Going Home after Hurricane Katrina:
Determinants of Return Migration and Changes in Affected Areas *

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Abstract

This paper examines the decisions of Hurricane Katrina evacuees to return to their pre-Katrina areas and documents how the composition of the Katrina-affected region has changed over time. Using data from the Current Population Survey, we show that age, home ownership, and the severity of damage in an evacuee's county of origin are important determinants of whether evacuees returned. The demographic composition of evacuees who returned differs from that of evacuees who did not return: returnees are older and a larger percentage of returnees are white. Despite large differences in the demographic composition of returnees and non-returnees, at the aggregate level the demographic composition of the Katrina-affected region changed relatively little over time. However, changes over time in the distribution of family income were substantial. Changes over time in both family income and demographic composition are larger for the New Orleans metropolitan area than for the entire region affected by the storm.

1. Introduction

Hurricane Katrina, which struck the Gulf Coast in August 2005, has had lasting and far-reaching effects. Katrina caused massive flooding in the city of New Orleans and catastrophic damage along the Gulf coasts of Alabama, Mississippi, and Louisiana. As a result, Katrina caused one of the largest and most abrupt relocations of people in U.S. history. In the months after Katrina, many evacuees returned to the areas they lived in prior to the storm, while others did not return and instead rebuilt their lives in new areas.

The decisions that evacuees make about whether to return have important implications for both the well-being of evacuees and the economic condition of the areas affected by the storm. Evacuees who decide not to return have the opportunity to restart their lives in new areas, but they may find themselves in unfamiliar labor markets and may have lost potentially important social networks and support structures. Employers in areas to which evacuees have not returned in large numbers may have lost key components of their workforces, causing declines in certain sectors of the economy. Evacuees' decisions about returning can contribute to changes in the demographic composition of the areas affected by the storm and thus may change community priorities and the cultural milieu of these areas.

At the same time as evacuees are deciding whether to return, individuals who never lived in the affected areas may decide to migrate to there. This in-migration also can affect the economic, social, and cultural environment of these areas, as well as the decisions leaders need to make about reconstruction and prioritization of locally funded projects.

This paper examines the decisions of evacuees to return to their pre-Katrina areas and documents how the composition of the Katrina-affected region has changed over time. First, we investigate the roles of demographic characteristics (such as age, race, and education), public and private services, home ownership, and hurricane damage in the decision of evacuees to return. Second, we compare the demographic composition of evacuees who returned to the composition of evacuees who did not return. We also describe the characteristics of non-evacuees who have either moved into or out of the affected areas after Katrina. Finally, we examine the characteristics of the entire resident population prior to the storm and after the storm, in terms of demographic and employment-related characteristics.

Using data from the Current Population Survey, which is representative of all Katrina evacuees and contains information about evacuees' actual decisions to return, we show that age, home ownership, and the severity of damage in an evacuee's county of origin are important determinants of whether evacuees returned. That older residents and homeowners are more likely to return is consistent with these individuals being more closely tied to an area and making decisions based on the relative cost of living in a particular area. In addition, blacks are less likely to return than whites, but this appears to be closely linked to the geographical pattern of storm damage rather than to race per se.

The demographic composition of evacuees who returned differs from that of evacuees who did not return: returnees are older and a larger percentage of returnees are white. Non-evacuees who moved into the Katrina-affected region during the post-Katrina recovery period are younger than evacuees but have a similar racial composition. Despite large differences in the demographic composition of returnees and non-returnees,

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at the aggregate level the demographic composition of the Katrina-affected region changed relatively little over time. However, changes over time in the distribution of family income were substantial. Changes over time in both family income and demographic composition are larger for the New Orleans metropolitan area than for the entire region affected by the storm.

The remainder of the paper proceeds as follows. The next section outlines a conceptual framework for understanding the decision of evacuees to return to their pre-Katrina areas and the potential role for various factors in that decision. Section 3 describes the data from the Current Population Survey that is the basis for our empirical analysis. Section 4 examines the roles of demographic characteristics, public and private services, home ownership, and hurricane damage in the decision of evacuees to return. Section 5 compares the composition of evacuees who returned with that of evacuees who did not return and examines how the composition of the entire resident population of the Katrina-affected areas changed over time in terms of demographic characteristics, family income, and employment-related characteristics.

2. Conceptual Framework

There has been a great deal of discussion of how Katrina has affected the size and demographic composition of regions in the path of the storm.[1] Despite the attention paid to these aspects of Katrina's aftermath, there have been only a few studies of the determinants of the decision of individuals to return to the areas from which they evacuated. Furthermore, these studies have concentrated on single aspects that might influence the decision to return, such as an individual's assessment of the risk of a hurricane striking an area (Baker et al. 2008), race and class (Elliott and Pais 2006), and

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[1] See, for example, Frey and Singer (2006), Frey, Singer, and Park (2007), and Liu and Plyer (2008).

the effect of the storm on an individual's ties to an area (Paxson and Rouse 2007) or sense of place (Falk, Hunt, and Hunt 2006). By contrast, in this paper we attempt to take a more comprehensive approach to the decision of evacuees to return.

In order to motivate the empirical work that follows, we present a simple conceptual model that includes a variety of factors that might influence the decision to return. This model draws heavily on standard human-capital investment models of internal (within the United States) geographic mobility (Greenwood 1975; Greenwood 1985) and international migration (Borjas 1989). However, in our model the individuals who decide whether to return did not initially migrate by choice – they were forced to evacuate. Further, the storm destroyed many aspects of individuals' lives that may have tied them to an area. Consequently, we expand and modify the standard model. One modification we make based on the forced nature of the evacuation is to incorporate the psychic costs of migrating directly into the utility that individuals would expect to obtain if they return to the area from which they evacuated, as opposed to modeling these costs separately.

Given this modeling choice and the fact that the financial costs of moving within the United States are relatively small, we model the decision to return solely as a comparison of the utility individuals receive living in one area versus another. Specifically, an individual will return if her expected discounted utility of returning is greater than the expected discounted utility of remaining in the place to which she evacuated:

$$\sum_{t=1}^{n} U_{Rt} / (1+r)^t > \sum_{t=1}^{n} U_{Nt} / (1+r)^t \, ,$$

where U_{Rt} represent the utility at time t of returning to the area from which an individual evacuated, U_{Nt} represent the utility at time t of remaining in the area to which an individual migrated, and r is the discount rate. Time runs from the period in which the decision is made $(t=1)$ to the expected end of life $(t=n)$.

Factors that influence the level of utility of living in a given area include the amount of real income an individual can expect to receive, an individual's stock of location-specific capital and the amenities associated with the area, locally produced public and private services, and what some sociologists refer to as a "sense of place" (Falk, Hunt, and Hunt, 2006). In what follows, we briefly discuss each of these factors.

Real income. In light of research of geographic mobility within the United States (Sjaastad 1962; Greenwood 1975; Borjas, Bronars, and Trejo 1992; Dahl 2002), we anticipate that regional differences in wages will heavily influence evacuees' decisions to return. However, because the evacuation was involuntary and widespread (including those in age groups for which moving is rare), the effect of such differences in wages is likely to be somewhat attenuated. The widespread nature of the evacuation also means that the focus on wages needs to be expanded to encompass other aspects of income including transfer payments (e.g., Social Security benefits and welfare payments) and the likelihood that an individual with a certain skill level can obtain suitable employment in an area. Finally, to account for regional differences in prices, the utility comparison is assumed to be based on real as opposed to nominal income. (Real income incorporates the purchasing power of a given level of nominal income in a given area.) For those receiving fixed incomes such as social security, differences in prices are the primary component of differences in expected income between places.

Location-specific capital. Location-specific capital is a generic term for factors that 'tie' someone to a particular place (DaVanzo and Morrison 1981; Paxson and Rouse 2007). This concept includes concrete assets and other features specific to a place that are more valuable to an individual in one location than in another, such as job seniority, an established clientele (as in the case of a doctor or carpenter), a license to practice a particular profession in a certain area, personal knowledge of an area, community ties, and social networks.

