 93.4% of students attending public schools were black; white students typically attended private or parochial schools within the city. The city's failure in running efficient and effective schools prior to and immediately following the storm season has been documented at length (Casserly 2006; Jervis 2009; Johnson 2007; Maloney 2009; Nossiter 2006b; Toppo 2007). Additionally, New Orleans suffered (and still does) from a brain drain at its institutions of higher learning (Alfano 2005). This effect complicated by rebuilding efforts creates a lack of human infrastructure available for jobs created post-storm. Although race, and poverty are highlighted here, research has shown that the education system, women, the elderly and the infirm also suffered from similar disparities before the storm (Grey 2006; Louisiana Recovery Authority 2007).

Data and Data Sources:

Like the previous chapter, counties (parishes) remain the unit of analysis. The same dependent and independent variables are also used here. One additional variable is added to delineate membership in the U.S. Census Metropolitan Statistical Area (MSA) as of the year 2000. The parishes included in this group are: Jefferson, Orleans, Plaquemines, St. Barnard, St. Tammany, and St. John the Baptist so that comparisons between the city and the state can be made. The population of these seven parishes account for over 1.3 million residents. The major cities other than New Orleans located within the MSA include: Kenner and Metairie. The latter is

an unincorporated community located east of New Orleans and south of Lake Ponchartrain. The 17th street canal marks the border between New Orleans and Metairie. Kenner is located west of New Orleans. In the analyses that follow, the models will report effects of race and class on housing and job creation as it pertains to the MSA, as well as making comparisons between the MSA and the overall state.

Demographics of Panel:

The seven-parish area that comprises the New Orleans MSA is a study in contrasts. Comparing the MSA to the state, we see that, in most categories, the greater New Orleans area has more minorities, suffered more damage during and after the storm and received more individual assistance and public assistance dollars than the rest of the state. Interestingly, the concentration of residents living under the poverty line is much higher outside the greater New Orleans area, however the results reported in the previous chapter show that race had a more significant effect on recovery than class. Even using median income as a proxy for poverty, only in the area of job creation did poverty have a significant effect on recovery.

Table 5.1: Summary Statistics of the New Orleans MSA Compared to the Entire State of Louisiana

NO Metro Area	Minority Ratio (in %)	Class Ratio (in %)	% Severe Housing Damage	% of FEMA IA Funds (out of 100%)[1]	% of FEMA PA Funds (out of 100%)	% of LA Road Home Funds (out of 100%)
State	30.53	19.87	30.14	27.08 ($1,372,700,415)	7.17 ($220,118,402)	13.41 ($971,263,095)
New Orleans	32.88	16.21	64.53	72.92 ($3,695,911,930)	92.83 ($2,850,510,389)	86.58 ($6,271,185,414)

In table 5.1 we see some distinct differences between the main variables of interest in the study. Inside the New Orleans metropolitan statistical area there are slightly high proportions of

[1] Table 1 and 2 report the total dollar amount of (HA, ONA, PA and Road Home Funds) funds approved as of June 2007 by FEMA and the Louisiana Office of Homeland Security & Emergency Preparedness based on registrations received from affected households in the state.

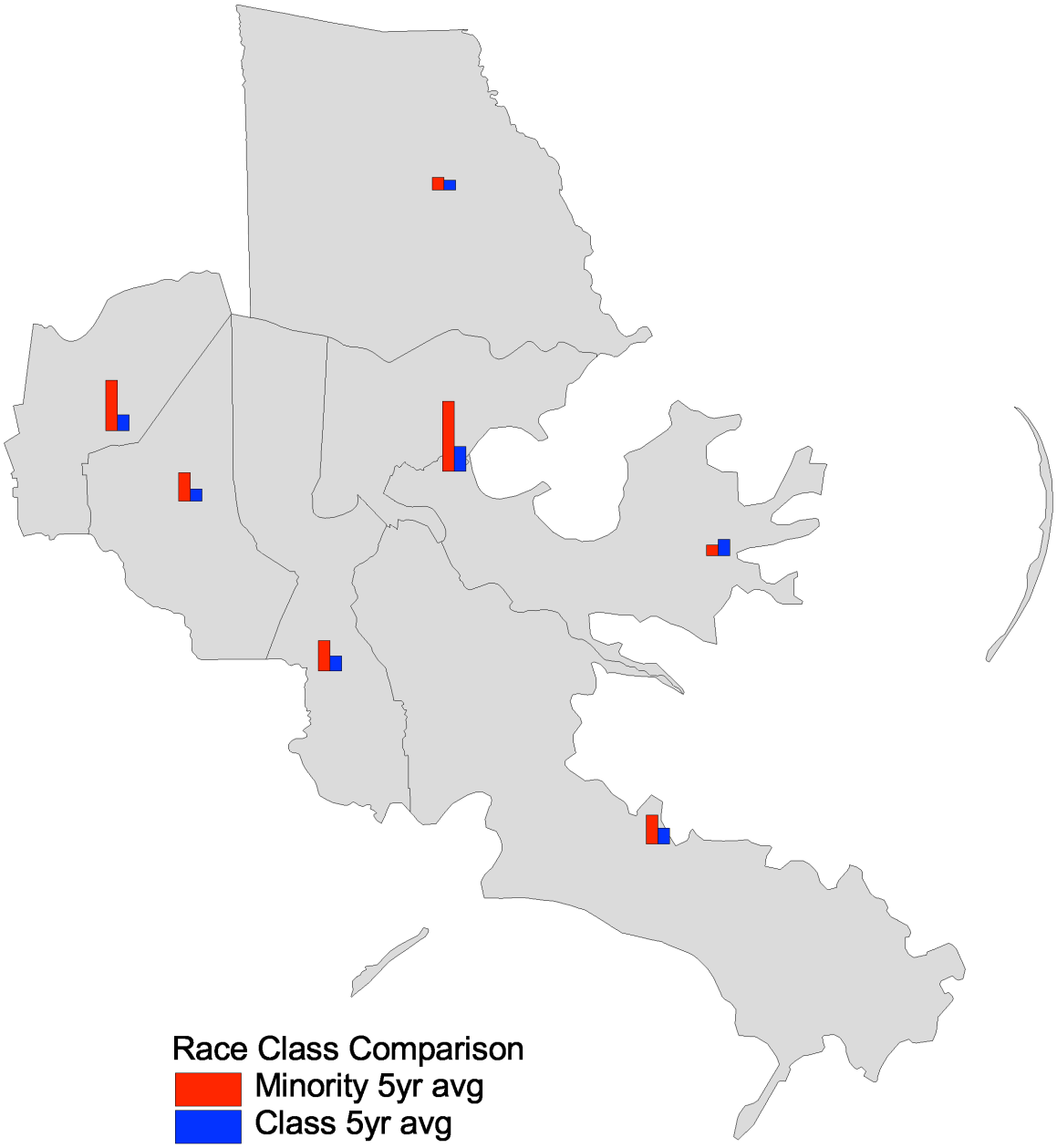
minorities, while slightly lower proportions of poor residents. Housing damage was the greatest here as New Orleans itself was ground zero when Katrina made landfall in 2005. The New Orleans MSA also received the most outside investment from federal and state level programs. Within the New Orleans MSA, the differences are much starker; the range of minority concentration varies from a mean of 11% in St. Bernard parish to 68% in Orleans parish, home of New Orleans. We see similar trends in the ratio of residents living under the poverty line as well as great disparities in funding distributed to the parishes in the Greater New Orleans area. The number in parenthesis shows the total amount of funds for each funding stream given to the parishes included in the MSA.

Table 5.2: Summary Statistics of the Greater New Orleans MSA

Parish	Minority Ratio (in %)	Class Ratio (in %)	% Severe Housing Damage	% of FEMA IA Funds (out of 100%)	% of FEMA PA Funds (out of 100%)	% of LA Road Home Funds (out of 100%)
Jefferson	30.29	15.40	53.3	.00 ($190,911)	.08 ($247,863,822)	.16 ($1,139,135,312)
Orleans	68.12	24.70	71.5	.54 ($2,760,094,329)	.42 ($1,277,476,688)	.47 ($3,424,578,164)
Plaquemines	28.80	16.32	80.0	.02 ($123,048,704)	.08 ($247,155,926)	.02 ($142,565,171)
St. Bernard	11.76	16.86	80.6	.07 ($354,178,698)	.24 ($725,582,902)	.12 ($874,491,283)
St. Charles	28.50	12.78	49.5	.007 ($33,421,855)	.007 ($23,648,631)	.005 ($35,470,328)
St. John the Baptist	49.26	16.64	46.3	.005 ($24,275,534)	.001 ($3,354,449)	.004 ($28,608,255)
St. Tammany	13.40	10.76	70.5	.08 ($400,701,896)	.11 ($325,427,971)	.09 ($626,336,899)

Figure 5.1 shows the variance in racial and class disparities across the New Orleans metropolitan area. The bars represent the five-year average of the population living under the poverty line (in blue). The red bar represents the five-year average minority population living in the MSA. Higher bars signify a larger concentration of poverty or minorities.

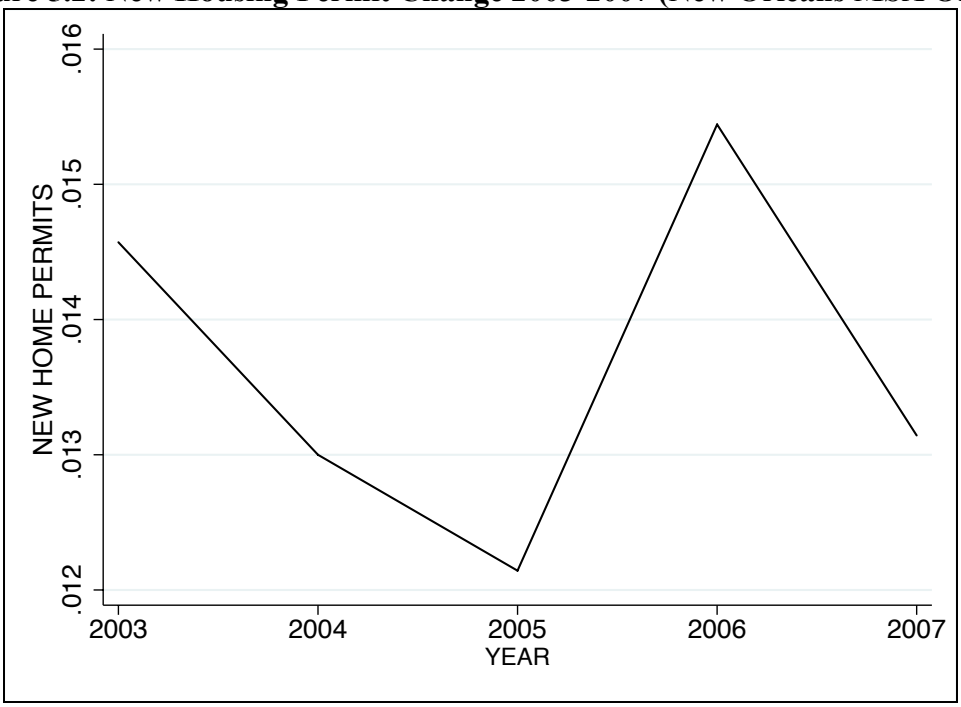
Figure 5.1: Race and Class Distributions (New Orleans Metropolitan Area)



Turning to the main dependent variables under examination (New Hires and New Home Permits Issued), we see that there is some variation between years for new home permitting within the greater New Orleans area. Graph 6.1 below shows the movement in home permits throughout the time period. In 2003, the seven-parish area averaged 1.4% of new homes permitted. In 2004, the number of homes permitted dropped to 1.3%. In 2005, the permitting

dropped further to 1.2% only to rise after the storms to 1.5% in 2006. The permitting dropped back to 2004 levels in 2007 with an average ratio of permitting within the seven-parish area of 1.3%. These data are collected on a quarterly basis but are reported here in yearly increments due to the fact that not all parishes included in the dataset issue monthly housing permit reports. However, in parishes which report monthly there was a noted increase in permitting in the 3rd and 4th quarters of 2006 followed by a drastic drop in permitting in all quarters of 2007.

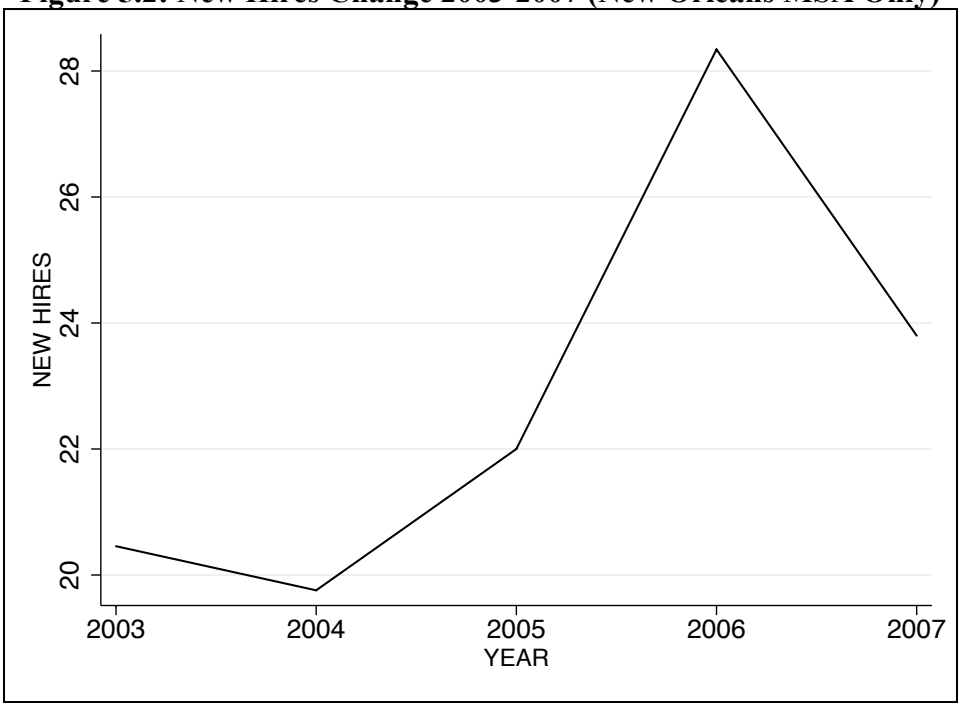
Figure 5.2: New Housing Permit Change 2003-2007 (New Orleans MSA Only)



In the area of jobs, we see similar patterns of disparate recovery (Graph 6.2). In 2003, the average rate of new jobs created in the seven-parish area was 20.5%. In 2004, this number dipped slightly to 19.75%. During the year of the storm, 2005, the average rate of new job starts in the MSA was 22%. In 2006, the creation of new jobs rose significantly to 28% in the metro area, returning to 23.8% in 2007. Comparing these results to the overall state, the rate of new

hiring mimicked job creation except for the year directly following Katrina and Rita (2006), where job creation in the New Orleans MSA outpaced that of the rest of the state by about 5%.

Figure 5.2: New Hires Change 2003-2007 (New Orleans MSA Only)



A correlation between the two dependent variables within the Greater New Orleans Metro Area shows a strongly significant relationship with a correlation coefficient of .76. The correlation of the same variables for the counties *outside* the Greater New Orleans area was .39 and significant. Thus, in both areas the production of new homes and new jobs are moving together throughout the panel. Correlations between the main independent variables of note: percentage of funds dedicated post-disaster and percent of housing damage also showed interesting relationships.

Table 5.3: Correlations of Concentration of Minority Residents and Residents Living Under the Poverty Line (2003-2007)

Outside Greater New Orleans Metro Area (N=30)	.39*
New Orleans Metro Area (N=7)	.76*

Note: * significant at .05 level.

Correlations between the main independent variables: percentage of Individual Assistance, Public Assistance, Road Home Dollars and Percent of Housing Damage tell a different story. In the parishes located outside the Greater New Orleans Area, Individual Assistance and Public Assistance funding was the only significant relationship. Within the New Orleans MSA, the following correlations were significant: the relationship between Indvidual Assistance and Public Assistance funding, Individual Assistance and Road Home funding and between Public Assistance and Road Home funding. Thus, outside New Orleans, the federal funding streams were correlated and high instances of public assistance was correlated to increased individual assistance dollars being sent to those areas. Inside New Orleans, all streams of funding were highly correlated with each other. A note of caution interpreting table 5.4; New Orleans has the highest percentage of residents living within a geographic area within this data set. So the significant correlation results likely reflect the sheer numbers of applications received from the New Orleans MSA as compared to the less densely populated areas of the other parishes. For a chart listing the population and damage tables of all affected parishes, see Chapter 4. In addition, table 5.4 illustrates that damage and funding, which was expected to be highly correlated, have little relationship to each other.

Table 5.4: Correlations of Individual and Public Assistance Dollars, Road Home Dollars and Percentage of Damage (2003-2007).

NO Metro Area= No (30)	*% Housing Damage*	*% IA FEMA Funds*	*% PA FEMA Funds*	*% Road Home*
% Housing Damage	1.00			
% IA FEMA Funds	.1692	1.00		
% PA FEMA Funds	.2781	.6858*	1.00	
% Road Home	.2373	-.0217	-.0546	1.00
NO Metro Area= Yes (7)				
% Housing Damage	1.00			
% IA FEMA Funds	.1816	1.00		
% PA FEMA Funds	.5871	.8425*	1.00	
% Road Home	.2482	.9749*	.9012*	1.00

Note: significance reported is at the .05 level.

Panel Results:

Moving to the results of the panel, like the previous chapter, the dependent variable is the ratio of yearly new hires in each parish within the GNOA and the number of new homes permits submitted in the same area during the years 2003-2007. Also in the models are the following variables: ratio of minorities to white overall population within the parishes of the dataset, and ratio of residents living under the poverty line to residents living above. Additional control variables include a variable named Katrina, which marks the number of years from when the storms made landfall. For the first set of models, a dummy variable for each year is included to determine the dynamics of the variables for each year of pre and post Katrina activity. The year 2003 is removed as a reference category. Again, like in the previous chapter the formulas below are the mathematical representation of the theory:

$$1)\ Y_{it} = \beta X_{it} + ... + \beta_k X_{kit} + \alpha + \upsilon_{it} + \varepsilon_{it}$$

-or-

2) New Hires= Minority Proportion + Class Proportion + 2004 + 2005 (Year of Katrina and Rita) + 2006 + 2007

-and-

3) New Hires= Minority Proportion + Class Proportion + Minority Proportion*Class Proportion + 2004 + 2005 (Year of Katrina and Rita) + 2006 + 2007

Where Y is the number of new jobs created in each parish for each year of the dataset,

$\beta X_{it...}\beta X_{kit}$ are the coefficients for the indepedent variables for each parish

(*i)* for each year (*t)* in the dataset,

where α is the random intercept for each parish (*i*) at each year (*t*) in the dataset,

where υ is the between parish (*i*) error term for each year (*t*) in the dataset,

and where ε is the within parish (*i*) error term for each year (*t*) in the dataset.

Table 5.5:
Effect of Poverty and Race on New Hires in the Greater New Orleans Area

Variables	New Hires Model
Minority Proportion	-.002 (.001)
Class Proportion	.009** (.004)
Year 2004	-.006 (.017)
Year 2005	.058*** (.017)
Year 2006	.146*** (.017)
Year 2007	.063*** (.016)
Constant	.189*** (.064)
No. of observations	35
No. of group	7
R^2 (overall)[2]	.5351
Rho= .80027321	
Prob> chi^2= (Hausman test)	.9998
Prob> chi^2= (Breusch-Pagan Lagrange Multiplier test (BPLM))	.0000

Notes: Numbers in parenthesis are robust standard errors. Variables dropped: Year 2003 dummy.
*significant at 10%, ** significant at 5%, ***significant at 1%

In the new hires model we see that the ratio of minority residents within the GNOA does not have a significant and negative impact on the amount of new jobs recovered. Class, on the other hand, does have a positive and significant effect on the dependent variable. The effect of

[2] Overall: The average R-squared from the between and within mean-deviated regression is equivalent to the ordinary r-squared from running OLS on the transformed data.

time post-disaster was significant in the years 2005, 2006 and 2007 signifying a large impact of recovery efforts post-Katrina. The r-square for the new hire model is .5351, a good fit to the data. In the city of New Orleans, hypothesis one, which predicted that minority proportion would have a negative impact on job creation, failed to be confirmed. Hypothesis two, which is concerned with poverty and its effect on job production after hurricane Katrina, also failed to be confirmed. The Hausman specification tests the null hypothesis that the unique error terms (u_i) are correlated with the regressors (as they are in the fixed effect model). In this case the value .7136 is greater than .05, thus using a random effects model is appropriate. Finally, the Breusch-Pagan Lagrange multiplier tests the assumption that variances across all entities (i.e., parishes) in the panel are zero, meaning there are no significant differences across units. This would mean that the estimated variances of the residuals from the panel regression are dependent on the values of the independent variables, confirming the presence of heteroskedasticity in the data. To reject the null hypothesis that the random effects model is appropriate, the result of this test must be less than .05. Since the threshold is .0000, we reject the null hypothesis that random effects are not appropriate and conclude that there are significant differences across the parishes in the data, thus no heteroskedasticity is present.

A second model was run with a multiplicative term added to assess the interaction between race and class. The other independent variables remained the same. Here, only the individual effect of the passage of time (the yearly dummies) had significant effects on the dependent variable. Hypothesis three, which theorized that race *and* class would have an increased negative effect on job production, is not confirmed. Although the overall fit of the model has an r-squared value of .5417, a slightly better fit than the model without the

multiplicative term, it would seem that a random effect captured by the yearly dummy variables is subsuming the effect of race and/or class on hiring.

Table 5.6:
Effect of Poverty and Race on New Hires in the Greater New Orleans Area

Variables	New Hires Model
Minority Proportion	-.002 (.0039)
Class Proportion	.009 (.007)
Race x Class Proportion	.00001 (.0002)
Year 2004	-.0067 (.017)
Year 2005	.058*** (.018)
Year 2006	.147*** (.019)
Year 2007	.063** (.019)
Constant	.201 (.129)
No. of observations	35
No. of group	7
R^2 (overall)[3]	.5417
Rho= .80894225	
Prob> chi^2= (Hausman test)	.9998
Prob> chi^2= (Breusch-Pagan Lagrange Multiplier test (BPLM))	.0000

[3] Overall: The average R-squared from the between and within mean-deviated regression is equivalent to the ordinary r-squared from running OLS on the transformed data.

Notes: Numbers in parenthesis are robust standard errors. Variables dropped: Year 2003 dummy. ** significant at 5%, ***significant at 1%

Next, models testing the effects of minority and poverty concentration on new home permitting were analyzed. Table 5.7 shows the effect of the main independent variables without the multiplicative term (Hypotheses 1 and 2) and Table 5.8 shows the effect of the multiplicative term of race and class on new home permitting (Hypothesis 3).

Table 5.7:
Effect of Poverty and Race on New Homes in the Greater New Orleans Area

Variables	New Homes Model
Minority Proportion	-.0001* (.0001)
Class Proportion	-.0003 (.0008)
Year 2004	-.0011 (.0029)
Year 2005	-.0019 (.0022)
Year 2006	.0011 (.004)
Year 2007	-.001 (.006)
Constant	.027* (.014)
No. of observations	35
No. of group	7
R^2 (overall)[4]	.2564
Rho= .31065945	
Prob> chi^2= (Hausman test)	.3782

[4] Overall: The average R-squared from the between and within mean-deviated regression is equivalent to the ordinary r-squared from running OLS on the transformed data.

Prob> chi^2 = (Breusch-Pagan Lagrange Multiplier test) .1617

Notes: Numbers in parenthesis are robust standard errors. Variables dropped: Year 2003 dummy. *significant at 10%, ** significant at 5%, ***significant at 1%

In terms of the main independent variables' predictive ability on new home permitting activity through the panel, the model fits very poorly. Hypotheses two and three failed to be confirmed by the data and the Breusch-Pagan Lagrange Multiplier test. Thus, there is heteroskedasticity present although robust standard errors where estimated in table 5.7. Minority proportion does have a small, negative, and significant effect on home permitting, however, confirming hypothesis one. Table 5.8 below shows that the multiplicative term fails to reach significance, thus hypothesis three is unconfirmed.

Table 5.8:
Effect of Poverty and Race on New Homes in the Greater New Orleans Area

Variables	New Homes Model
Minority Proportion	-.0002 (.0006)
Class Proportion	-.0008 (.0018)
Race x Class Proportion	5.47e-06 (.0003)
Year 2004	-.0009 (.003)
Year 2005	-.0016 (.0023)
Year 2006	.0015 (.003)
Year 2007	-.0009 (.006)
Constant	.032 (.032)
No. of observations	35
No. of group	7
R^2 (overall)[5]	.2923
Rho= .23293442	
Prob> chi^2= (Hausman test)	.0345
Prob> chi^2= (Breusch-Pagan Lagrange Multiplier test (BPLM))	.7081

Notes: Numbers in parenthesis are robust standard errors. Variables dropped: Year 2003 dummy.
** significant at 5%, ***significant at 1%

[5] Overall: The average R-squared from the between and within mean-deviated regression is equivalent to the ordinary r-squared from running OLS on the transformed data.

Finally, a t-test was conducted on those parishes outside the Greater New Orleans Metro Area and those within to test for significant differences between the means of the main dependent variables for each group. Table 5.9 shows the results of the t-test. The two samples are of very different sizes (i.e., there are 30 parishes outside New Orleans and only 7 in the metro area), thus the variance in the two groups is extremely different and the t-tests below report the unequal variance results.

Table 5.9: Two-sample t test with unequal variances (New Hires)

Group[6]	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0	150	.2964	. 0067172	.0822688	.2831267	.3096733
1	35	0.3388571	.0143765	.0850526	.3096405	.3680737
Combined	185	. 3044324	. 006193	.0842346	.2922139	.316651
Diff		.0424571	. 0158684		.0105833	.0743309

diff = mean(0) - mean(1) t = **-2.6756**

Ho: diff = 0 Satterthwaite's degrees of freedom = **49.9225**

Ha: diff < 0 Ha: diff = 0 Ha: diff > 0

Pr(T < t) = 0.**9950** Pr(|T| > |t|) = 0.**0101** Pr(T > t) = 0.**0050**

Assuming unequal variances changes the t-statistic to -2.5017 and the corresponding p-value is .0101, which falls below .05, thus we can reject the null hypothesis that the two areas have equal average new hiring throughout the panel. This confirms that there is a difference between how recovery proceeded in the Greater New Orleans Area and the rest of the state in terms of new job creation.

In table 5.10 below, running a two-sample t-test assuming unequal variances resulted in a t-statistic of 1.2099 and a corresponding p-value of .2321, thus in the case of new home permitting activity the null hypothesis is not rejected and cannot conclude that the difference of means in new home permitting between rural and urban parishes is different from 0, allowing for

[6] Group 0 are the parishes located outside the New Orleans MSA. Group 1 is the 7-parish MSA.

differences in variances across groups. Therefore, parishes outside the metropolitan area faired just as poorly as the city itself in terms of new home permitting activity.

Table 5.10: Two-sample t-test with unequal variances (New Home Permits)

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
0	150	.0111907	.00084	.010288	.0095308	.0128505
1	35	.01366	.0018601	.0110042	.0098799	.01784401
Combined	185	.0116578	.0007677	.0104416	.0101433	.0131724
Diff		.0024693	.0019569		-.0016325	.0065711

diff = mean(0) - mean(1) t = 1.2099

Ho: diff = 0 Satterthwaite's degrees of freedom = 48.8194

Ha: diff < 0 Pr(T < t) = 0.8839

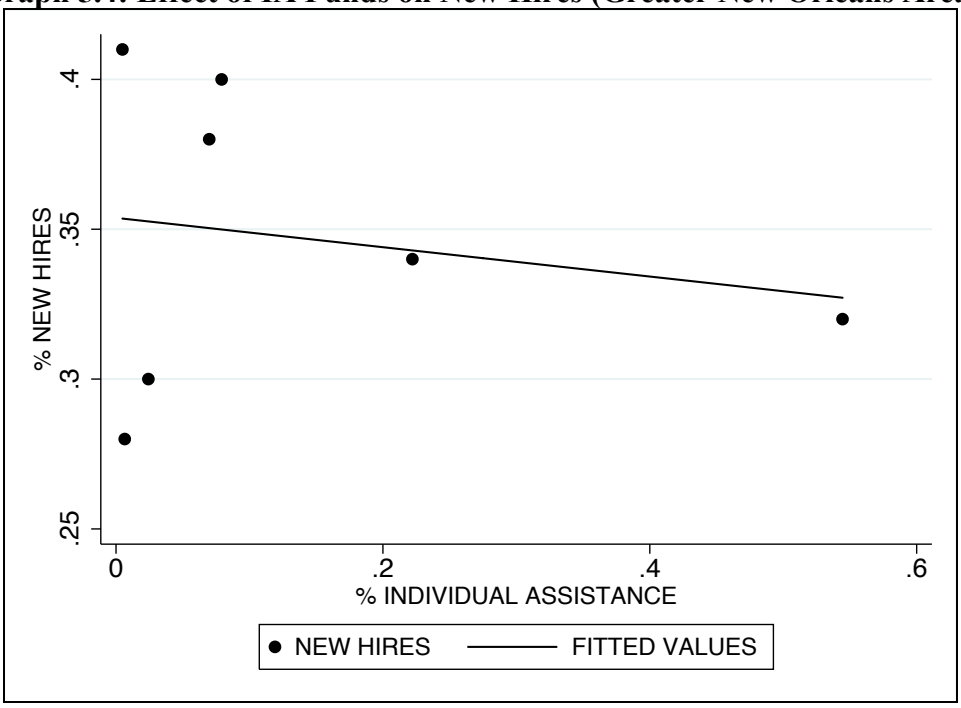
Ha: diff = 0 Pr(|T| > |t|) = 0.2321

Ha: diff > 0 Pr(T > t) = 0.1161

Finally, as in the previous chapter, the following graphs show the relationships between funding and new hires for the years 2003-2007. Graph 5.3 shows the effect of funding on new hiring activity. The linear prediction plots between funding and new hiring in the Greater New Orleans area during the time period under examination is nearly flat, signifying no relationship between funding and new hiring. The relationship between the other funding streams (i.e., public assistance and Road Home program dollars) were similar to the relationship between Individual Assistance and New Hires and for sake of space are not presented. This is a surprising finding particularly in light of the massive amount of funding dedicated to individuals, businesses and local government entities following the storm. In the case of funding and new hires, we see that funding has a slight negative effect on the recovery of jobs. Thus, it would seem that although New Orleans and the surrounding areas did see resurgence in jobs post-disaster, this effect had little long lasting benefit to the economic health of the area. Furthermore, these results suggest that funding probably acted as a proxy for the severity of damage within the New Orleans (remember population is highly concentrated in this area of the state) and had little do with the

creation of long-lasting jobs (in the public or private sectors) that will significantly affect the overall economic health of the area in years to come.