Ordinarily, location-specific capital would tend not to depreciate over time. However, Hurricane Katrina potentially destroyed a great deal of location-specific capital (Paxson and Rouse 2007). Consequently, an individual's decision to return depends on both her stock of location-specific capital prior to the storm and the degree to which that stock was destroyed by the storm. Moreover, that stock would deteriorate the longer she is away from her pre-Katrina location. On the flip side, her amount of location-specific capital associated with the area to which she relocated increases with the length of time that she resides in that area.

Amenities. Amenities are positive attributes associated with a specific area that cannot be influenced by an individual (Sjaastad 1962; Roback 1982; Gyourko, Kahn, and Tracy 1999; Landry et al. 2007).[2] Amenities include physical attributes such as temperature, air quality, and recreational opportunities. Amenities may also include goods and services that are differentially available across areas, such as restaurants, professional sports teams, and museums. Disamenities are negative attributes such as smog or crime. Having lived through Katrina, evacuees might consider a particular

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[2] We are modeling amenities directly in the utility function because we are assuming that amenities are not completely incorporated into wages and rents, especially considering the storm-related disequilibria in the labor market and housing market.

disamenity in their evaluation of where to live: the risk of another hurricane striking the area from which they evacuated (Baker et al. 2008).

Public and private services. The quality and amount of locally provided government services can influence where individuals decide to live, especially within specific regions or labor markets. These services include schools, libraries, parks, the transportation infrastructure (including streets and public transportation), hospitals, and public safety (including police protection and protection from flooding). Similarly, the provision and dependability of privately provided services can influence the decisions of evacuees to return. Services such as electricity, phone connections, and retail trade outlets (such as grocery stores) are usually provided in most areas; however, in the wake of Katrina this certainty was absent in many parts of the affected area.

Sense of place.   The term "sense of place" has been used by some sociologists to explain why some blacks have moved back to the south (Hummon 1990; Gieryn 2000; Falk 2004). They define "place" as a geographical unit in which one's identity is "grounded" and further argue that people usually have a place-based identity of some kind. People are, for example, "Southerners," "New Yorkers," or "Texans" even if they no longer reside in these areas. Much of the area affected by Hurricane Katrina, it could be argued, had a unique sense of place. The Gulf Coast and especially New Orleans have been known for a relaxed lifestyle. To the extent that evacuees are tied to their pre-Katrina areas by a sense of place and cannot reconstitute this elsewhere, they will want to return to these areas.

3. Data

Our empirical analysis is based on data from the Current Population Survey (CPS), a nationally representative, monthly survey of approximately 60,000 occupied housing units. The CPS was modified in the wake of Hurricane Katrina to include questions that identify Katrina evacuees, the county (or parish) from which they evacuated, and if and when these individuals returned to their pre-Katrina residences (Cahoon et al. 2006). We use the responses to these questions, which were part of the CPS from October 2005 to October 2006, in combination with demographic and economic information collected in the CPS on a regular basis. We use information on evacuees' counties of origin to merge the CPS data with data on damage from the storm, home ownership rates prior to the storm, and the availability of public and private services during the recovery.

The battery of Katrina questions opens with a question for the respondent for each household: "Is there anyone living or staying here who had to evacuate, even temporarily, where he or she was living in August because of Hurricane Katrina?" If the answer is "yes" the respondent identifies who among those listed as being at the current address is an evacuee. The respondent is then asked about the pre-Katrina location of each evacuee using the question: "In August, prior to the hurricane warning, where (was NAME/were you) living?" Pre-Katrina locations are recorded in terms of state and county, parish, or city.[3] The location of each household at the time of the interview can be obtained directly from the sample frame.[4]

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[3] For ease of exposition, in the remainder of the paper we often use the term "county" to refer to parishes in Louisiana and counties in other states.

[4] The complete set of Katrina questions is documented in Cahoon et al. (2006) and Groen and Polivka (2008a).

We define an evacuee as anyone who was identified as such in any of the months that his or her household was interviewed. In addition, to more carefully focus our analysis on those directly affected by Hurricane Katrina we require that prior to the hurricane evacuees lived in Louisiana, Mississippi, or Alabama in counties designated by the Federal Emergency Management Agency (FEMA) as eligible for both public and individual disaster assistance as a result of damages due to Hurricane Katrina. The region formed by the FEMA-designated counties is indicated by shading in Figure 1.[5]

As explained in an earlier paper (Groen and Polivka 2008a), the estimates we derive from the CPS indicate that approximately 1.5 million individuals aged 16 years and older evacuated from their homes because of Hurricane Katrina. We estimate that 75 percent of evacuees were living in Louisiana prior to the storm, 19 percent were living in Mississippi, and 6 percent were living in Alabama. Furthermore, the evacuation was widespread: the demographic composition of evacuees closely mirrors the composition of all residents of the Katrina-affected counties in these states prior to the storm.

CPS data have several advantages in examining return migration among evacuees. First, the sample of evacuees is relatively large and representative of individuals who evacuated to places throughout the entire country. Second, CPS data record whether evacuees actually returned to their pre-Katrina residences (or counties) as opposed to whether evacuees intended to return. Third, CPS data contain information about the county from which individuals evacuated. Finally, CPS data contain a myriad of demographic measures that can be used to explore the decision to return. Unfortunately, CPS data do not contain direct measures for many of the components of the utility function. Consequently, proxies for several of these components are used in our analysis.

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[5] For details on this definition of evacuees, see Groen and Polivka (2008a).

In addition, for evacuees who returned, the CPS data do not indicate the locations to which they evacuated.

4. Determinants of Return Migration

This section examines the roles of demographic characteristics, public and private services, home ownership, and hurricane damage in the decision of evacuees to return to their pre-Katrina areas. The analysis proceeds in two steps. First, we relate each characteristic separately to the probability of returning. Second, we jointly consider all of the factors within a multivariate regression model of whether evacuees returned or not.

The sample used in this analysis consists of CPS data from all 13 months (October 2005 to October 2006) covered by the evacuee questions. This sample consists of evacuees aged 19 years and older; persons aged 16 to 18 years are included in the CPS evacuee data but excluded from our analysis because their migration behavior presumably depends on their parents' decisions. This sample contains 6,095 monthly observations on 1,891 evacuees.[6] We define returning for this analysis based on whether an evacuee is living in the same county at the time of the post-Katrina CPS interview as he or she did prior to Katrina. On average over the entire 13-month period covered by the CPS data on evacuees, we estimate that about 73 percent of evacuees (aged 19 years and older) returned to their pre-Katrina counties.[7]

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[6] The CPS uses a 4-8-4 sample design in which an address is scheduled to be interviewed for 4 consecutive months, not interviewed for the next 8 consecutive months, and then interviewed again for the subsequent 4 months. Each calendar month a new group of residential addresses starts this rotation pattern. No attempts are made to interview individuals or households that move away from an address. As a result, the dataset typically contains more than one monthly observation on a given evacuee. Evacuees are observed in the CPS sample for a maximum of 5 months and for an average of 4 months. In the regression estimates, we adjust the standard errors to account for the existence of multiple observations per individual.

[7] By contrast, 65 percent of evacuees returned to their pre-Katrina residence. We use the broader definition of returning (based on county) in this paper because individuals who relocated within the same county, but who changed residences, are arguably more comparable to individuals who returned to their residences than to individuals who relocated to a different county or to a different state. Despite changing residences,

4.1 Demographic Characteristics

Although the demographic composition of evacuees reflects the composition of pre-storm residents of the Katrina-affected region, the probability of returning varies considerably by demographic group. Table 1 shows the percentage of evacuees in various demographic groups who returned to their pre-Katrina counties. Examination of these figures indicates that the probability of returning increases with age: only 59 percent of evacuees 20 to 24 years old returned to their pre-Katrina counties compared with 76 percent of evacuees 45 to 54 years old and 82 percent of evacuees aged 55 and older. This pattern is consistent with an individual's location-specific capital and sense of place increasing with age. For evacuees who are over the age of retirement, a higher probability of returning also is consistent with a relatively low cost of living in many of the areas affected by the storm. Lower costs of living would make returning more attractive for those receiving Social Security payments and other forms of fixed pension payments because the purchasing power of these payments would be higher.