Graph 5.4: Effect of IA Funds on New Hires (Greater New Orleans Area)



The regression analyses reveal a more disturbing effect of funding on job and housing creation post-Katrina. Table 11 shows the effect of funding on job creation in the parishes located outside the greater New Orleans metropolitan area and Table 12 shows the effect of funding within the city. Outside the city of New Orleans, public assistance dollars went a long way in helping restore economic normalcy; for every thirteen dollars given in public assistance, job creation increased by one unit. In terms of individual assistance, we observe that in the 30 parishes outside New Orleans, this funding stream had a negative, insignificant effect on job creation. The proportion of minorities and poor had a negative and significant effect on job creation, but it would seem that in places located outside New Orleans, public funding went a long way toward stabilizing the economy.

Table 5.11:
Effect of External Funding, Poverty and Minority Population on Recovery Outside New Orleans

	New Hires
Minority Proportion	-.003**
	(.001)
Class Proportion	-.006**
	(.003)
% Public Assistance $	13.11***
	(3.233)
% Individual Assistance $	-1.54
	(.837)
% Road Home $	.416
	(.431)
Constant	.518***
	(.051)
Number of obs = 30	
F(5, 29) = 9.28	
Prob > F = 0.0000	
R-squared = 0.5548	

Note: OLS Regression. Numbers in parenthesis are robust standard errors.

In New Orleans, the picture is very different. In table 12 below we see that for every three and a half dollars of public assistance, there was a positive and significant effect on job creation, a much smaller effect than what was experienced outside the greater New Orleans area. Additionally, we see that the Road Home program dollars have a significant, negative effect on job creation post-Katrina. Again, the proportion of minority residents act a drag on economic recovery to a degree that is much stronger than the parishes located outside the metropolitan area. Thus, in this model, hypothesis one and two concerning race is confirmed, but hypothesis

two concerning class is not. Hypothesis four which stated that external funding would have a mitigating affect on racialized response is not confirmed. Despite impressive outside investment, the proportion of minorities and poor in the area still has a negative affect on job creation. Finally, table 5.12 shows the effect of external funding on home permitting in the greater New Orleans area. In Table 5.12, public assistance has a positive and significant effect on new homes, albeit a much smaller effect than on job creation. The higher proportion of minorities in the area has a negative and significant affect on economic activity post-Katrina, confirming hypothesis one. The model itself is a good fit to the data with an r-square value of .927.

Table 5.12.
Effect of External Funding, Poverty and Minority Population on Recovery in New Orleans

	New Homes
Minority Proportion	-.012**
	(.004)
Class Proportion	.103**
	(.035)
% Public Assistance $	3.596**
	(1.23)
% Individual Assistance $	-.151
	(.291)
% Road Home $	-5.34**
	(1.656)
Constant	-.823
	(.401)
Number of obs = 7	
F(5, 29) = 10.57	
Prob > F = 0.0062	
R-squared = 0.9275	

Note: OLS Regression. Numbers in parenthesis are robust standard errors.

Conclusion:

The Greater New Orleans area has seen its fair share of triumphs and failures in the area of economic recovery in the wake of storms throughout history. It would seem however that Katrina, one of the largest and most deadly storms to hit the Gulf Coast in recent years, presents a large impediment to recovery inside and outside the city. New Orleans' focus on the tourism industry has produced jobs, but those jobs are not high paying and do not attract the types of white-collar workers or the innovation needed to jump-start the economy. Construction, another industry to see a boom after the disaster, has also failed to provide long lasting economic recovery in the area. In the area of housing, the high number of renters within the city has limited the type of residents that can return to the city center as well as the amount of new development that can occur within the area.

Race, not class seems to be the overriding factor in depressing recovery in the New Orleans MSA. Unlike the rest of the state, New Orleans is unique in its socioeconomic makeup and it seems that the high concentrations of funding and attention post-disaster have been unable to overcome the problems race can cause in redevelopment. As stated previously, direct tests of the tipping point, and conflict theories of race are difficult to perform due to the lack of micro-level data for the seven parishes that make up the MSA. It may be that in the future, data will allow for a more in-depth look at the racial and economic dynamics that played out after the storm. Additionally, it is important to realize that funding and recovery in the Greater New Orleans area have a very tenuous relationship. This could be due to the high numbers of renters affected (who have been largely neglected in the funding process), or it could be due to the poor planning that marked recovery efforts after residents returned to the city.

Comparing the results from the analysis of recovery in New Orleans to the rest of the state we see some interesting trends. First, class has more of an effect in the greater New Orleans area than outside the area. This is probably due to the differences in the size of that population within the metro area as compared to the rest of the state. Additionally, time from the disaster seems to increase recovery of jobs outside the GNOA, but not within the metro area. It could be that the dysfunction of local government officials in deciding how to proceed in recovery in the city of New Orleans and the surrounding area has impeded the process of recovery more so than outside the metro area. Finally, it would seem that the massive amount of money that was sent to the state of Louisiana and New Orleans has had little to no effect on the creation of new jobs or housing units. These dollars may help in other ways, but the impact of funding is not captured by the data presented here.

Next, as we move forward to analyzing the state of Mississippi, it is expected that race and class will play a significant part in recovery of the more urban areas of the state. It is important to note that the geographic area of the disaster path was much larger in Mississippi (55 counties compared to 37 parishes), however the socioeconomic mix is comparable. Additionally, the affect of funding may or may not play a significant role as the state of Mississippi received much less than Louisiana. It could be, however, that Mississippi with less funding was able to do more due to the fact that its organizational structures were sounder. Also, the state level program dedicated to providing funds, the Homeowners Assistance Program was much smaller in reach (only residents from Hancock, Harrison, Jackson and Pearl River were eligible). These factors may play a role in affecting how much or how little race and class affect recovery in Mississippi. It is still expected that both race and class will act as a negative pull on economic recovery in the state of Mississippi, however.

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Chapter Six: Mississippi

Introduction:

The state of Mississippi, like Louisiana, has a colorful political, social and economic history. The Spanish first explored the area which became the state of Mississippi, in the 1500s. The region was later claimed by the French and in 1699 a French group established the first permanent settlement near present-day Ocean Springs (Busbee 2005).

In the 1700s, the British took over the area after the French and Indian Wars. It was ceded to the United States in 1783 after the American Revolution; however, the Spanish did not surrender their claims over the area until the early 1800s. When the United State annexed West Florida from Spain in 1810, the land of South Mississippi was included in the transaction.

Before the Spanish, French, and British began their exploration, Native American groups mostly inhabited the area. The Chickasaw lived in the north and east parts of the state, the Choctaw in the central regions and the Natchez in the southwest. The French and Indian Wars were predicated on the Natchez tribe rising up against the French in the early 1700s (O'Brien 2003). The Chickasaws and British allied with the Natchez to defeat the French in the northeastern part of the state. At the conclusion of the war, the Treaty of Paris gave England all of the land east of the Mississippi River. At this time, France effectively ceded all land claims in the area in the lower Mississippi Valley (save New Orleans), and the British proceeded to split the territory which spanned most of Florida to Louisiana into two parts: West Florida and the Natchez district. Spain continued to be a presence in the Natchez district and when the U.S. War of Independence (also known as the American Revolutionary War) was underway; Spain regained possession of Florida and occupied Natchez. The occupation dispute between Spain and England was settled in 1798 at the conclusion of the war, but as stated above, the entirety of the

territory which would later become Mississippi was not ceded to the United States from Spain until 1810 (Williams 2002). In 1817, the original Mississippi Territory was divided into the states of Mississippi and Alabama. In December of that year, Mississippi became the 20th state to join the union. At the time, the state's population was around 60,000 people.

Social Institutions and History:

The 1820 and 30s were uneventful, but marked with political transformation as the number of Jeffersonian Republicans declined in American Politics and were replaced by Jacksonian Democrats. Additionally, the Native American presence in the region remained contentious, resulting in the removal of many tribes to Oklahoma (O'Brien 2003). This coupled with slave uprisings in the South and the "slavery question" in general as part of the political maneuverings to create a union after the American Revolution, threatened to undo the peace founded after the War of Independence. These racial, ethnic and political factors created many cross-pressures across the south and all worked to set the stage for the Civil War.

Slavery grew rapidly in the South during the 1800s; Mississippi was no exception. In 1860, the slave population was nearing half a million, while there were only 350,000 whites in the state. Most whites were not slave owners, however, and those who were plantation owners typically had slaves numbering in the teens, not hundreds (Williams 2002). The state's economy at the time was based primarily on the production of cotton and depended heavily on the slave trade to provide necessary labor. Slavery in the state was not only an economic institution, but also a social one. Many whites believed that blacks were inferior and should not be afforded basic rights. In fact, a Declaration from the State's January 1861 convention on whether to secede from the Union went so far as to state that the position was…"thoroughly identified with the institutions of slavery—the greatest material interest in the world (2002)."

Although the position of the state supported and vehemently defended the institution of slavery, Mississippi also afforded freedom to blacks in numerous ways. Prior to the 1820s, slaves could purchase their freedom from slave owners, or could be freed by slave owners. By mid-century, this practice was mainly outlawed. After the 1830s, legal avenues to freedom were restricted to children born of free mothers, or to children born of parents who petitioned the state legislature for emancipation. This law, passed in 1822, gave the state legislature the power to approve or decline petitions for freedom and gave policymakers a direct hand in controlling the free black population within the state (Davis 2000). Mississippi laws required free blacks to appear in court to give evidence of their freedom and were also required to carry papers proving their free status. These registration papers had to be renewed every three years and cost the equivalent of $25 in today's dollars.

Free blacks faced many economic and social hurdles pre and post Civil War. The registration papers issued to them were only good in the county that issued them, so traveling to another part of the state put free blacks at risk for capture and violence. Further, the types of economic activity open to these persons were also limited. Free blacks were not able to sell grocery items or liquor, own printing establishments or houses of entertainment, and could only sell wares in incorporated towns (Davis 2000). Following the Nat Turner riots of 1831, and various other slave uprisings, Mississippi attempted to pass a law removing "all free Negros to Liberia at the expense of the county from which there are removed (Mississippi 1798-1848)." Despite these limits on freedom of movement and commerce, there were areas within the state that had large numbers of free blacks, mostly in the Natchez District (present day Adams and Warren counties), though some groups settled in Jackson and Hinds counties.

During the Civil War, the free black population dwindled. After the Civil War, much of the state lay in ruins both economically and figuratively. Proportionately, Mississippi lost the most troops to the war. Mississippi also grappled with the political, economic and social consequences of emancipation. The strained relations between free blacks, former slaves, and former slave owners were difficult. Like Louisiana, Mississippi passed a new constitution in the wake of the war (1869) granting voting rights to blacks. In 1870, Mississippi was allowed to return to the Union, however, the equality of blacks in the political and social realm was short lived. In 1890, a new state constitution took away the rights of blacks to vote, segregation began anew and groups like the Ku Klux Klan organized to terrorize black people (Busbee 2005).

Prior to the Civil Rights Movement of the 1960s, much of the political and social progress of blacks was stalled in the state of Mississippi. In 1955, Reverend George Lee, vice president of the Regional Council of Negro Leadership and member of the NAACP, was shot in the face for urging black residents of the delta to vote. Authorities failed to charge anyone with the incident despite many eyewitness accounts of the white men who perpetrated the crime. This incident is one of many that occurred during the 50s and early 60s as citizens, white and black, urged black citizens to vote. A right afforded them by the federal constitution (Austin 2002).

The most notable incident of this era were the murders of James Chaney, Andrew Goodman and Michael Schwerner, civil rights activists who were investigating a number of black church bombings in the state during what is commonly known as the Freedom Summer. The three men traveled to Neshoba County to investigate, they were stopped and arrested by Neshoba County police who then released, and re-arrested them, finally turning them over to local Klansmen who beat and murdered them. After weeks of inquiry by the FBI, the bodies were found and seven Klansmen were brought to trial. A jury of sympathizers found them not

guilty. The federal government later found the men guilty of violating the civil rights of the three murdered men, and the convicted served sentences ranging from two to ten years (Austin 2002).

With the passage of the Civil Rights Act of 1964 and 1965, much of the overt racism against the state's black residents subsided. The Freedom Summer helped register African-Americans in Mississippi despite violent reactions from Mississippi whites. Although Mississippi school districts came up with creative ways to thwart desegregation, continued court challenges by African-Americans resulted in the desegregation of Mississippi schools by 1970 in a series of Supreme Court rulings.

Economic Institutions: History and Present Day:

Mississippi's economic history has followed closely the trajectory of its neighboring state, Louisiana. It began as an agrarian state and focused heavily on the production of cotton in the late 1800s. Swept along by the high demand for cotton by Europeans in the 19th century, Mississippi dominated the burgeoning textile industry (Dattel 2006). This dominance in the textile industry was closely tied to the continuance of the institution of slavery as well as inventions such as the cotton gin. Before the Civil War, Mississippi was the fifth wealthiest state in the nation. The war cost the state approximately 30,000 men and after the war, many plantations were bankrupted by the emancipation of slaves and by the damage Union troops left during the many battles conducted on Mississippi soil (Williams 2002).