The estimates in Table 1 also indicate that blacks, unmarried individuals, and those with lower levels of education were much less likely to return than were individuals in other racial, marital, or educational groups. Specifically, only 54 percent of black evacuees returned to their pre-Katrina counties, compared with 82 percent of white evacuees. Only 67 percent of unmarried evacuees returned, compared with 78 percent of married evacuees. The differences among educational groups are somewhat less stark, but the estimates indicate that evacuees without a high school diploma were less likely to return than were those with more education: only 66 percent of evacuees without a high

relocating within the same county usually allows one to maintain social ties and employment opportunities. Further, the broader definition of returning is more appropriate from the perspective of local leaders and planners.

school diploma returned, while 74 percent of evacuees with a high school diploma (as their highest degree) returned and 73 percent of evacuees with a college degree returned.

4.2 Public and Private Services

For evacuees who lived in the New Orleans metropolitan area before the storm, we are able to link the CPS data to measures of services available during the recovery. As part of its "Katrina Index," the Brookings Institution collected information on the proportion of various types of facilities that were in operation at particular points in time in particular parishes (Liu, Fellowes, and Mabanta 2006).[8] We use their measures for public schools, public libraries, major hospitals, and child care centers as of February 2006. As shown in Figure 2, for each type of facility there is a positive relationship between the percentage of evacuees who returned and the proportion of facilities in operation. This pattern suggests that public and private services are important factors in the decision to return. However, other interpretations are possible since causation may also run the other way – residents may choose to return for other reasons and create demand for these facilities to open.

4.3 Housing Damage

Data on the physical damage to local areas caused by the hurricane is desirable because it speaks more directly to the housing and employment situations of evacuees and because damages are clearly exogenous to the decisions of evacuees to return after the hurricane. We link the CPS data to county-level measures of damage using data from FEMA on damages to real property and personal property not covered by insurance. These estimates of housing damage were based on direct inspection of housing units to

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[8] The publication containing these data series is now called "The New Orleans Index" and is co-published by the Brookings Institution and the Greater New Orleans Community Data Center; see, for example, Liu and Plyer (2008).

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determine eligibility for FEMA housing assistance.[9] Analysts at the U.S. Department of Housing and Urban Development categorized the inspection results into three categories: minor damage (less than $5,200), major damage (between $5,200 and $30,000), and severe damage (greater than or equal to $30,000). These data are extremely comprehensive and cover the entire set of 42 counties represented in our CPS data.

We divided the number of housing units in each damage category by the total number of housing units in a county before Katrina (according to the 2000 Census) to compute the percentage of housing units in the county that are in each damage category. The scatter plots in Figure 3 indicate a negative relationship between the percentage of evacuees who returned to a county and the percentage of housing units in the county with damage. This relationship is strongest when damage is measured as the percentage with severe damage; as the measure of damage is expanded to include major or minor damage, the relationship weakens (but remains negative). This pattern suggests that severe damage is the type of damage that matters most to the decision to return.

More generally, we interpret these measures of housing damage as reflecting the overall physical impact of the storm. Counties with extensive housing damage are also likely to contain damage to businesses, schools, and transportation systems. As a result, evacuees who came from such counties are less likely to return even if some of these evacuees did not personally experience severe damage to their homes.

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[9] U.S. Department of Housing and Urban Development (2006). Due to flooding in some areas (primarily the New Orleans metropolitan area) direct inspection was not feasible and the level of damage was estimated based on the depth of flooding in the area. A potential disadvantage is these data is that they are based on damages from Hurricane Rita as well as from Hurricane Katrina. However, we find similar relationship between damage and returning using a different source of damage data that reflects only damages from Hurricane Katrina, but is available for only 12 counties.

4.4 Home Ownership

People who own their home often have stronger ties to their communities than do people who rent their homes; thus, home ownership is considered a signal of location-specific capital. As a result, we expect that evacuees who owned their homes prior to Katrina would be more likely to return compared with evacuees who rented their homes.

Ideally, we would measure home ownership at the individual level. Unfortunately, CPS data on evacuees, which was collected after the storm, contains incomplete information on whether evacuees owned their homes prior to Katrina. The CPS asks respondents whether they own the homes in which they are living at the time of the interview; therefore, data on pre-Katrina ownership is available only for evacuees who returned to their pre-Katrina residences. Among these evacuees, an estimated 84 percent owned their homes, which is greater than the home-ownership rate of 78 percent among all residents of Katrina-affected areas prior to the storm (January 2004–July 2005). This comparison suggests that returnees are disproportionately homeowners compared with non-returnees.

For a more complete measure of pre-Katrina home ownership, we use data from the 2000 Census to construct the rate of home ownership in each county from which evacuees originated. Figure 4 shows that a higher rate of home ownership in a county is associated with a larger percentage of evacuees returning to the county. This relationship might reflect, in addition to location-specific capital, the simple fact that it is easier to rebuild a home that you own than to induce someone else to rebuild a place that you rent.

4.5 Multivariate Analysis

The preceding analysis identifies several factors that might explain evacuees' decision to return to their pre-Katrina areas. However, several of the characteristics likely are related to one another. (For instance, younger evacuees are less likely to be married than are middle-aged evacuees. In addition, the racial composition of evacuees varies by county of origin and thus might be related to housing damage.) To account for these inter-relationships, we estimate logit models in which the dependent variable is an indicator for whether an evacuee returned to his or her pre-Katrina county.

We first consider a specification that includes only demographic characteristics as explanatory variables. The first column of Table 2 reports estimated marginal effects of these characteristics on the probability of returning. These estimates highlight the roles of age and race as determinants of returning. Younger evacuees are less likely to return than are older evacuees. Black evacuees are much less likely to return than are white evacuees, with the point estimate reflecting a difference of 25 percentage points.

Adding housing damage and home ownership to the set of explanatory variables does not affect age differences but dramatically reduces racial differences in returning (column 2 of Table 2): the estimated difference in returning between black and white evacuees falls from 25 percentage points to 8 percentage points. This change suggests that blacks were more likely to live in areas that suffered severe damage because of the storm, and to a large extent it is differences in the amount of damage rather than race per se that influences return migration. Indeed, the raw correlation at the county level between the percentage of residents who are black and the percentage of housing units with severe damage is 0.63. This correlation reflects the contrast between Orleans Parish

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(high damage and high percentage black) and the rest of the affected counties; when Orleans is excluded, the correlation is -0.11.

Damage appears to exert a strong influence on returning even when personal characteristics are held constant: an increase of 10 percentage points in the percentage of housing units in a county with severe damage is associated with a decrease of 7.7 percentage points in the probability of an evacuee returning. The marginal effect of home ownership on returning is positive (as expected) but the magnitude of the effect is small. The small magnitude, which is surprising given the relationship in Figure 4, appears to be due to the correlation (across counties) between damage and home ownership. Excluding the damage variable from the specification in column (2) increases the marginal effect of home ownership substantially.

As shown in Figure 5, there is a negative correlation at the county level between damage and home ownership. This correlation reflects the contrast between Orleans Parish (high damage and low home-ownership) and the rest of the affected counties.[10] Given that Orleans Parish is an outlier in many dimensions (damage, home ownership, and racial composition) and that evacuees from Orleans Parish constitute about 20 percent of the sample, we drop these evacuees from the sample for columns (3) and (4) of Table 2. Among evacuees originating in counties other than Orleans Parish, both damage and home ownership affect returning. An increase of 10 percentage points in the rate of home ownership in a county before the storm is associated with an increase of 7.2 percentage points in the probability of an evacuee returning.

Since the level of location-specific capital (associated with evacuees' home areas) after the storm depends on both the pre-storm stock of location-specific capital and the

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[10] Orleans Parish is represented by the big circle in the upper left of the scatter plot in Figure 5.

degree to which that stock was destroyed in the storm, the pre-storm stock may not influence the return behavior of evacuees who experienced high levels of damage (Paxson and Rouse 2007). To examine this hypothesis, we split the sample of evacuees into those from high-damage areas and those from low-damage areas.[11] Taking home ownership as a signal of location-specific capital, the estimated marginal effects shown in Table 3 are consistent with the hypothesis: home ownership does not influence returning to high-damage areas but encourages returning to low-damage areas.

The effects of several demographic characteristics on returning are different among evacuees from high-damage areas than among those from low-damage areas. Among evacuees from high-damage areas, evacuees with children are less likely to return than evacuees without children; among evacuees from low-damage areas, by contrast, there is no difference between these groups in the probability of returning. The impact of children on returning to high-damage areas might reflect the fact that public schools in many of these areas were closed for many months after the storm.

Racial differences in returning are larger among evacuees from high-damage areas than among those from low-damage areas. Black evacuees from high-damage counties are 19 percentage points less likely to return than are white evacuees from these counties. This difference appears to be driven by racial differences among evacuees from Orleans Parish, which is 80 percent of the high-damage sample.[12] In turn, the pattern of damages across neighborhoods in Orleans Parish might give rise to such racial

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[11] High-damage areas are counties in which at least 20 percent of the housing units experienced severe damage: Orleans, St. Bernard, Plaquemines, and Cameron parishes in Louisiana and Hancock County in Mississippi.

[12] By contrast, these differences do not appear to reflect differences in damage across counties within the high-damage sample: when the damage variable is included in the specification in column (2), the racial differences do not change. Furthermore, when the specification in column (1) is estimated on the sample of evacuees from Orleans Parish, the estimated marginal effects are very similar to those reported in column (2) for evacuees from all high-damage areas.

differences if the neighborhoods in which blacks were concentrated experienced greater damage than neighborhoods in which whites were concentrated. Such racial differences in returning might also reflect differences in wealth (and thus the ability to rebuild homes damaged by the storm) between black and white evacuees.

Differences in returning by education group among evacuees from high-damage areas are of an opposite pattern than the differences among those from low-damage areas. Compared with high school graduates, college graduates from high-damage areas are more likely to return, but college graduates from low-damage areas are less likely to return. These differences in high-damage areas might be explained by the same factors that explain racial differences in these areas. In addition, evacuees with higher levels of education might have accumulated a greater stock of location-specific human capital prior to the storm (for example, lawyers with an established clientele).

Older evacuees are more likely than younger evacuees to return to both high-damage and low-damage areas, but these age differences are greater in high-damage areas. The conceptual framework outlined in Section 2 suggests several reasons why older evacuees are more likely to return. At the time of the storm, older evacuees may have lived in their neighborhoods longer and thus may have accumulated a greater stock of location-specific capital prior to the storm. In addition, they may have a greater sense of place and a shorter time horizon over which to establish themselves in a new area. Finally, since older individuals are more likely to be on fixed incomes (due to receiving Social Security benefits), older evacuees may prefer to live in low-cost areas – including many of the areas affected by Katrina.

5. Changes in Affected Areas

5.1 Characteristics of Migrating Groups

At the macro level, migration is one of the three components of population change, along with births and deaths. In the case of Katrina, migration is likely to be the main component of population change for the geographic areas directly affected by the storm. In this section we characterize the size and demographic composition of four migration flows. Two of these flows are Katrina evacuees who returned or did not return to their pre-Katrina counties. The other flows are non-evacuees (individuals not classified as evacuees) who moved into or out of the Katrina-affected region in the months after the hurricane.

Since the probability of evacuees returning varies by demographic group, the demographic composition of evacuees who returned differs from that of evacuees who did not return. As shown in Table 4, 69 percent of returnees are white compared with only 40 percent of non-returnees. By contrast, only 24 percent of returnees are black compared with 53 percent of non-returnees. Returnees as a group are older than non-returnees; for instance, 34 percent of returnees are 55 years old or older compared with only 20 percent of non-returnees.[13] Table 4 also indicates differences in the demographic distribution of returnees and non-returnees by education, marital status, and the presence of children.[14]

Information on the family incomes of evacuees in 2005 is available for evacuees who completed the 2006 CPS Annual Social and Economic (ASEC) Supplement (about

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[13] The median age of returnees is 46 compared with 37 for non-returnees.

[14] These differences reflect, to some extent, the different age distributions of the groups. Looking only at evacuees aged 30 to 55 years, the differences between returnees and non-returnees are somewhat smaller than in the full sample for marital status and presence of children; for education, the differences are about the same as in the full sample.

10 percent of the evacuees in our sample). This measure of income covers calendar year 2005, which includes 8 months before Katrina and 4 months after Katrina. Non-returnees had lower incomes than returnees; for instance, 42 percent of non-returnees had incomes less than $25,000, compared with only 27 percent of returnees.[15]

The demographic composition of non-evacuees who moved into or out of the Katrina-affected region, also shown in Table 4, is for those who completed the 2006 ASEC Supplement, which covers moves over the one-year period from March 2005 to March 2006. These data do not indicate the precise timing of moves and therefore the moves may have taken place before or after Katrina, which struck in late August 2005. Among these groups of non-evacuees, in-migrants are younger, less likely to be married, and less likely to have children than are out-migrants. Compared with evacuees (returnees and non-returnees combined), in-migrants are younger, have a similar racial composition, are less likely to be married, and are less likely to have children.

The relative size of these four migrating groups indicates the relative importance of each group to aggregate population change. The number of evacuees is much larger than the number of migrating non-evacuees. Non-evacuees who moved into or out of the Katrina-affected region are each around 85,000 individuals (aged 19 years and older), whereas returning evacuees are about 1.0 million and non-returning evacuees are about 380,000. Thus, demographic changes in the overall population of the Katrina-affected areas depend much more on the migration patterns among evacuees than on those among non-evacuees. Taken together, the sizes of the four migrating groups imply a decline of about 375,000 individuals (through October 2006) in the population of the Katrina-

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[15] The median income of non-returnees is $28,000 compared with $45,000 for returnees.

affected region, a decline of 9.1 percent relative to population figures from the 2000 Census.

5.2 Characteristics of Affected Areas Before and After Katrina

Differences in the demographic composition of returning and non-returning evacuees suggest that Katrina may have altered the demographic and economic composition of the geographic areas in the storm paths. Table 5 contains distributions of the demographic characteristics of residents of the Katrina-affected areas, both prior to the storm and after the storm. The estimates are based on CPS data and cover one time period before the storm (January 2004–July 2005) and two periods after the storm (October 2005–October 2006 and November 2006–November 2007). Estimates are presented separately for the entire affected area (see Figure 1) and for the New Orleans MSA.

For the entire affected area, changes over time in demographic composition are relatively modest, despite large differences between the composition of returning and non-returning evacuees. For example, even though a much larger proportion of non-returnees are black, the proportion of residents of the entire affected area who are black decreased by only a small amount. A potential explanation for these modest shifts at the macro level is that the size of the migrating groups are small relative to the number of people who resided in the Katrina-affected region throughout the period before and after the storm. According to data from the 2006 ASEC Supplement, about 2.8 million non-evacuees lived in the region in both March 2005 and March 2006 (either remaining in the same residence or moving within the region). (The demographic composition of these individuals is shown in the last column of Table 4.) The number of these individuals is

large relative to the net migration out of the Katrina-affected region of about 375,000. Thus, the changes brought about by evacuation and returning, while substantial, are relatively small at the macro level.

Consistent with this explanation, the changes in demographic composition at the macro level are generally larger for the New Orleans MSA, for which evacuees represent a larger percentage of the pre-storm population (92 percent) than in the affected region as a whole (30 percent) (Groen and Polivka 2008b). For example, the proportion of residents of the New Orleans MSA who are black decreased from 32 percent before the storm to 21 percent in the year after the storm before rebounding to 25 percent the following year.