After the Civil War, the Mississippi economy turned towards utilizing the Mississippi River as a trading route for the United States. The state also entered into the lumber, manufacturing, and catfish farming industries in the early 20th century. Shipbuilding was a mainstay of the state, enabling Mississippians to maintain a global and national presence during the Industrial Revolution (Busbee 2005).

In the mid-20th century, Mississippi assisted in World War I and II by contributing many farm workers to the effort. In fact during this time, Mississippi made a lasting break from the production of cotton as a main economic resource, however Mississippi remains to this day one of the most rural of the 50 states. And while Mississippi was ranked third in the nation for cotton production and 30% of the state's economic resources come from agribusiness efforts, it now has a much more balanced economic profile (Busbee 2005). After World War I and II, Mississippi entered into the oil refinery business, developing the many oil resources located in the gulf. More recently, Mississippi has dedicated resources towards the development of petrol-chemical plants, plastics and wood products.

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. Educationally, Mississippi ranks in the lower 5% on most measures relating to reading and math proficiency for both 4th and 8th grade students (Statistics 2005). It ranks 40th among the 51 states in terms of high school graduation rates and 49th in terms of residents who have a bachelor's degree. This takes its toll on the state in its efforts to draw in business and diversify its economic portfolio.

Local Government Institutions:

Each of Mississippi's 82 counties is divided into 5 districts. From these districts, a member is elected to the county board of supervisors. The Board of Supervisors is responsible for the management of county government and a number of special districts. The five supervisors are elected by district to four-year terms by the citizens of each county. There are no term limits. Board members serve residents in districts of different geographical size, but each district has

approximately equal population. The primary duties for the board are to establish a budget, set annual property tax rates, and adopt policies that promote economic growth and development (County 2010).

At the local level, a mayor or city council typically administers Mississippi's incorporated cities, towns and villages. Some of the smaller, unincorporated places in the state are run by a commissioner style of government. As of 2002, Mississippi had 296 municipal governments, 164 public school districts and 458 special districts, including the levee districts in charge of the management of the Mississippi River Valley (2010).

Republican governor, Haley Barbour, currently runs the state. Barbour won the gubernatorial election in 2003 from Democratic incumbent, Ronnie Musgrove prior to Hurricane Katrina. According to the state constitution, the eight statewide officers are chosen by the number of electoral votes they receive instead of by a direct popular vote. A candidate wins an electoral vote by winning a plurality of the votes in a state house district; therefore, with there being 122 house districts, there are 122 electoral votes. The state elected officials are: Governor, Lieutenant Governor, State Auditor, State Treasurer, Secretary of State, Attorney General, and Commissioners of Agriculture and Insurance (Services 2010). The governorship in Mississippi is a relatively weak political position. The governor competes with 7 other popularly elected officials (listed above) who have significant budgetary and policymaking powers. In fact, it was not until 1984 that the governor was given sole authority over the state's budget (Nash 2006). Mississippi also has an excessively fractured executive branch at the state level that has made politics overly complicated at times (Krane 1992).

Gubernatorial and national level politics in the state have long been contentious. A change to the electoral structure in the 1970s, which replaced multi-member legislative districts

with single-member districts, has allowed for moneyed (and mostly white) interests to rule the political field. Additionally, Mississippi's political culture has long been a traditionalistic one (Elazar 1984; Nash 2006); whites have dominated most political issues, subjugating black political participation at every turn. Party politics in the state were shaken post-Civil War, Reconstruction, and during the realignment that occurred nationally after the Civil Rights era. The result: the Democratic Party machine in the state remains decidedly weak (Colby 1986; Greenblatt 2003). In fact, since the Reconstruction, only two black representatives have served from the state of Mississippi (Freedman 2007) and at the local level, black participation remains fairly limited to this day (Nash 2006).

The Levee System:

The Mississippi River is one of the most iconic natural resources in the United States. It spans from Minnesota all the way to the Gulf of Mexico and has long been a major tributary for trade, leisure and transportation. The Yazoo-Mississippi Delta is an alluvial flood plain, meaning that the waters of the Mississippi over time have essentially flattened this area, making it highly susceptible to flooding (District 2010).

Two years after Mississippi became a state, efforts began to control the Mississippi river by the erection of a levee in Warren County. In the years leading up to the Civil War numerous attempts were made to control the surges in water that flowed down the Mississippi following winter in the Midwest. At the time, most levee construction was the responsibility of county residents and landowners affected by flooding. In the 1877, the Mississippi state legislature passed an act to establish a board of commissioners who would be responsible for coordinating the construction and maintenance of the growing levee system. In the beginning, most of the board's efforts were limited to southern counties within the state, leaving the upper counties

largely unprotected. Floods in 1882, the further development of the upper delta, and growing local interest led to the creation of the Yazoo-Mississippi Delta Levee District in 1884. The enlargement of the geographic area of which this new organization was responsible, led to the development of a wider levee system within the state (District 2010).

In 1917, the United States Congress took a more active role in the control of the Mississippi River. The passage of the Flood Control Act of 1928 moved the onus of control of the Mississippi River into the hands of the federal government. The Army Corps of Engineers took over much of the maintenance and construction activities surrounding levees while the state levee board managed day-to-day operations of the system. It was not until 1972 when another major flood devastated areas within the levee system that major construction began again in the delta. When Hurricane Katrina hit in 2005, levee control again received attention on the national stage. During the disaster, Mississippi flooding was pervasive, however, the levees held and protected the delta unlike in Louisiana were levee breeches were severe and led to much death and destruction.

Mississippi Pre-Katrina:

Mississippi pre-Katrina had economic, social and educational issues. In 2005, the percent of people living in poverty in the United States was 13.3%, in Mississippi that figure was 21%. Per capita income in 2005 was $25,318 compared to a national average of $34,586. Minimum wage as of 2008 was $5.85 compared to a federal minimum wage of $6.55. The state's graduation rate was 78.5 percent in 2005 compared to a national average of 84.2 (Bureau 2006). Mississippi also remains highly stratified along racial lines. According to the Dissimilarity Index, the Gulfport-Biloxi MSA has a white/black dissimilarity measure of 59.3, meaning that nearly

60% of white residents would need to move in order to have a racially balanced residential distribution (Center 2000).

Unlike Louisiana with its burgeoning music and cultural scene, Mississippi's tourism industry has been limited to riverboat cruises, plantation tours and gambling in places located along the gulf coast of the state. Additionally, Mississippi remains a very rural state, with the Gulfport-Buloxi metropolitan area its second most populated with just over 250,000 residents. Only Jackson, the capital city located in Hinds County has more residents. It is the gulf coast of the state, which took the brunt of the storm, making economic recovery of this area critical to the state's recovery.

Data and Data Sources:

Like the previous chapter, counties are the unit of analysis. The same dependent and independent variables are also used here. One additional variable is added to delineate membership in the U.S. Census Combined Statistical Area (CSA) as of the year 2000. The Gulfport-Biloxi-Pascagoula Combined Statistical Area is made up of five counties in the gulf coast region. The statistical area consists of the Gulfport-Biloxi Metropolitan Statistical Area and the Pascagoula Metropolitan Statistical Area. As of the 2000 census, the CSA had a population of 396,754. The counties included in this group are: Jackson, Stone, George, Hancock and Harrison. In the analyses that follow, the models will report effects of race and class on housing and job creation as it pertains to the CSA, as well as making comparisons between the CSA and the overall state.

Two additional changes to the data from previous chapters should be mentioned here. The jobs data variable, which reports new job starts from 2003-2007, is limited to the years 2004-2007. The reporting agency responsible for collecting data for the state of Mississippi did

not report these figures to the Census for dissemination and repeated calls to the state's economic development board were unanswered. Additionally, Hurricane Rita was not a declared disaster for the state of Mississippi in the fall of 2005, therefore no funding dollars were given to the state in the wake of that disaster for individual assistance or public projects. The following analyses only include funding dollars contributed for Hurricane Katrina.

Demographics of Panel:

Following previous chapters, the tables illustrate basic demographic information of the state of Mississippi during the time period under examination. Table 7.1 summarizes the IA and PA funds received during Hurricane Katrina, Housing Assistance Programs (HAP) dollars and the percentage housing damage in each of the 48 counties affected by the storm.

Table 6.1: Summary of Funding and Occupied Damage

	Katrina IA Funds (by 1,000)	Katrina PA Funds (by 1,000)	Housing Assistance Program Funds (by 1,000)	% Damage (rounded)
Mean	26001.2	46042.4	450211.2	28.86%
Std. Dev.	83544.1	181558.4	83544.1	21.26%
Min	0	66,979	4,262,896	3.6%
Max	496,908.362	11624980.10	652,750.442	90%

Of the Mississippi counties eligible for assistance, Choctaw County received no IA funding as no application for individual assistance were submitted to FEMA. Harrison County, the ground zero of Katrina's wrath, received the most IA ($496,908,361) and PA ($1,162,498,010) funding overall. Table 7.2 summarizes the minority and class distributions for all counties by year. What is notable about this table is that the percentage of minority residents within the affected area increases slightly with each passing year. However, what is more notable

is that in terms of class, the proportion of residents living in poverty among the counties shifts dramatically throughout the panel as evidenced by the change in standard deviation from year to year meaning that in Mississippi, people living in poverty increased throughout the panel despite heavy public and private investment. Additionally, after 2003, the average number of residents living in poverty within the counties affected increased by approximately 3%.

Table 6.2: Minority and Class Distribution by Year

Year		Minority Ratio (in percentages)	Class Ratio (in percentages)
2003	Mean	41.33	20.11
	Standard Deviation	18.55	4.30
	Min	8	10.4
	Max	87	32.4
2004	Mean	41.45	21.26
	Standard Deviation	18.44	4.77
	Min	9	10.6
	Max	86	33.7
2005	Mean	41.55	23.66
	Standard Deviation	18.6	6.89
	Min	9	9.1
	Max	86	33.7
2006	Mean	41.70	23.31
	Standard Deviation	18.7	6.06
	Min	8	11
	Max	86	39.9
2007	Mean	41.94	23.28
	Standard Deviation	18.64	7.06
	Min	8	9.4
	Max	87	41.7

Table 6.3 lists summary statistics for the entire state by county. It should be noted that Mississippi had more counties that qualified for disaster assistance, thus there are more counties included in the dataset. Jefferson and Clairbourne counties have the highest concentration of minority residents as well as some of the highest numbers of people living in poverty. Holmes County has the highest number of people living in poverty at 38%, double the national average.

Table 6.3: Summary Statistics of the state of Mississippi

County Name	Minority Ratio (in %)	Class Ratio (in %)	% of FEMA IA Funds (out of 100%)	% of FEMA PA Funds (out of 100%)	% of HAP Funds (out of 100%)
Adams	55.8	26.84	.0014	.0002	.
Amite	43.4	21.08	.0015	.0001	.
Attala	41.2	22.08	.0004	.0001	.
Choctaw	31	24.08	0	.0001	.
Clairbourne	84.2	31	.0007	.0003	.
Clarke	35	20.48	.0026	.0004	.
Copiah	51.8	22.5	.0023	.0004	.
Covington	36.4	21.18	.0047	.0017	.
Forrest	36.4	23.38	.0198	.008	.
Franklin	37.8	20.94	.0005	0	.
George	10	16.74	.0078	.0011	.
Greene	27	22.04	.0033	.0072	.
Hancock	8.4	16.72	.1938	.2228	.2804
Harrison	26.2	16.2	.3975	.5153	.3548
Hinds	65.6	22.24	.0085	.0039	.
Holmes	80.6	38.3	.0007	.0002	.
Humphreys	72.6	36.14	.0001	.0002	.
Jackson	24.2	15.18	.2193	.1132	.3625
Jasper	52.4	21.58	.0043	.0049	.
Jefferson	86.4	32.22	.0011	0	.
Jefferson Davis	58.2	27.32	.0028	.002	.
Jones	28	20.84	.0171	.0184	.
Kemper	61.6	23.94	.0008	.0001	.
Lamar	15.4	13.2	.0111	.0011	.
Lauderdale	41.2	21.36	.0073	.0036	.
Lawrence	33	18.7	.0035	.0017	.
Leake	43.8	21.16	.0006	.0001	.
Lincoln	30.4	18.76	.0031	.0003	.
Lowndes	43.4	20.06	.0007	.0004	.
Madison	39	13.12	.0012	.0017	.
Marion	33	24.64	.0073	.0068	.
Neshoba	35.4	20.86	.0013	.0007	.
Newton	35	18.46	.0022	.0003	.
Noxubee	70	30.28	.0008	.0001	.

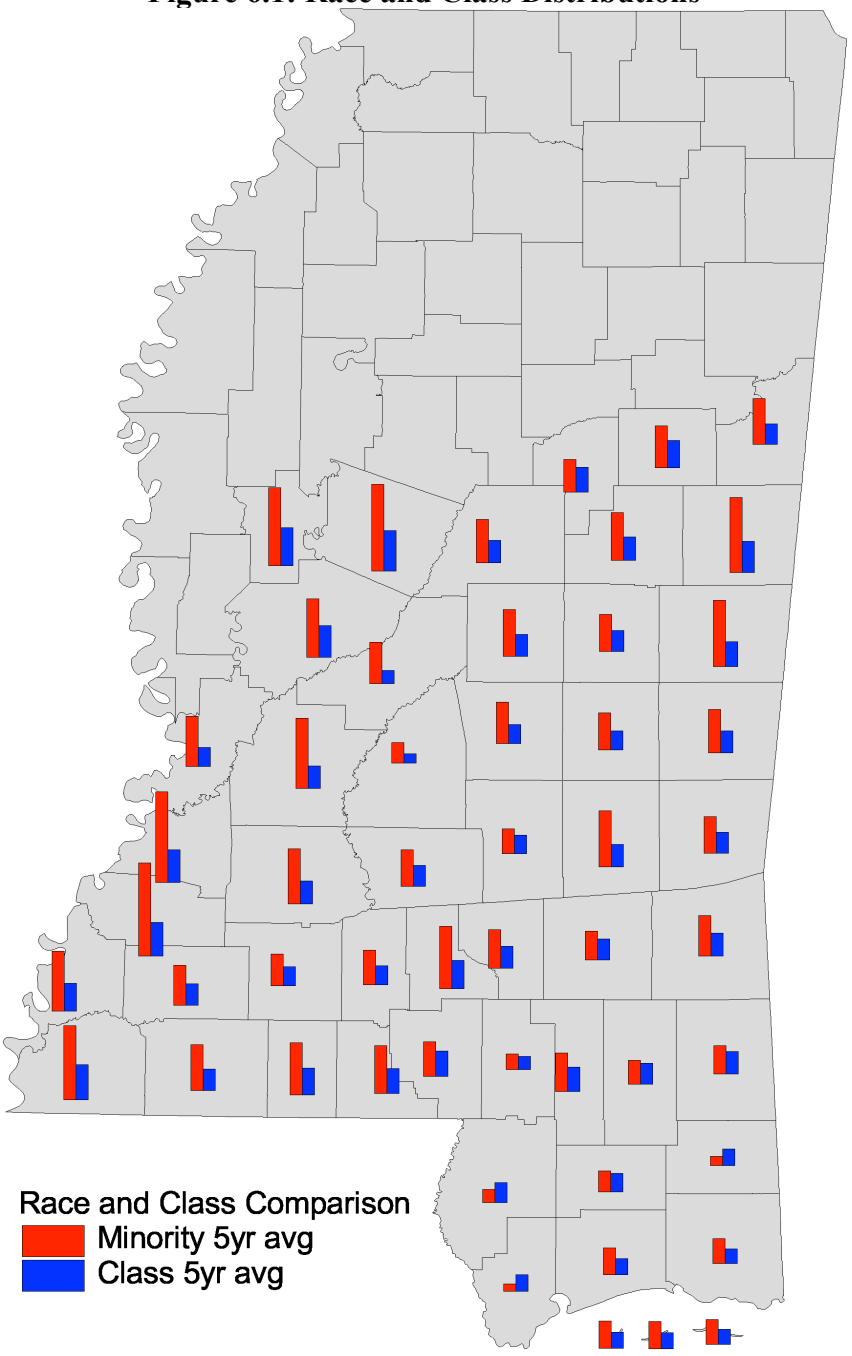
Okittbeha	40	26.3	.0004	.0001	.
Pearl River	13.4	19.66	.0236	.047	.0024
Perry	23	20.32	.004	.0003	.

Table 6.3 Cont,d.

Pike	49.4	26.02	.0075	.0012	.
Rankin	20.2	10.1	.0046	.002	.
Scott	39.4	18.96	.0016	.0004	.
Simpson	35	20.78	.0039	.002	.
Smith	24	18.18	.0025	.0006	.
Stone	20.4	17.98	.0087	.0153	.
Walthall	45	24.2	.006	.0011	.
Warren	47	18.56	.0016	.0003	.
Wayne	38.4	22.44	.0038	.0118	.
Wilkinson	69	33.52	.0009	.0001	.
Winston	45	22.88	.0003	.0002	.
Yazoo	55	30.24	.0007	.0002	.

Figure 6.1 illustrates the race and class distributions statewide from the above table in graphic form. The red bars illustrate the five-year minority population average within each county while the blue bars represent the five-year average population of people living under the poverty line in each county.

Figure 6.1: Race and Class Distributions

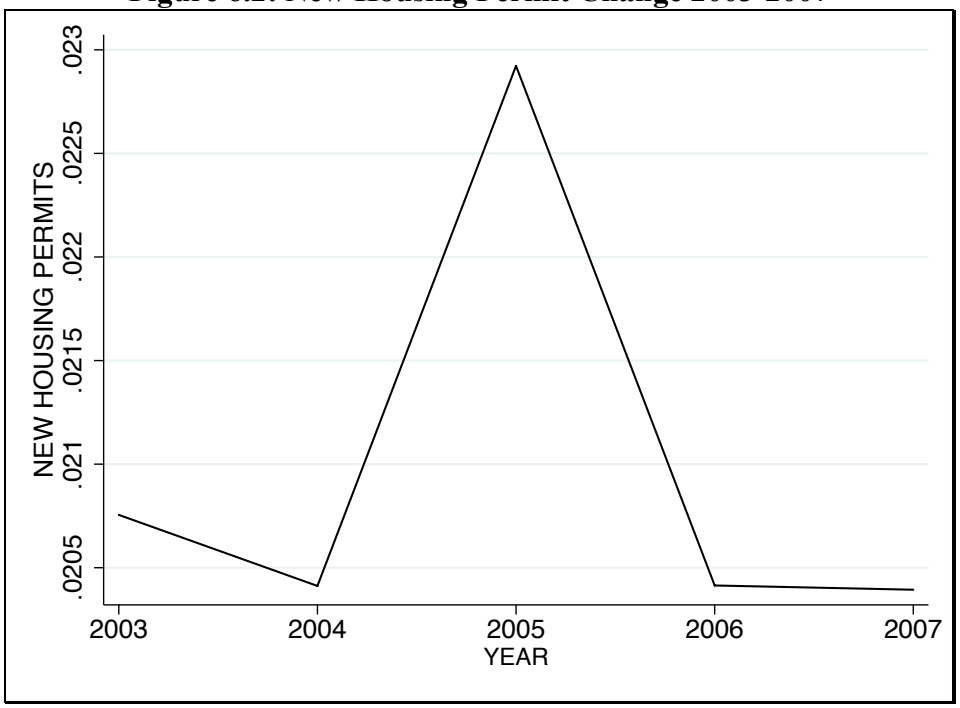


A look at the main dependent variables in table 6.4 reveals slow change in terms of new housing, but a dramatic difference post-Katrina in new job creation within the state. Compared to the state of Louisiana, Mississippi on average had 2-3% less jobs created post-Katrina.

Table 6.4: Job Starts and Housing Permits

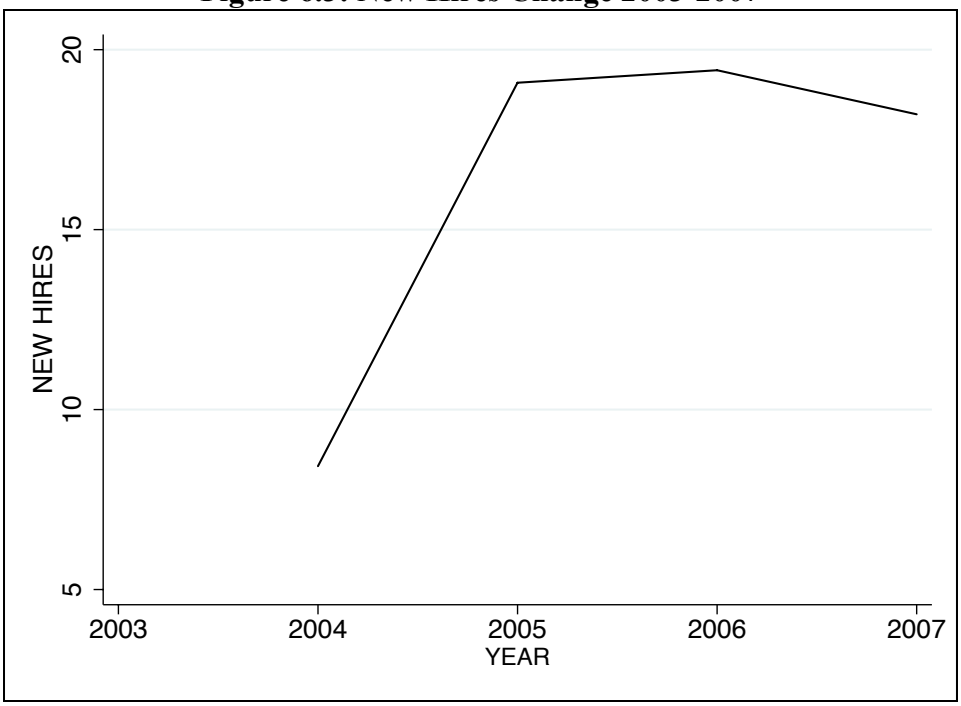
Year		Ratio of New Hires (in %)	Ratio of New Housing Permits (in %)
2003	Mean	NA	.020
	Standard Deviation	NA	.049
	Min	NA	0
	Max	NA	.1912
2004	Mean	8.43	.020
	Standard Deviation	1.69	.046
	Min	5	0
	Max	12	.179
2005	Mean	19.43	.020
	Standard Deviation	5.27	.046
	Min	9	0
	Max	35	.2168
2006	Mean	19.42	.020
	Standard Deviation	5.27	.045
	Min	11	0
	Max	26	.2274
2007	Mean	18.20	.020
	Standard Deviation	5.96	.047
	Min	5	0
	Max	35	.2274

Figure 6.2: New Housing Permit Change 2003-2007



Mississippi, although having much more modest housing creation post-Katrina, experienced a dramatic rise and fall in housing production centered on the year the storm hit as illustrated in table 6.1. New hiring activity in the state also has seen a dramatic shift, with low job creation before the storm compared to fairly high rates of new hiring occurring post-Katrina (figure 6.3).

Figure 6.3: New Hires Change 2003-2007



Panel Results: The State of Mississippi:

Turning to the panel results, we see that Mississippi was affected even more greatly by the hurricane than its neighboring state when taking into account racial and economic diversity. In table 6.5, both independent variables have the hypothesized direction and but only race is highly significant. Again, the number of years past the disaster has a large, positive effect on job creation in the state, with the last quarter of 2005 providing a much needed economic boost to economic health. The new home model performs poorly, with an r-squared value of .20. Finally,

in the new homes model we observe that the number of residents living in poverty has a significant and negative affect on new home permitting

Table 6.5:
Effect of Hurricane Katrina on New Hires and New Homes in Mississippi (Fixed Effects Model)

Variables	New Hires Model	New Homes Model
Minority Ratio	-.088*** (.0283)	.0005 (0004)
Class Ratio	-.054 (.083)	-.004*** (.0019)
Year 2004		.005*** (.002)
Year 2005	10.79*** (.474)	.019*** (0.006)
Year 2006	11.13*** (.638)	.015*** (.005)
Year 2007	9.927*** (.440)	.0148*** (.004)
Constant	13.25*** (1.128)	.014*** (.032)
No. of observations	196[1]	245
F(5,48)	176.24	2.00
Prob> F	0.000	.0842
R^2	.690	.208

Notes: OLS Regression. Numbers in parenthesis are robust standard errors. Variables dropped: Year 2003 and 2004 (New Hires Model only). * significant at 10% ** significant at 5%, ***significant at 1%

Three variables were created to conduct a test of hypothesis 3a, which hypothesized that differing categorizations of race and class would have negative effects on economic activity. Table 6.6 below shows some examples of counties that fell into the four categories created.

[1] The number of cases in the New Hires model are 196 as there were no job creation numbers reported for 2003.

Table 6.7 is a correlation table showing the relationship between the untransformed minority and class variables to the newly created categories.

Table 6.6: Race and Class Characteristics of Mississippi Counties

	Race	
Class (Income)	Black	White
Wealthy	Examples include: Kemper, Lowndes, Jasper and Leake	Examples include: Newton, Jones, Hancock, Pearl River
Poor	Examples include: Clairbourne, Jefferson, Yazoo, and Holmes	Examples include: Wayne, Oktibbeha, Choctaw, and Marion

In table 6.7 we see that the untransformed race and class variables are modestly correlated at .69, while the high minority and high poor category is also highly correlated with the original race and class variables at .75 and .71 respectively. The other variables are also moderately related to each other, ranging from a low of -.68 between the Low Minority Low Poor and Minority Proportion categories to a high of -.14 between the Low Minority High Poor and Minority Proportion categories.

Table 6.7
Correlation Table of Race and Class Variables

	Minority Proportion	Class Proportion	High Minority Low Poor	High Minority High Poor	Low Minority High Poor	Low Minority Low Poor
Minority Proportion	1.00					
Class Proportion	0.6995*	1.00				
High Minority Low Poor	0.1304*	-0.124	1.00			
High Minority High Poor	0.7506*	0.7103*	-0.2410*	1.00		
Low Minority High Poor	-0.1472*	0.1448*	-0.1235	-0.2218*	1.00	
Low Minority Low Poor	-0.6851*	-0.6604*	-0.3503*	-0.6289*	-0.3223*	1.00

Table 6.8 illustrates the effect of socioeconomic categorization on the economy. In both models, hypothesis 3a failed to be confirmed, however increase proportions of minorities in the new jobs model and increased proportions of the poor in the new home permitting model (H1 and H2) were confirmed. Finally, the passage of time again proves to be the most significant indicator of economic recovery for the state, illustrating that the process of rebuilding alone had significant effects on economic recovery.

Table 6.8: Effect of Socioeconomic Categorization on New Hires and Housing

Variables	New Hires Model	New Homes Model
Minority Proportion	-.002** (.001)	-.002 (.002)
Class Proportion	-.003 (.004)	.0006 (.0014)
Minority x Class Proportion	.00006 (.000)	-1.26e-04* (.000)
2004	0 (.)	.017** (.005)
2005	.144*** (.009)	.0001 (.002)
2006	.152*** (.011)	.014** (.004)
2007	.127*** (.008)	.013** (.004)
High Minority*Low Poor	.003 (.018)	-.006 (.013)
High Minority* High Poor	.013 (.023)	.017 (.014)
Low Minority* High Poor	0.017 (.018)	.026 (.013)
Constant	.262*** (.061)	.258*** (.090)
No. of observations	196	245
R^2 (overall)	.616	.299

Notes: OLS Regression. Numbers in parenthesis are standard errors.* significant at 10%, ** significant at 5%, ***significant at 1%

Table 6.9 illustrates the multiplicative effect of racial and class diversity on job and housing creation during the time period under examination. In terms of new hires, the proportion

of minority residents in a county had a significant and negative effect on job creation. Poverty had a negative, but insignificant effect on job creation. There is a distinct and strong yearly effect on job activity and the model is a fairly good fit to the data with an r-square value of .69. In the housing model, class, not race had a negative and significant effect on permitting activity. Hypothesis 3 which theorized that race *and* class would have an affect on economic activity is not confirmed. The coefficient for the multiplicative term is positive, not negative and very small.

Table 6.9: Effect of Poverty and Race on New Hires and Home Construction

Variables	New Hires Model	New Homes Model
Minority Proportion	-.166*** (.062)	-.002 (.001)
Class Proportion	-.224 (.167)	-0.10*** (.003)
Race x Class Proportion	.003 (.002)	.0001*** (.00005)
Year 2004		.005*** (.002)
Year 2005	10.78 *** (.477)	.020*** (.005)
Year 2006	11.14*** (.646)	.0166*** (.005)
Year 2007	9.88*** (.440)	.0143*** (.004)
Constant	16.98*** (3.24)	.223 (.079)
No. of observations	196[2]	245
F(5,48)	176.24	2.00
Prob> F	0.000	.0287
R^2	.6959	.3018

Notes: Numbers in parenthesis are robust standard errors Values. ** significant at 5%, ***significant at 1%

We now turn to the Gulfport-Biloxi CSA results. First, a brief overview of the area's summary statistics is below. What is most notable about the Gulfport area is its *lack* of socioeconomic diversity compared to the rest of the state. Unlike New Orleans, the Gulfport

[2] The number of cases in the New Hires model is 196 as there were no job creation numbers reported for 2003.