The distribution of family income shifted substantially over this time period in both the New Orleans MSA and in the affected area as a whole. The percentage of residents of the entire affected area with incomes less than $10,000 a year decreased from 12.7 percent to 10.0 percent and the percentage with incomes of $100,000 or more increased from 8.7 percent to 13.2 percent. The income distribution shifted even more dramatically in the New Orleans MSA. The percentage of the New Orleans MSA with incomes less than $10,000 a year decreased from 11.9 percent to 6.3 percent and the percentage with incomes of $100,000 or more increased from 10.8 percent to 16.1 percent.[16]

The home-ownership rate decreased among all residents of the affected area but increased among residents of the New Orleans MSA. The changes for the New Orleans MSA are in the expected direction (since rebuilding has been more likely for

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[16] For the New Orleans MSA, trends in the distribution of income observed in the CPS are consistent with trends observed in data from the American Community Survey (Frey and Singer 2007).

homeowners) but smaller in magnitude than might be expected given reports of shortages in rental housing after the storm. However, for Orleans Parish (which includes the city of New Orleans but not its suburbs), the changes over time are larger: the home-ownership rate increased from 57 percent before the storm to 70 percent in the year after the storm, before falling back to 59 percent in the following year.

The shift in the distribution of family income may reflect the degree of property damage caused by Katrina and consequently differences in the ability of evacuees to return. The shift might also reflect differences in the ability of individuals with specific skills to find employment in their lines of work. The proportion of workers in various industries and occupations before and after the storm reflects the effect of the storm on the economic bases of these areas. Table 6 presents these estimates separately for the entire affected area and the New Orleans MSA.

In the New Orleans MSA, the share of the workforce employed in government declined from 16.0 percent before the storm to 12.6 percent in the year after the storm. This shift appears to reflect changes in the share of workers employed by the federal government or by local governments, rather than the share employed by state governments.

The proportion of the workforce employed in construction increased after the storm, as would be anticipated given the substantial physical damages and associated rebuilding. Conversely, the proportion of the workforce employed in the educational and health services sector decreased after the storm. Probably reflective of this industrial shift, the proportion of the workforce employed in construction and extraction

occupations increased after the storm. By contrast, the proportion of the workforce employed in professional occupations decreased after the storm.

6. Conclusions

In the aftermath of Hurricane Katrina, the people and economies of the affected region needed to rebuild. An important influence on this reconstruction and healing process was the decision of evacuees about whether to return. Using data from the Current Population Survey, which is representative of all evacuees and covers all areas affected by the storm, we establish that age, the extent of damage, and home ownership were important determinants of whether an evacuee returned. The probability of returning increases with age, decreases with the severity of damage in an evacuee's county of origin, and increases with the pre-Katrina home-ownership rate in the evacuee's county of origin.

In addition, black evacuees were less likely to return than white evacuees. This racial difference in returning reflects, to some extent, that black evacuees disproportionately came from counties that were more heavily damaged – especially Orleans Parish (the city of New Orleans). The racial differences in returning also reflect differences between black and white evacuees who came from Orleans Parish.

Within heavily damaged areas, evacuees with children were less likely to return than were evacuees without children. In addition, for evacuees who originated in the New Orleans metropolitan area, a larger percentage of evacuees returned to parishes in which a larger proportion of public schools, public libraries, major hospitals, and child care facilities were in operation after the storm. It is impossible to determine from these relationships whether more of these facilities were open because more evacuees had

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already returned to a parish, or if the availability of these facilities encouraged evacuees to return, or both. Nevertheless, the results do suggest that local officials should be cognizant of demand for public services when prioritizing reconstruction projects and directing public funds in the wake of a disaster.

Large differences in the demographic composition of returning and non-returning evacuees suggest that Katrina might have significantly altered the demographic and economic composition of areas in the path of the storm. Consequently, it is somewhat surprising that for the entire affected area, the demographic composition of the population changed only modestly. A potential explanation of this modest shift is that in the vast majority of areas affected by the storm, evacuees made up a relatively small proportion of the pre-storm population. Areas in which evacuees constituted a larger percentage of the pre-storm population did indeed experience greater shifts in demographic composition. For example, in the New Orleans MSA the proportion of residents who were black decreased from 32 percent before the storm to 21 percent in the year after the storm before rebounding to 25 percent two years after Katrina struck. Interestingly, even though the age, gender, and racial profile of the entire affected area did not change very much, both the family income and level of educational attainment appear to have increased substantially.

Overall, the results presented in this paper indicate that in the wake of Katrina there were sharp differences between those who returned and those who did not. These differences have important implications not only for the individuals and areas affected by this particular storm but also for those responsible for managing recoveries from future natural disasters. When formulating expectations about who will return after a natural

disaster, our results suggest that the proportion of residents of the affected area who own their homes, the age of these residents, and their needs for public services all should be considered. The results also suggest that disasters may increase the overall levels of family income and educational attainment in the affected areas – in other words, these areas may lose some of their more disadvantaged residents.

References

Baker, Justin, W. Douglass Shaw, David Bell, Sam Brody, Mary Riddel, Richard Woodward, and William Neilson. 2008. "Explaining Subjective Risks of Hurricanes and the Role of Risks in Intended Moving and Location Choice Models." Working Paper, Texas A&M University.

Borjas, George J. 1989. "Economic Theory and International Migration." *International Migration Review* 23 (3): 457-485.

Borjas, Geroge J., Stephen G. Bronars, and Stephen J. Trejo. 1992. "Assimilation and the Earnings of Young Internal Migrants." *Review of Economics and Statistics* 74 (1): 170-175.

Cahoon, Lawrence S., Diane E. Herz, Richard C. Ning, Anne E. Polivka, Maria E. Reed, Edwin L. Robison, and Gregory D. Weyland. 2006. "The Current Population Survey Response to Hurricane Katrina." *Monthly Labor Review* 129 (8): 40-51.

Dahl, Gordon B. 2002. "Mobility and the Return to Education: Testing a Roy Model with Multiple Markets." *Econometrica* 70 (6): 2367-2420.

DaVanzo, Julie S. and Peter A. Morrison. 1981. "Return and Other Sequences of Migration in the United States." *Demography* 18 (1): 85-101.

Dolfman, Michael L., Solidelle F. Wasser, and Bruce Bergman. 2007. "The Effects of Hurricane Katrina on the New Orleans Economy." *Monthly Labor Review* 130 (6): 3-18.

Elliott, James R. and Jeremy Pais. 2006. "Race, Class, and Hurricane Katrina: Social Differences in Human Responses to Disaster." *Social Science Research* 35 (2): 295-321.

Falk, William W. 2004. *Rooted in Place: Family and Belonging in a Southern Black Community*. New Brunswick, NJ: Rutgers University Press.

Falk, William W., Matthew O. Hunt, and Larry L. Hunt. 2006. "Hurricane Katrina and New Orleanians' Sense of Place: Return and Reconstitution or 'Gone with the Wind'?" *Du Bois Review* 3 (1): 115-128.

Frey, William H. and Audrey Singer. 2006. "Katrina and Rita Impacts on Gulf Coast Populations: First Census Findings." Washington, DC: Brookings Institution.

Frey, William H., Audrey Singer, and David Park. 2007. "Resettling New Orleans: The First Full Picture from the Census." Washington, DC: Brookings Institution.