CSA was whiter and less poor. Table 6.9 summarizes the main variables of interest for the Gulfport CSA while table 6.10 shows the summary statistics for the five county Gulfport combined statistical area.

Table 6.10: Summary Statistics of the Gulfport CSA Compared to the Entire State of Mississippi

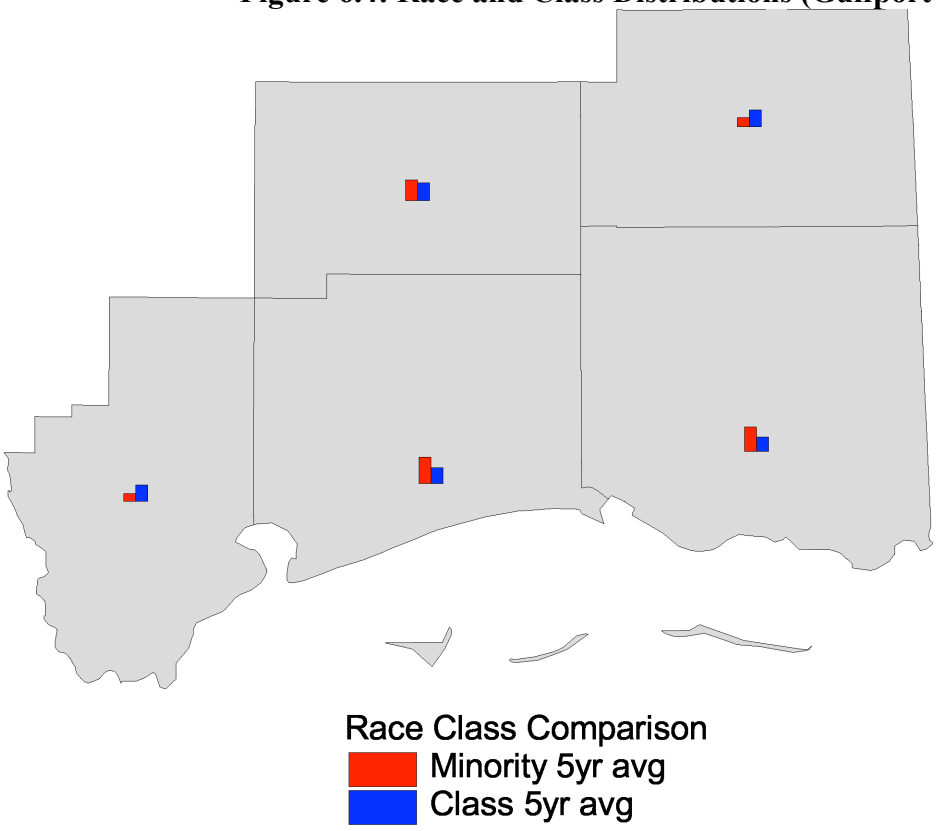
GPB Metro Area	Minority Ratio (Mean in %)	Class Ratio (Mean in %)	Mean % Severe Housing Damage	% of FEMA IA Funds (out of 100%)	% of FEMA PA Funds (out of 100%)	% of MS Housing Assistance Program Funds (out of 100%)
State	44.29	22.97	24.25	17.39	13.44	.24
Gulfport-Biloxi	17.84	16.56	69.44	82.61	86.56	99.77

Table 6.11: Summary Statistics of the Gulfport CSA

County	Minority Ratio (in %)	Class Ratio (in %)	% Severe Housing Damage	% of FEMA IA Funds (out of 100%)	% of FEMA PA Funds (out of 100%)	% of HAP Funds (out of 100%)
George	10	16.74	57.5	.78	.11	0
Hancock	8.4	16.72	90	19.38	22.28	28.04
Harrison	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	.87	1.53	0

Finally figure 6.4 shows the five-year racial and poverty averages for each county included in the Gulfport CSA. The red bar denotes the five-year minority population average and the blue bar represents the five-year poor population average.

Figure 6.4: Race and Class Distributions (Gulfport CSA)



Figures 6.5 and 6.6 illustrate the sporadic changes in hiring and home permitting in the Gulfport-Biloxi area during the time period under examination. Although this area is one of the more populous in the state and sustained the most damage, the graphs illustrate that recovery in terms of housing has been intermittent. In terms of job creation, the area's hiring has been more stable, but as we move further and further away from the storm, job creation has declined.

Figure 6.5: New Housing Permit Change 2003-2007 (Gulfport CSA)

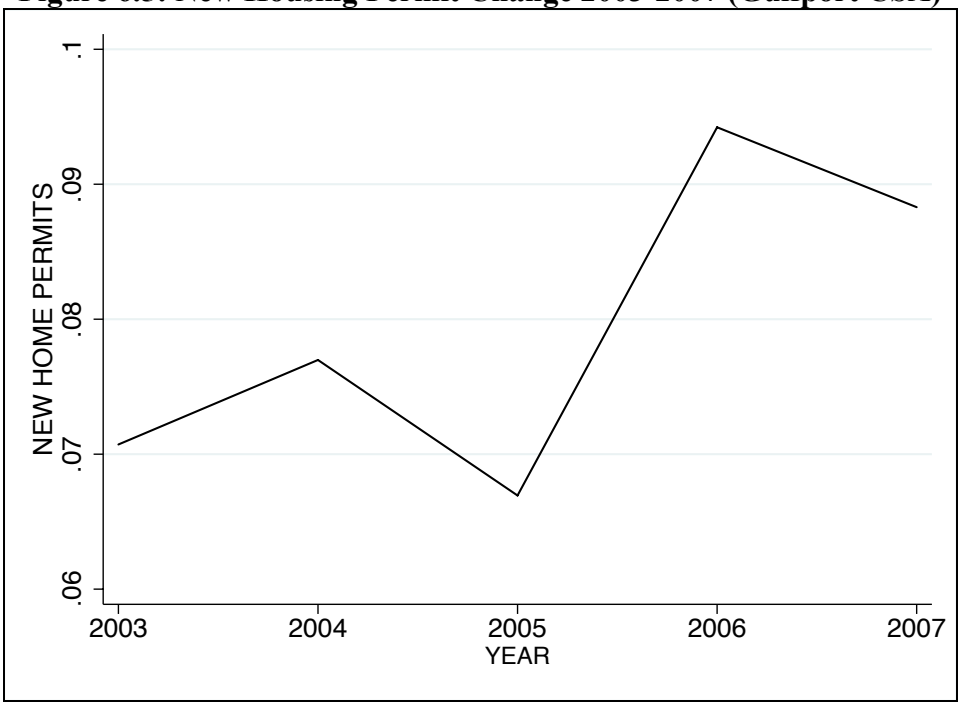


Figure 6.6: New Hires Change 2003-2007 (Gulfport CSA)

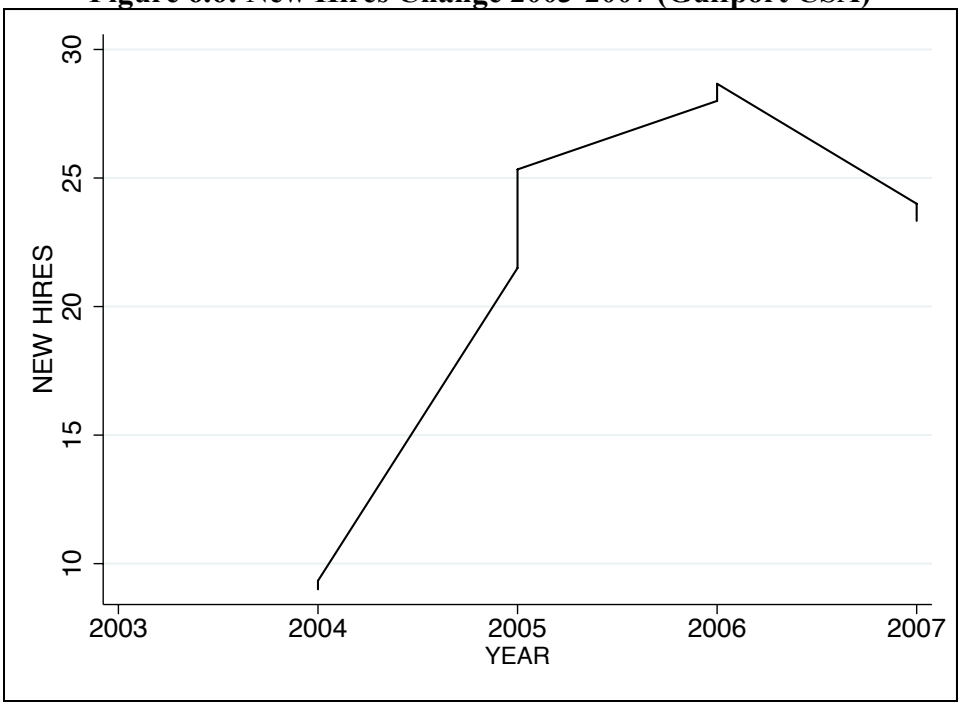


Table 6.12 shows the correlation between the two main independent variables within the Gulfport-Biloxi CSA. There is a weak and insignificant relationship of .28 between minority and

poverty proportions inside the Gulfport area compared to the relationship outside the Gulfport area. The correlation of the same variables for the counties *outside* the Greater Gulfport area was .75 and significant suggesting that heterogeneity may affect the rural areas of the state more than the CSA, opposite the situation in New Orleans. Correlations between the main independent variables of note: percentage of funds dedicated post-disaster and percent of housing damage also showed interesting relationships which can be seen in table 6.11.

Table 6.12: Correlations of Concentration of Minority Residents and Residents Living Under Poverty Line (2003-2007)

Outside Gulfport-Biloxi CSA	.75*
Gulfport-Biloxi CSA	-.28

Note: Significant at the .05 level.

Table 6.12 shows the correlations between the main independent variables: percentage of Individual Assistance, Public Assistance, HAP Funds, and Percent of Housing Damage. These results tell a different story than what we observed in New Orleans. In the counties located outside the Gulfport-Biloxi Combined Statistical Area (GBP) IA and PA funding and housing damage were significantly correlated. Within the GBP, the relationship between HAP funds and Housing actually had a *negative* and significant relationship. This is a paradoxical finding since the creation of the HAP program was aimed at the rebuilding of the Gulfport area, the one most affected by Hurricane Katrina. Finally, there is a high inter-correlation between Public Assistance and Individual Assistance dollars within the GBP area, indicating that FEMA dollars allocated to this area helped to meet both individual household and public organization needs post-Katrina.

Table 6.13: Correlations of Individual and Public Assistance Dollars, HAP and % Housing Damage (2003-2007)

GBP Metro Area= No (44)	*% Housing Damage*	*% IA FEMA Funds*	*% PA FEMA Funds*	*% HAP*

% Housing Damage	1.00			
% IA FEMA Funds	.5756*	1.00		
% PA FEMA Funds	.4501*	.7039*	1.00	
% HAP Funds[3]	-*	-*	-*	1.00
GBP Metro Area= Yes (5)				
% Housing Damage	1.00			
% IA FEMA Funds	.2635	1.00		
% PA FEMA Funds	.3083	.9390*	1.00	
% HAP Funds	-.9983*	.5259	.1710	1.00

Note: Significant at the .05 level.

Panel Results: The Gulfport-Biloxi CSA

Moving on to the results of the panel, like the previous chapters, the dependent variables are the ratio of new hires by year and the number of new home permits issued within the Gulfport-Biloxi CSA during the years 2003-2007. The same independent variables are minority proportion; poverty concentration and a variable that marks the number of years elapsed from Hurricane Katrina's landfall. For each model, a dummy variable for the years 2004-2007 (2003 is the reference year) is included to determine the singular effect of each year on the dependent variable.

[3] Pearl River County was the only county outside the GBP CSA that was given funding through the state's HAP program. The results in Table 12 have suppressed this county from the correlation table.

Table 6.14:
Effect of Race and Class on New Hires and New Homes in the Greater Gulfport Area

Variables	New Hires Model	New Homes Model
Minority Proportion	.126 (.136)	.004 (.003)
Class Proportion	.547 (1.01)	-.029 (.023)
Year 2004	-18.97*** (2.72)	.0255 (.021)
Year 2005	-4.044 (2.488)	-.0002 (.014)
Year 2006		-.009 (-0.71)
Year 2007	-4.39 (2.75)	.026 (0.03)
Constant	16.71 (17.89)	.462 (.380)
No. of observations	20	25
R^2	.8753	.5164

Notes: OLS Regression. Numbers in parenthesis are robust standard errors. Variables dropped: Year 2003 and Year 2006 (New Hires Model). ** significant at 5%, ***significant at 1%

In the new hires model (table 6.14), time seems to be the most important generator of job creation within the CSA, however based on the result the passage of time has a negative effect on job creation in the CSA post-Katrina. It should be noted that the fit of this model is very good with eighty-seven percent of the variance in job creation being explained by the hypothesized variables. Minority and class proportions are not in the hypothesized direction illustrating that lower levels of both have positive effects on economic activity. This is to be expected as the homogenous composition of the Gulfport CSA contributes to the area's ability to produce jobs

and housing. In the new home permits model, none of the hypothesized variables had an effect, although the model's fit predicts fifty-one percent of the variance in new home permitting within the area. Next, an additional variable was created to ascertain the multiplicative affect of race and class on the CSA (table 6.15). The new home model again had no significance and is not presented below.

Table 6.15:
Effect of Hurricane Katrina on New Hires in the Gulfport Area

Variables	New Hires Model
Minority Proportion	3.10* (1.22)
Class Proportion	4.17** (1.39)
Race x Class Proportion	-.179* (.078)
2004	-14.05*** (1.25)
2005	1.385 (1.49)
2006	3.95*** (2.89)
Constant	-48.88* (21.68)
No. of observations	25
R^2 (within)	.8925

Notes: OLS Regression. Numbers in parenthesis are robust standard errors. Variables dropped: Year 2007 dummy.* significant at 10%, ** significant at 5%, ***significant at 1%

The multiplicative term of race and poverty concentration has a small, significant effect on the model verifying hypothesis three as seen in table 6.13, however again we see that time

plays a significant role in the creation of jobs in this area of the state. Next t-tests were run to assess the differences between the dependent variable within the Gulfport CSA and the rest of the state. The two samples are of very different sizes (i.e., there are 44 counties outside the Gulfport CSA and only 5 in the metro area), thus variance in the two groups is extremely different and table 6.16 below reports the unequal variance results for new hiring activity.