Gieryn, Thomas. 2000. "A Space for Place in Sociology." *Annual Review of Sociology* 26: 463-496.
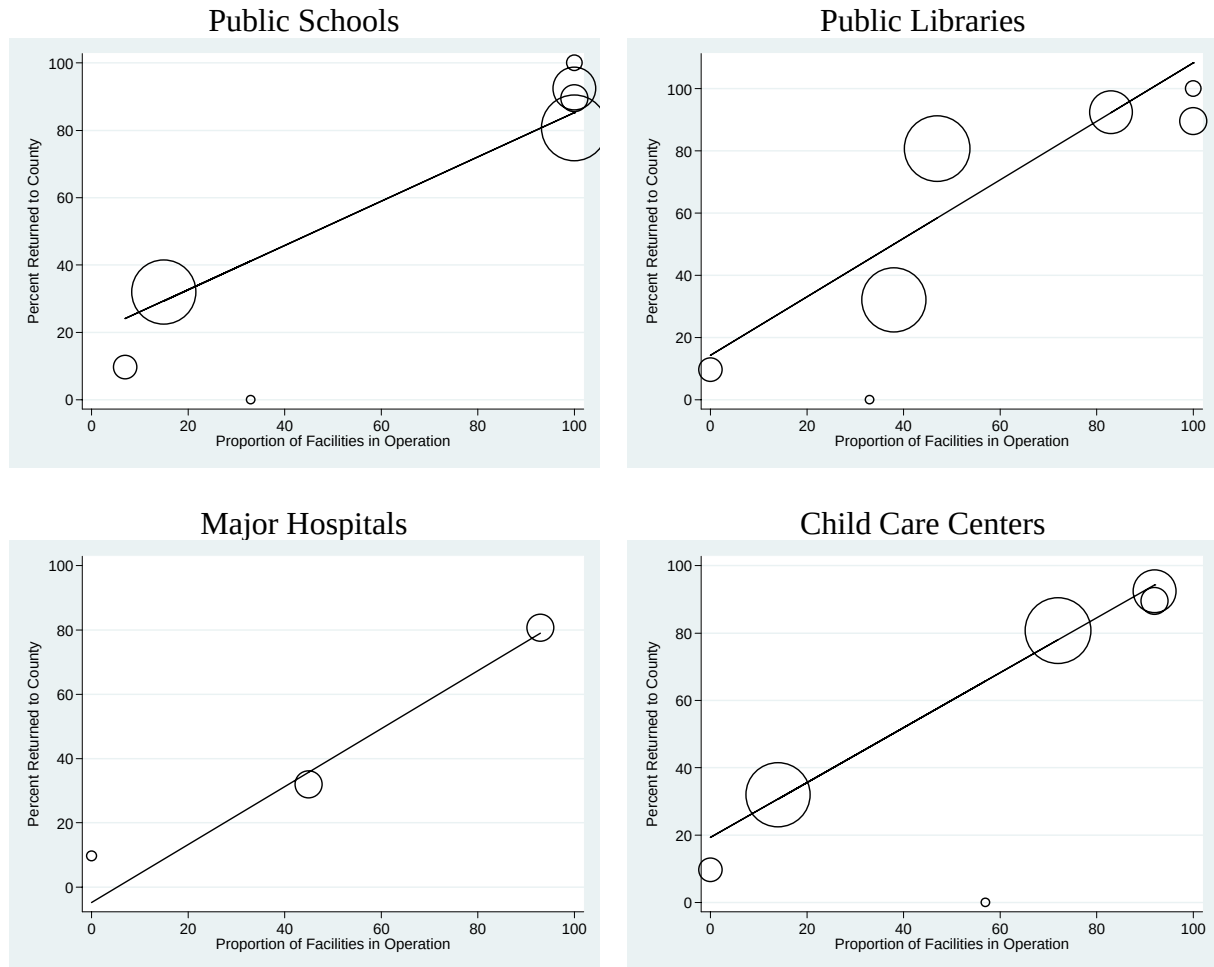
Greenwood, Michael J. 1975. "Research on Internal Migration in the United States: A Survey." *Journal of Economic Literature* 13 (2): 397-433.

Greenwood, Michael J. 1985. "Human Migration: Theory, Models, and Empirical Studies." *Journal of Regional Science* 25 (4): 521-544.

Groen, Jeffrey A., and Anne E. Polivka. 2008a. "Hurricane Katrina Evacuees: Who They Are, Where They Are, and How They Are Faring." *Monthly Labor Review* 131 (3): 32-51. http://www.bls.gov/opub/mlr/2008/03/art3full.pdf.

Groen, Jeffrey A., and Anne E. Polivka. 2008b. "The Effect of Hurricane Katrina on the Labor Market Outcomes of Evacuees." Bureau of Labor Statistics Working Paper 415. http://www.bls.gov/ore/pdf/ec080010.pdf.

Gyourko, Joseph, Matthew Kahn, and Joseph Tracy. 1999. "Quality of Life and Environmental Comparisons." In: *Handbook Regional and Urban Economics*, vol. 3, edited by Paul Cheshire and Edwin S. Mills. Amsterdam: Elsevier Science, pp. 1413-1454.

Hummon, David M. 1990. *Commonplaces: Community Ideology and Identity in American Culture*. Albany, NY: State University of New York Press.

Landry, Craig E., Okmyung Bin, Paul Hindsley, John C. Whitehead, and Kenneth Wilson. 2007. "Going Home: Evacuation-Migration Decisions of Hurricane Katrina Survivors." *Southern Economic Journal* 74 (2): 326-343.

Liu, Amy, Matt Fellowes, and Mia Mabanta. 2006. "Katrina Index: Tracking Variables of Post-Katrina Recovery." Washington, DC: Brookings Institution. August 8.

Liu, Amy and Allison Plyer. 2008. "The New Orleans Index: Tracking Recovery of New Orleans and the Metro Area." Brookings Institution and Greater New Orleans Community Data Center. January 15.

Paxson, Christina and Cecilia E. Rouse. 2007. "Returning to New Orleans after Hurricane Katrina." Paper presented at the 2008 annual meeting of the American Economic Association, New Orleans. Forthcoming in *American Economic Review*.

Roback, Jennifer. 1982. "Wages, Rents and the Quality of Life." *Journal of Political Economy* 90 (6): 1257-1278.

Sjaastad, Larry A. 1962. "The Costs and Returns of Human Migration." *Journal of Political Economy* 70 (5, part 2): 80-93.

U.S. Department of Housing and Urban Development. 2006. "Current Housing Unit Damage Estimates: Hurricanes Katrina, Rita, and Wilma." Office of Policy Development and Research. February 12.

Figure 1.
Counties Eligible for Individual and Public Assistance from FEMA for Hurricane Katrina

Notes: Shading indicates eligible counties based on FEMA disaster declarations for Hurricane Katrina through October 7, 2005. The set of eligible counties includes 31 parishes in Louisiana, 49 counties in Mississippi, and 11 counties in Alabama.
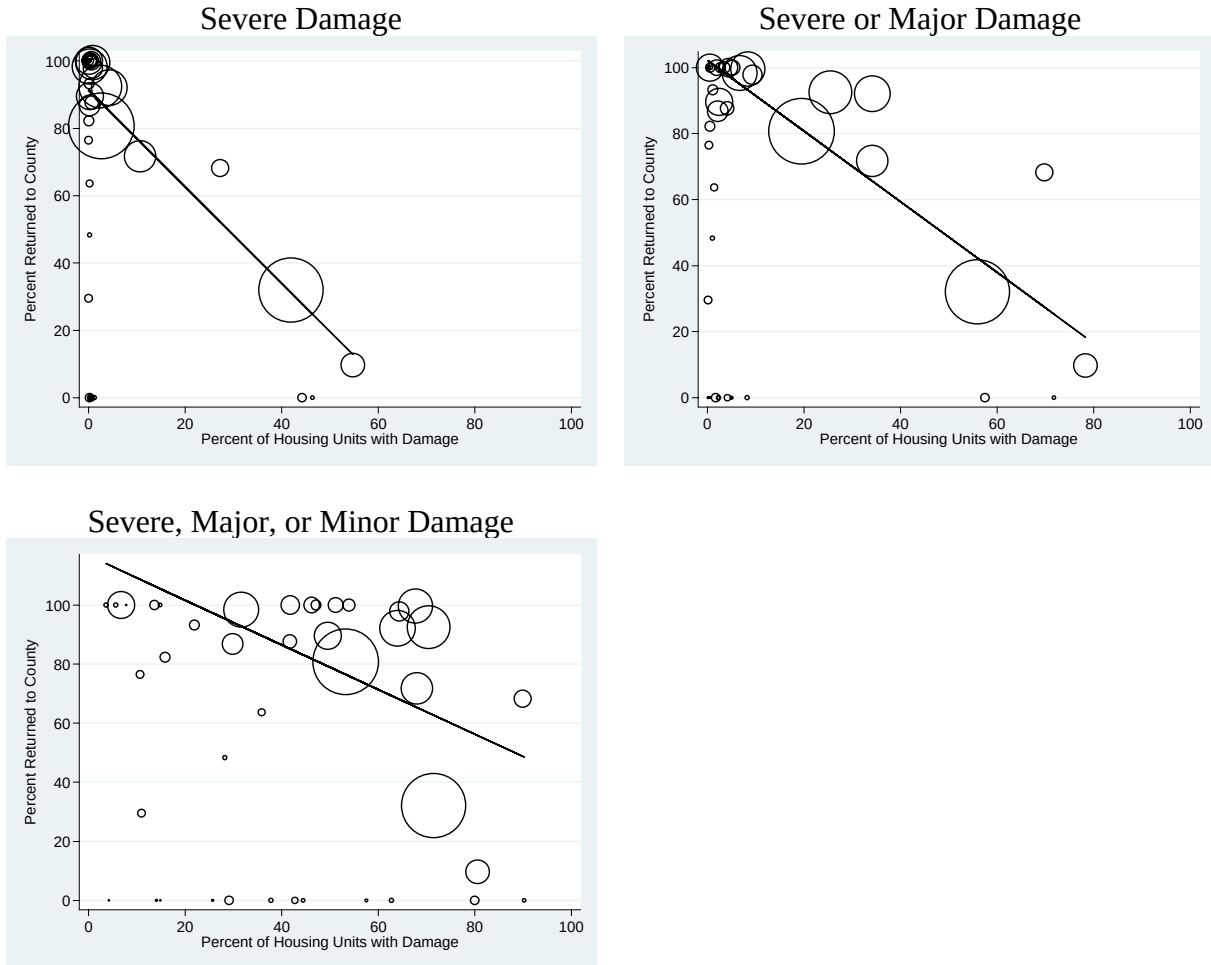
Figure 2.
Public and Private Services and Returning

Notes: The area of each symbol is proportional to the number of evacuees in the county. The regression line is estimated by weighted least squares with the number of evacuees in each county as weights. Each data point refers to one of the seven parishes in the New Orleans metropolitan area (Jefferson, Orleans, Placquemines, St. Bernard, St. Charles, St. John the Baptist, and St. Tammany).

Source: Returning measure is based on Current Population Survey, October 2005–October 2006. Services data are from Liu, Fellowes, and Mabanta (2006), Tables 28, 32, 33, and 34. Timing of services data: schools, February 2, 2006; libraries, February 2006; hospitals, February 14, 2006; child care, February 2006.
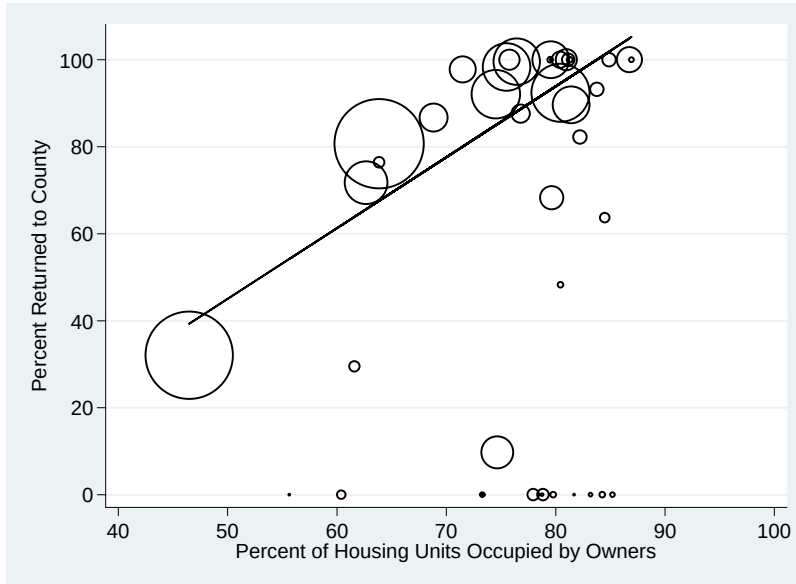
Figure 3.
Housing Damage and Returning

Severe Damage

Severe or Major Damage

Severe, Major, or Minor Damage

Notes: The area of each symbol is proportional to the number of evacuees in the county. The regression line is estimated by weighted least squares with the number of evacuees in each county as weights. The data in the figures cover 42 counties, including 19 in Louisiana, 20 in Mississippi, and 3 in Alabama.

Source: Returning measure is based on Current Population Survey, October 2005–October 2006. Damage data are from U.S. Department of Housing and Urban Development (2006).
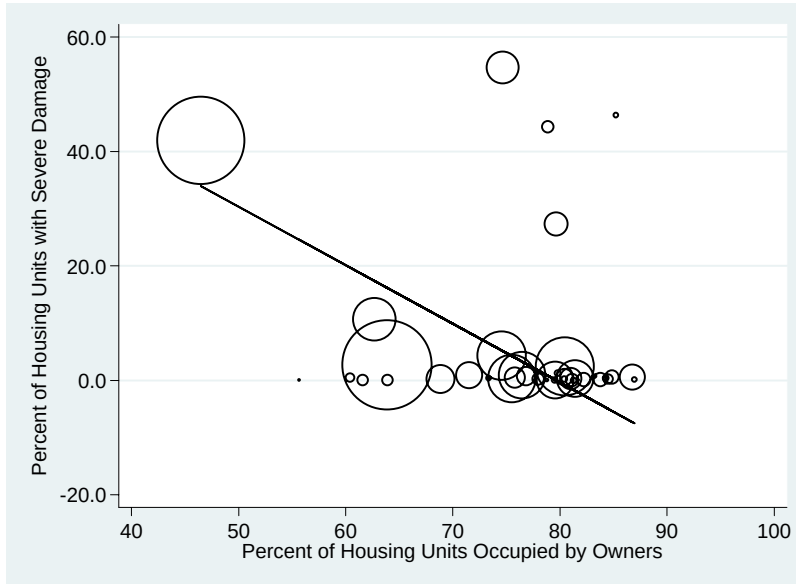
Figure 4.
Home Ownership and Returning

Notes: The area of each symbol is proportional to the number of evacuees in the county. The regression line is estimated by weighted least squares with the number of evacuees in each county as weights. The data in the figures cover 42 counties, including 19 in Louisiana, 20 in Mississippi, and 3 in Alabama.

Source: Returning measure is based on Current Population Survey, October 2005–October 2006. Home-ownership rates are based on data from the 2000 Census (Summary File 3).

Figure 5
Housing Damage and Home Ownership

Notes: The area of each symbol is proportional to the number of evacuees in the county. The regression line is estimated by weighted least squares with the number of evacuees in each county as weights. The data in the figures cover 42 counties, including 19 in Louisiana, 20 in Mississippi, and 3 in Alabama.

Source: Home-ownership rates are based on data from the 2000 Census (Summary File 3). The damage measure is based on data from U.S. Department of Housing and Urban Development (2006).

Table 1.

Percentage Returned to Pre-Katrina County, by Demographic Characteristics

	Percentage Returned	N
Age		
19 to 24	59.4	764
25 to 39	65.8	1,567
40 to 54	75.9	1,798
55 and over	81.8	1,966
Race/Ethnicity		
White[a]	82.1	3,804
Black[a]	54.3	1,889
Hispanic	71.0	200
Other[a]	73.4	202
Gender		
Female	71.1	3,482
Male	74.4	2,613
Education		
Less than high school	66.0	1,023
High school	74.3	2,172
Some college	73.9	1,715
College graduate	73.3	1,185
Marital Status		
Not married	67.2	2,992
Married	78.1	3,103
Children Under Age 18		
Without children	74.0	4,286
With children	69.3	1,809
Total	72.6	6,095

Source: Current Population Survey, October 2005–October 2006.