Table 6.16: Two-sample t test with unequal variances (New Hires)

Group[4]	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	176	.2019318	.0057252	.0759527	.1906326	.2132311
1	20	.2975	.0275096	.1230265	.2399218	.3550782
Combined	196	.2116837	.006183	.0865624	.1994895	.2238779
Diff		-.0955682	.028099		-.1554058	-.0370775

diff = mean(0) - mean(1) t = -3.4011

Ho: diff = 0 Sattherwaite's degrees of freedom =20.6773

Ha: diff < 0 Ha: diff = 0 Ha: diff > 0

Pr(T < t) = 0.0014 Pr(|T| > |t|) = 0.0027 Pr(T > t) = .9986

The t-statistic is -3.4011 with 20.6773 degrees of freedom with a corresponding two-tailed p-value of .0027, which is less than .05. From this, we can confirm the null hypotheses that that the difference of means in new hiring between rural and urban counties in Mississippi is different from 0, allowing for differences in variances across groups. These results suggest that there is a difference between how recovery proceeded in the Gulfport area compared to the rest of the state. A t-test was also run for the new home permits variable. The results are presented below in table 6.17. The t-statistics is 4.1321 and the corresponding p-value fall is .0003, therefore the we again confirm the null hypothesis that the difference of means in new home

[4] Group 0 are the counties located outside the Gulfport CSA, or 176 observations over the five-year period. Group 1 is the 5-county CSA, or 20 observations over the five-year period. There were no job data available for the year 2003. In table 6.17, new home permitting has data from 2003, thus the number of observations increase to 220 and 45, respectively.

permitting between urban and rural counties is different from 0, allowing for differences in variances across the two groups.

Table 6.17: Two-sample t test with unequal variances (New Homes)

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	220	.0143373	.0025115	. 0372511	. 0093875	.019287
1	25	.079432	. 0155518	.0777588	. 0473347	.1115293
Combined	245	.0209796	.003017	.0472234	.0150369	.0269223
Diff		.0650947	.0157532		.0326676	.0975218

diff = mean(0) - mean(1) t = 4.1321

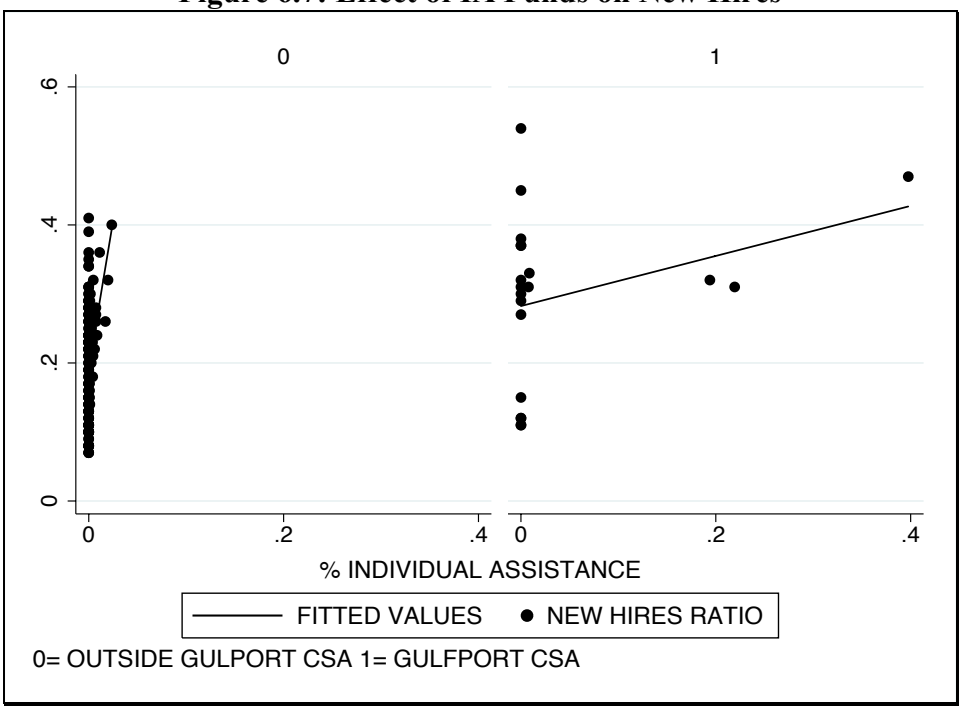
Ho: diff = 0 Satterthwaite's degrees of freedom =25.2662

Ha: diff < 0 Ha: diff = 0 Ha: diff > 0

Pr(T < t) = 0.9998 Pr(|T| > |t|) = 0.0003 Pr(T > t) = .0002

Finally, the following figure (6.5) illustrate the relationship between the Individual Assistance funding and the dependent variables for the years in the panel. In all cases the amount of funding directed at Harrison County pulls the regression line upwards indicating that funding did have an effect on hires and housing but that the results should be interpreted with caution. The results for the other funding streams were similar, for sake of space only the Individual Assistance and New Hires relationship is shown.

Figure 6.7: Effect of IA Funds on New Hires



Looking at the linear regression of external funding and its affect on economic recovery (Table 6.18), we observe that funding has not significant effect on economic recovery over the time period, however we see that race does. As the proportion of racial diversity of a place increases, this in turn has a negative effect on the variance of new hiring, providing evidence for hypothesis one. The fit of the model is moderate, with the variables only predicting 33% of the variance in new hiring throughout the panel. The Housing Assistance Program funding was made available only to four counties within the state and was dropped from the model.

Table 6.18:
Effect of External Funding, Poverty and Minority Population on Recovery in Mississippi

	New Hires
Minority Proportion	-.096***
	(.038)
Class Proportion	.016
	(.099)
% Public Assistance $	7.844
	(8.70)
% Individual Assistance $	6.955
	(6.99)
% HAP $	
Constant	22.40***
	(1.90)
Number of obs = 49	
F(4, 48) = 10.57	
Prob > F = 0.0000	
R-squared = 0.3380	

Note: OLS Regression. Numbers in parenthesis are robust standard errors.

Turning to new housing (Table 6.19), we observe that individual assistance played a small role in new home permitting activity throughout the panel. However, neither hypothesis one or two dealing with the hypothesized negative effect of race and class on economic activity were confirmed. The fit of the model is moderate, indicating that there again remains an unknown factor that affected economic activity in the state of Mississippi during this time.

Table 6.19:
Effect of External Funding, Poverty and Minority Population on Recovery in Mississippi

	New Homes
Minority Proportion	.0008
	(.0005)
Class Proportion	-.0039
	(.002)
% Public Assistance $	-.111
	(.091)
% Individual Assistance $	.438***
	(.141)
% HAP $	
Constant	.0726
	(.0440)
Number of obs = 49	
F(4, 48) = 60.49	
Prob > F = 0.0000	
R-squared = 0.3608	

Note: OLS Regression. Numbers in parenthesis are robust standard errors.

Finally, a model with all variables was run to determine the effect of race and class on both new job production and home permitting activity throughout the panel. Table 6.20 shows that the proportion of minorities in an area negatively impacts the creation of new jobs throughout the panel, while the proportion of residents living under the poverty line affects new home permitting negatively. There is a consistent yearly effect between both models and funding, while hypothesized to have a mitigating effect on the race and class variables, actually decreases job and home permitting activity in most cases. The fit of each model is moderate with an r-squared value of .64 for the new hires model and an r-squared value of .31 for the new home permits model. None of the transformed combination variables (H3a) had a significant effect on either model.

Table 6.20
Effect of All Variables on Economic Recovery

	New Hires Model	New Homes Model
Minority Proportion	-.00319** (-.001)	-.00218 (-.002)
Class Proportion	-.00328 (-.003)	-.0126** (-.005)
Race x Class Proportion	.0000576 (.000)	.000124* (.000)
High Black High Poor	.0137 (-.023)	.018 (-.015)
High Black Low Poor	.00566 (-.017)	-.00541 (-.013)
Low Black High Poor	-.0182 (-.017)	.0262 (-.013)
2004	0 (.)	.00584* (-.002)
2005	.130*** (-.008)	.00898 (-.006)
2006	.151*** (-.011)	.0130** (-.004)
2007	.127*** (-.008)	.0126** (-.004)
% Individual Assistance	2.901*** (-.823)	1.695 (-.962)
% Public Assistance	-.826* (-.374)	-.648 (-.444)
% HAP Funds	-1.412*** (-.368)	-.666 (-.443)
Constant	.251*** (-.057)	.252* (-.096)

Table 6.20 Cont,d.

N	196	245
Adjusted R^2	.648	.316
Prob >F	.0000	.0000

Conclusion:

In the state of Mississippi, recovery has been steady, but short lived, even in areas where there is less heterogeneity in socioeconomic composition. In the case of new hiring, much of the state's resources were directed at Harrison County, the county most devastated by the storm. Mississippi had dismal economic productivity before Hurricane Katrina and it would seem from the results here that although attention to recovery had an effect on the state, much of this has been short-lived. The hypotheses of racialized response were supported here in areas where high heterogeneity was present. In the Gulfport area, where race and class was not an issue, the passage of time predicted the creation of jobs and homebuilding much better than the socioeconomic variables. In all, the results here confirm that a racialized response is present in places where there is a diverse mix of income and racial makeup and shows the lasting effects race and class can have on economic recovery in populated and less populated areas. And as we move further and further past this disaster in Mississippi, both housing starts and new hires decline dramatically, even more so than in the state of Louisiana.

The question of whether directed effort at creating jobs, recovering lost infrastructure and promoting places that will be "renewed" after a disaster is effective, appears to have been answered in the negative for both Louisiana and Mississippi. In addition, the metropolitan areas, while rebuilt, have lost population, infrastructure (both private and public), and economic stability because of these events. As we turn to the final concluding chapter, a closer look at the

ramifications of emergency management policy, local socioeconomic dynamics and the implications of racialized response for future disasters are explored.

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Chapter Seven: Concluding Thoughts

Introduction:

The 2005 hurricane season 2005 marked one of the worst natural disasters in our nation's history. The loss of life, livelihood, culture and community has changed the American South permanently. The places and spaces that were devastated by the storms will never be the same and the rebuilding and recovery process is an ongoing task that in recent years seems to have lost steam. Most recently, the BP oil spill in the Gulf of Mexico illustrates that in the area of emergency management, both natural and man-made disasters can have untold impacts on communities (Anonymous 2010; Walsh 2010). More importantly, these disasters illustrate the failures of emergency planning to attenuate loss of life and property. Political leadership and community cohesiveness are necessary in order to create plans that allow for communities to survive emerging issues and thrive once incidents are under control. The development and fostering of social capital, as well as an effort to be inclusive throughout the policy planning process is necessary in all communities when planning for disasters (Coleman 1988; Jackman and Miller 1998; Margit 2006; Richard and David 2010; Robert 2003; Skocpol and Fiorina 1999).

Local policy development is also crucial to ensuring that economic recovery is smooth. As chapter four illustrates, in Mississippi local governments are charged with the task of being the first to respond during a disaster but are not provided the tools needed (expertise, funding, guidance) to execute this role effectively. State and federal oversight is also lacking, further complicating the ability to assess community needs during an emergent incident. Additionally, policy planning in this area remains highly technical but has low salience in the public's eye so policymakers have not been as committed to ensuring that planning occurs. When considering

issues of race and class, communities with high numbers of residents living in poverty are doubly affected, as the financial resources needed to implement policy are nonexistent. In communities where there are high numbers of minority residents, community trust as well as financial limitations makes inclusive, comprehensive policymaking difficult (Bond and Saunders 1982; Hutchings and Valentino 2004; Mendelberg and Oleske 2000). Race and class are separate sociological phenomenon, but the quantitative evidence shown here illustrates that they both play a large role in economic health of communities prior to, during, but especially after a disaster strikes (Col 2007; Holvino 2010). Thus political actors at all levels of government should pay close attention to this aspect of community when creating all-hazards planning documents. Access to transportation, availability of housing/shelter, and dissemination of public information during times of crises should be made available to all people within a community, not just those with monetary means. These simple considerations during the policy process can stem the loss of life and property post-disaster.

Theory Revisited:

The theoretical perspective presented had three parts: race, class and the interaction of the two in the development of emergency plans, the execution of said plans and the subsequent economic recovery of areas post-disaster. Consistent with findings from other race and class studies, this project confirms that racial and economic diversity in an area depresses the ability of communities to recover after an emergency (Hypothesis 1 and 2). High concentrations of poor residents had significant negative effects in the state of Louisiana.[1] The interactive effect of race and class, however, did not have the expected effect in either state (Hypothesis 3a). Cooperation and competition theory hypothesizes high concentrations of race and/or class within a locale

[1] See tables 4.6, 4.9 and 4.10 in Chapter 4.

results in a lack of coherent planning that is inclusive of certain groups resulting in policy outcomes that are distinctly different for residents of color. The Racialized Response Theory bares this finding in all three states by illustrating that in places where high concentrations of poor and/or minority residents reside, there are distinctly different patterns of economic activity despite massive investment. Competition and cooperation theory suggests this occurs due to the different needs of groups and the inability of groups to come to a consensus to managing scare resources (political and economic) (Bobo and Hutchings 1996; Bornstein and Rapoport 1988; Frymer 1999; McClain 1993; McClain and Karnig 1990; Oliver 1999).

Hypothesis 3a tested different categorizations of socioeconomic combinations (i.e., High Minority and High Poor versus High White and Low Poor) to determine if places with various mixes of residents would have similar negative effects on economic activity. However, findings were not consistent with the notion that once an area reaches a certain level of minority or poverty concentration, recovery becomes more difficult (Card 2008; Goering 1978). None of the different combinations had the explanatory power of the original untransformed poverty or minority proportion variable.[2] While it is impossible to track the residents that were displaced by the storm and determine who returned home with the data used here,[3] it is important to note that tipping points as envisioned as the amount of diversity within a locale may yet play a role in economic recovery.

Institutionalized racism was mentioned as a possible effect that could taint results found here. As mentioned in chapter two, it is impossible to ascertain how much of an effect institutionalized racism could have on these results without conducting a large-scale time series

[2] See table 4.9 in chapter 4.

[3] The current 2010 census will have a supplement containing this data and could be used in future research.

with variables to track major legislation related to race, class and emergency planning. This type of project is beyond the scope of this work, but should be undertaken in the future if funding and data become available.

Results:

From a theoretical perspective, the quantitative results illustrate that in the area of job recovery, the hypotheses of racialized response were confirmed in both Mississippi and Louisiana. In Louisiana, race played a substantial role in limiting the economic progress of places post-disaster. This result held when testing the effect on new home construction, albeit to a much smaller degree. The regression analyses also show that class also plays a role in limiting the development of jobs in the state.[4] When looking at the effect of external funding, and its role in mitigating the effects of race and class on economic recovery, funding had no significant affect on recovery economies in places where racial and class diversity was high[5].

In New Orleans, the most devastated area in the state post-Katrina, the effects of race and class were very different to what was found in the state results. [6] The class variable, expected to be negative as hypothesis 2 predicted, had a positive effect on new job creation throughout the panel. Only when looking at new home permitting activity did we see either variable have a significant, negative effect.[7] Overall, the housing results for both states were not very robust in any instance and while this has been used elsewhere as a marker of economic health, it may not be a good indicator of recovery in Mississippi and Louisiana due to high concentrations of rental units in the Gulfport are and New Orleans (Fisher 2006; Lubell 2006; Turner and Rabenhorst

[4] See tables 4.6, 4.7 and 4.9
[5] See table 4.10
[6] See tables 5.5 and 5.6
[7] See table 5.7

2007). The correlation between the number of residents living in poverty and the number of minorities within a locale was *stronger* inside the greater New Orleans metropolitan area as expected, but the regression results did not bear out this relationship when ascertaining these variables affect on the economy. This result casts the issues of race and class as a New Orleans-centric narrative in doubt. The additional robust results from chapter five lend credence to the issues of economic recovery as a state, not big city problem. For as much effort and time put into rebuilding the city of New Orleans, the results of this project show that much more work is needed in other areas of the state.

In Mississippi, the theory of racialized response were more mixed. The proportion of minority resident has a significant effect on economic activity throughout the panel, but when looking at new home permitting activity class had a negative and significant effect. Results for job creation in Louisiana and New Orleans were robust, but for new home construction, weakened when controlling for the passage of time.[8] Looking at the results for Gulfport, a place with a socioeconomic makeup nearly opposite of New Orleans (i.e., 17.8% minority vs. 32.88 minority proportion), neither class nor race had a significant effect on economic recovery. These results show that in places where racial and economic diversity were low, economic results were more robust. In addition, the passage of time in Mississippi played the biggest role in predicting recovery,[9] which may indicate that state leaders were better able to mobilize resources to assist in job creation and housing development. This result should be interpreted with caution, however; outside the Gulfport CSA job creation and housing development post disaster was dismal regardless of the socioeconomic makeup of the county. So although the Gulfport area results

[8] See table 6.5, 6.8

[9] See table 6.8

indicate a robust recovery, the stratification on racial and class lines throughout other parts of the state confirm the racialized response theory.

The results for the Gulfport area show that the effects of class are insignificant, and that the passage of time is the best predictor of new job creation[10]. Minority concentration also plays little role in understanding the recovery of the Gulfport area of the state. Therefore, future research utilizing the racialized response theory should be updated to include a rural component in analysis. It would seem that the homogeneity of Harrison County helps recovery and this provides additional credence to the racialized response theory as these results show the composition of place does matter. Additionally, comparing the results to areas outside the CSA, rural communities fared poorly in both states. As the racialized response theory suggests, if the socioeconomic composition of place matters, policy and planning will reflect this and it is the circular function of policy, community, and response that make for success or failure after a disaster strikes.

Although the recovery of both states has been limited in housing and job creation, there are some critical differences in emergency response and recovery that should be noted here. In Mississippi, the governor's office has been quick to create a plan for the Gulfport area that has had some success in the years post-Katrina. Haley Barbour also utilized EMAC resources to his advantage immediately following the storm (Waugh Jr. 2007).

Reese (2006) mentions several features that indicated successful recovery from the flooding of East Grand Forks in 1997. In comparing the community indicators needed to redevelop a place post-disaster, she illustrates how recovery is possible and may be applicable to places such as Detroit, Michigan, a place which has long suffered from slow, economic death.

[10] See tables 6.13 and Table 6.14

Community pride, sense of urgency couple with long-range vision, and a focus on community hope are all needed to ensure recovery is swift, long lasting, and inclusive. Louisiana's response, in contrast to Mississippi, seems to mimic the slow death occurring in Detroit. Post-disaster development has been limited due to political infighting and pressure to quickly redevelop wetland areas to recoup economic losses without considering the historic pitfalls of ignoring land development recommendations (Cox and Reese 2007).

Hypotheses Revisited:

H1: An increased ratio of minority concentration decreases the amount of economic recovery post disaster.

Increased racial populations in both Louisiana and Mississippi were shown to have significant and consistent effect on the economic recovery, especially in the area of job creation. In the case of Louisiana, increased ratios of minorities and poor residents affected the development of new jobs and in new home permitting, the proportion of poor residents negatively affected this aspect of the economy. In Mississippi, increased proportions of minority residents negatively affected job production throughout the panel while increased proportions of residents in poverty negatively impacted new housing. In New Orleans, both race and poverty had devastating effects on job and housing production throughout the panel.

H2: Lower class concentration *decreases* the amount of economic recovery post disaster

Lower class concentrations in both Louisiana and Mississippi had inconsistent effects on job creation and housing recovery. In Louisiana and New Orleans, the effects of class were small, but significant, however in Mississippi, outside the Gulfport CSA, lower class concentrations had a significant effect on job and housing recovery but not within the CSA.

H3: Increased ratios of both minority and lower class concentration *decrease* the amount of economic recovery post disaster.

In Louisiana, the interactive term of race and class proportion produced no significant results in economic activity throughout the panel (See table 8, Chapter 5). In Mississippi, only in the new home permitting model did the multiplicative term have an effect on economic activity, albeit small and positive. In New Orleans, the interactive term produced no significant affect on new home permitting or new hiring throughout the panel. In the Gulfport CSA, the interactive term of race and class proportion produced a negative and significant effect on new hiring as hypothesized, however the variable had no effect on new home permitting.

H3a: Differing Racial and lower class concentrations combinations may act as tipping points, which, once a critical threshold is passed, decrease economic recovery.

In the case of Louisiana and Mississippi, no evidence for a racial or class tipping point was found. Testing different combinations of minority and class populations on job and home permitting produced no significant results in either case.[11] Again, it should be noted here that the literature on tipping points has traditionally tested the public opinion of residents who move in and out of districts based on public policy preferences. The approach used here does not utilize public opinion data, but attempts to ascertain the differing effects of socioeconomic combinations on economic activity. Nonetheless, the approach used in this project produced no fruitful results for discussion.

H4: The mention of race and class in planning documents *increases* the effectiveness of disaster mitigation.

The interactive effect of race and class had no effect on economic recovery in either state. Evidence for the tipping point hypothesis was supported in both cases explored here. Finally, in the policy review, lack of consideration for racial and lower class groups was found to have an effect on the expedience with which emergency plans were executed. Overall, racial composition explains economic recovery of areas post-disaster best. In terms of policy development, the

[11] See table 4.9

policy review illustrates a lack of detail on how to best meet the needs of marginalized populations, particularly minorities and the poor in both states. Thus, the affect of this lack of attention resulted in a haphazard approach to getting residents out of the cities affected in a timely manner, providing emergency shelter for residents left behind, and providing housing and job resources for affected groups post-Katrina. The organizations responsible for the recovery aspect of emergency planning have very little direction as to how best to engage marginalized groups, work with local economic leaders, or communicate economic revitalization plans to communities at-large. This lack of horizontal communication has resulted in stunted economic growth in both states as evidenced by the results shown in this project.

Policy Implications:

The racialized response theory posits that community composition (namely high diversity) affects the policymaking process in a negative way leading to incoherent or incomplete policies and as a result a decreased chance at a sustained recovery. Looking at the economic activity in places within both states with high diversity compared to those that are most white and middle-class, this theory has been largely confirmed. There remains one question that is unanswered however, how do race and class issues emerge in the policy making process? To answer this question, a look at the state emergency management plans was done.

The policy review shows that, in general, all levels of government typically overlook community composition when creating public policy. Examples of this include the building of an interstate highway system that separates the inner cities from the suburbs, the practice of red-lining mortgage applications to discourage racial mixing within communities, the resistance to school busing to integrate public schools, the list goes on and on. Thus in the U.S., place matters, and for many it can be the difference between life or death as was the case for many residents in

low lying areas during Hurricane Katrina, or the ability to return to the place that is home (Dreier et al. 2001). Community cohesion planning, while popular in Europe (Adam 2006; Craig et al. 2009; David 2005) has not been utilized to the extent it should in most areas of policy development. Since emergency management is such a turbulent and disruptive process, planning for these events demands community participation. Black box theory developed by David Easton (1957), which envisions public policy development as a system of inputs and outputs that produces policy that is responsive to the demands of interested parties (i.e., the general public, the government, and political community), states that policymaking is a continuous process that is made up of an interrelated set of activities, roles and institutions which operate in an environment that provides inputs to the political system and translates this input in to policy outputs. In terms of emergency management, the inputs from the political system should include residents of all communities, policy professionals as well as emergency management expert, however this area of policy development remains fairly closed and highly specialized. This closed nature of policy development means that the system is insular and slow to respond to newly emergent problems that development when new disasters strike.

The policy review also illustrate the need for due diligence on the part of state and federal officials in understanding their roles during emergencies. The mobilization of needed resources and collaborative efforts across various agencies should be incorporated. Finally, policymaker's aversion to risk (politically) in creating policies that are costly to the American public should be tamped down by providing the public an opportunity to understand the true costs of inaction or inadequate planning (Hacker 2004; Shavell 1979; White 2006). Natural disasters, as well as man-made disasters are not place specific. What occurred in New Orleans was the culmination of

years of poor planning, racial and economic strife, as well as political inattention to these pressing issues.

Since Hurricane Katrina several federal policy changes have been implemented. In 2006, Congress passed the Post-Katrina Emergency Management Reform Act (Pub. L. 109-295). This act contains several provisions that make several organizational changes to FEMA and the Department of Homeland Security including:

- Giving FEMA both an elevated status (i.e., it is now considered a distinct entity within DHS) within Homeland Security and enhanced organizational autonomy to respond during disasters;
- Authorizing the creation of the National Integration Center, whose responsibilities include the management of both the NIMS and the NRP;
- Charges FEMA with the creation of a logistics system to track the location of goods and services to affected states during disasters;
- Allows the FEMA administrator authorization to facilitate disaster response operations (i.e., Recovery Strategy);
- Creates Emergency Response Teams for use during emergencies, as well as Urban Search and Rescue teams to be used in post-recovery stages;
- Charges the FEMA administrator with assembling a group of federal and non-federal players to develop recovery strategies for a myriad of emergency situations;
- Establishes recovery offices in Mississippi, Louisiana, Alabama and Texas
- Develops a separate Housing Strategy (related to the Recovery Strategy noted above) to assist in providing disaster victims with housing resources post-disaster;
- Charges the FEMA Administrator to designate a Small State and Rural Advocate to ensure that rural and small area needs are met (Bea 2006).

At the state level, both Louisiana and Mississippi have updated emergency planning documents incorporating lessons learned during Katrina (2010). State officials highlight issues of staff turnover and reluctance of arbitration over FEMA funded projects as major impediments to economic recovery post disaster. Finally, at the community level New Orleans and the Gulfport area have both implemented community resiliency panels to determine best practices in the event another disaster on the scale of Hurricane Katrina occurs (Cigler 2010; Gillette 2007; Northway 2009). Additionally, the impact of newer disasters such as Hurricanes Gustav, Ike and the Deepwater Horizon oil spill have hindered economic recovery and policy adjustments have yet

to be implemented to handle these new developments (2010; Cigler 2010). It would seem that issues of race and class and community cohesion may indeed be present in the black box, time will tell whether or not these new inputs will product meaningful policy outputs for those involved.

Future Research Implications:

Racialized response theory should be tested on other focusing events throughout United States history. This should be done to determine whether, in different areas of the county, racialized response remains an issue. Future research on emergency management planning and the role of race and class in the planning and recovery stages of emergency management can be tested by utilizing participant observation, case study and in person interview approaches. Using participant observation of the policy planning process may uncover critical opportunities to include the community in recovery planning. Case studies of successful planning strategies and execution of said plans will allow for policymakers to duplicate well-made plans and adjust them accordingly for specific situations. Finally, in-person interviews may help uncover the thought processes employed when declaring and executing emergency management plans. These elements of emergency management planning policy have been closed to researchers and the public, future work to illuminate these areas is necessary if successful plans are to be developed in the future.

The Importance of Rural Study:

This project highlighted differences between urban and rural recovery in stark ways. The socioeconomic composition of both states in its rural areas were very similar to each other, and although the poor and black were concentrated in New Orleans per the media coverage of Hurricane Katrina, there seems to be just as big a story (of lack of coordination, communication

and consideration of group needs) that is ongoing in the state's rural areas. Research in this area is critical to understanding both the policy process as well as the recovery process. Rural needs typically do not take precedence in state planner's minds when creating public policy and this research highlights these needs in the policy planning process as well.

Data Needs:

To conduct a thorough analysis of rural needs, additional information would need to be collected. Creating a survey instrument to be used to ascertain the planning processes of these areas would shed much needed light on the ways emergency management and economic development planning could be improved. Additionally, research into the existing policy network between the urban and rural in the area of emergency planning policy of both states should be further explored. Finally, issues of race and class may be even more insurmountable in places where citizens live further apart. The creation of a dissimilarity index of rural area might also be an important measure to determine the affect proximity has on planning and recovery.

Next Steps:

Moving forward from this research project, I would like to proceed with the development of a survey instrument that could be used to gauge the affects of race and the inclusion of minority groups in the policy planning process at the state and local levels. Additionally, the development of a measure of dissimilarity for rural areas would be necessary in order to undertake testing the racialized response theory in other areas of the United States; disasters are not discriminate in which areas they hit, big city, or small town. Finally, updating the current data set with 2008, 2009 and 2010 economic numbers would further strengthen the results founds here. Adding controls for a change in administration as well as additional federal

programs (i.e., ARRA) that have since been created to mitigate economic issues in the gulf should be explored.

Conclusion:

This project set out to determine whether race and class play a decisive role in the economic recovery of places after a natural disaster. By utilizing a panel design, results show that race and class do play a role in the rebuilding of communities. Additionally, this project aimed to determine whether race and class play a role in the policy process surrounding emergency management. Using a document review approach, the racialized response theory also was confirmed. The failure to incorporate race and class into planning documents proved to be problematic in dealing with a natural disaster in a highly stratified place. What occurred in the gulf coast based on these finding could easily happen in New York City, San Francisco, Miami, or any place where the race and class divide is significant. What remains to be seen is whether policy learning will occur in this area of policy. As stated above, emergency management is a highly labor intensive process and requires technical expertise, risk management, substantial financial resources as well as horizontal and vertical collaboration between levels of government.

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