[a] Non-Hispanic

Table 2.
Determinants of Returning to Pre-Katrina County

	Full Sample		Without Orleans Parish	
	(1)	(2)	(3)	(4)
Age 25 to 39	0.028	0.037*	0.024	0.029
	(0.033)	(0.016)	(0.028)	(0.018)
Age 40 to 54	0.102*	0.111*	0.086*	0.096*
	(0.031)	(0.019)	(0.027)	(0.018)
Age 55 and over	0.155*	0.148*	0.119*	0.105*
	(0.031)	(0.030)	(0.026)	(0.027)
Black[a]	-0.254*	-0.078	-0.041	-0.058
	(0.027)	(0.045)	(0.024)	(0.049)
Hispanic	-0.077	-0.069	-0.038	-0.033
	(0.062)	(0.053)	(0.056)	(0.040)
Other[a]	-0.061	-0.045	0.031	0.013
	(0.063)	(0.062)	(0.042)	(0.040)
Male	0.030	0.040*	0.030	0.030*
	(0.021)	(0.011)	(0.019)	(0.011)
Less than high school	-0.058	0.001	-0.017	0.011
	(0.032)	(0.011)	(0.030)	(0.014)
Some college	-0.009	0.018	-0.003	0.001
	(0.026)	(0.018)	(0.024)	(0.014)
College graduate	-0.090*	-0.017	-0.080*	-0.076*
	(0.033)	(0.053)	(0.032)	(0.024)
Married	0.019	-0.010	0.021	0.010
	(0.024)	(0.023)	(0.022)	(0.026)
With children	-0.001	-0.048*	-0.033	-0.038
	(0.027)	(0.019)	(0.025)	(0.021)
Severe damage (%)		-0.0077*		-0.0094*
		(0.0012)		(0.0006)
Owner-occupied (%)		0.0023		0.0072*
		(0.0021)		(0.0014)
N	6,020	6,020	4,884	4,884
Mean of dep. var.	0.734	0.734	0.842	0.842

Notes: The dependent variable is a dummy variable for returning to the pre-Katrina county. The numbers reported in the table are average marginal effects from logit models. Standard errors corrected for correlation in the error term at the person level (column 1 and 3) or at the county level (columns 2 and 4) are reported in parentheses. Regressions are estimated using CPS sampling weights.

[a] Non-Hispanic
* Significantly different from zero at the 5% level

Table 3.
Determinants of Returning to Pre-Katrina County (High vs. Low Damage Areas)

	High Damage		Low Damage	
	(1)	(2)	(3)	(4)
Age 25 to 39	0.082	0.077	0.024	0.024
	(0.085)	(0.015)	(0.025)	(0.016)
Age 40 to 54	0.213*	0.215*	0.085*	0.088*
	(0.078)	(0.004)	(0.023)	(0.016)
Age 55 and over	0.295*	0.299*	0.109*	0.106*
	(0.084)	(0.025)	(0.023)	(0.022)
Black[a]	-0.137*	-0.190*	-0.064*	-0.062
	(0.048)	(0.024)	(0.023)	(0.048)
Hispanic	-0.086	-0.108	-0.065	-0.039
	(0.118)	(0.065)	(0.059)	(0.039)
Other[a]	-0.291*	-0.297*	0.035	0.032
	(0.036)	(0.025)	(0.035)	(0.047)
Male	0.061	0.061*	0.027	0.029*
	(0.043)	(0.011)	(0.017)	(0.011)
Less than high school	0.028	0.020	0.009	0.008
	(0.062)	(0.005)	(0.026)	(0.015)
Some college	0.122*	0.110*	-0.011	-0.006
	(0.056)	(0.030)	(0.022)	(0.016)
College graduate	0.180*	0.140*	-0.097*	-0.082*
	(0.068)	(0.008)	(0.031)	(0.025)
Married	-0.018	-0.012	-0.001	-0.002
	(0.048)	(0.090)	(0.020)	(0.022)
With children	-0.145*	-0.133*	-0.021	-0.032
	(0.053)	(0.039)	(0.023)	(0.019)
Owner-occupied (%)		-0.0043		0.0093*
		(0.0044)		(0.0015)
N	1,422	1,422	4,598	4,598
Mean of dep. var.	0.310	0.310	0.877	0.877

Notes: The dependent variable is a dummy variable for returning to the pre-Katrina county. The high-damage sample is evacuees who came from counties with at least 20 percent its housing units having severe damage. The numbers reported in the table are average marginal effects from logit models. Standard errors corrected for correlation in the error term at the person level (column 1 and 3) or at the county level (columns 2 and 4) are reported in parentheses. Regressions are estimated using CPS sampling weights.

[a] Non-Hispanic
* Significantly different from zero at the 5% level

Table 4.
Personal and Economic Characteristics of Migrating and Non-Migrating Groups
[Distributions in percent]

	Evacuees			Non-Evacuees		
	Returnees	Non-Returnees	All	In-Migrants	Out-Migrants	Non-Movers
Age						
19 to 24	11.7	21.1	14.3	20.0	22.8	12.0
25 to 39	24.4	33.6	26.9	60.9	27.5	24.5
40 to 54	30.4	25.5	29.0	13.8	32.1	27.1
55 and over	33.6	19.8	29.9	5.3	17.6	36.4
Race/Ethnicity						
White[a]	69.1	39.8	61.0	63.7	57.3	65.7
Black[a]	23.8	53.0	31.9	30.0	26.8	32.2
Hispanic	3.6	3.9	3.7	4.3	0.0	0.9
Other[a]	3.5	3.4	3.5	2.0	16.0	1.2
Gender						
Female	54.1	58.2	55.2	45.7	50.2	52.7
Male	45.9	41.8	44.8	54.3	49.8	47.3
Education						
Less than high sch.	15.3	20.9	16.9	15.6	13.3	16.9
High school	36.6	33.5	35.7	35.6	33.0	36.2
Some college	29.0	27.1	28.4	20.7	18.8	25.4
College graduate	19.1	18.5	19.0	28.1	34.9	21.5
Marital Status						
Not married	46.6	60.3	50.3	69.3	61.8	47.4
Married	53.5	39.7	49.7	30.7	38.2	52.6
Children under 18						
Without children	71.3	66.3	69.9	86.3	70.7	73.5
With children	28.7	33.7	30.1	13.7	29.3	26.5
Family Income						
Less than $10,000	10.8	20.9	14.2	20.3	16.0	10.8
$10,000 to $24,999	16.5	22.3	18.5	38.4	10.9	23.3
$25,000 to $49,999	29.1	21.0	26.4	15.8	29.2	27.2
$50,000 to $99,999	27.9	31.3	29.0	25.5	43.9	25.3
$100,000 or more	15.7	4.5	11.9	0.0	0.0	13.4
Num. of Individuals [b]	1,015.1	383.5	1,398.6	90.4	83.4	2,801.5

Source: Family income data refers to incomes for calendar year 2005 and is collected in the 2006 Current Population Survey (CPS) Annual and Social Economic (ASEC) Supplement. Other variables are based on information collected in the monthly CPS. The data on evacuees is taken from the monthly CPS from October 2005 to October 2006. The data on non-evacuees is for respondents to the 2006 ASEC Supplement.

[a] Non-Hispanic
[b] In thousands

Table 5.
Personal and Economic Characteristics of Residents Before and After Katrina
[Distributions in percent]

	Entire Affected Area			New Orleans MSA		
	Jan04–Jul05	Oct05–Oct06	Nov06–Nov07	Jan04–Jul05	Oct05–Oct06	Nov06–Nov07
Age						
19 to 24	12.9	12.6	12.2	13.0	12.9	13.1
25 to 39	27.0	26.3	25.7	25.7	21.9	24.0
40 to 54	30.0	29.2	28.7	30.6	33.2	30.6
55 and over	30.1	31.9	33.4	30.7	32.1	32.4
Race/Ethnicity						
White[a]	64.4	64.6	65.0	63.5	69.4	67.1
Black[a]	31.9	31.0	30.1	31.7	20.9	24.7
Hispanic	1.7	1.9	2.9	3.2	4.9	6.6
Other[a]	1.9	2.5	2.0	1.7	4.7	1.6
Gender						
Female	53.4	53.2	53.1	55.1	53.0	53.5
Male	46.6	46.8	46.9	44.9	47.0	46.6
Education						
Less than high school	18.2	17.3	16.6	15.7	14.0	10.4
High school	34.8	35.9	34.1	32.9	32.7	31.5
Some college	25.9	26.7	28.0	26.9	29.5	31.5
College graduate	21.1	20.1	21.3	24.6	23.8	26.6
Marital Status						
Not married	45.4	46.5	45.3	50.2	48.8	48.6
Married	54.6	53.5	54.7	49.8	51.2	51.4
Children under 18						
Without children	69.4	70.7	70.5	74.2	73.6	72.6
With children	30.6	29.3	29.6	25.8	26.4	27.4
Family Income						
Less than $10,000	12.7	11.4	10.0	11.9	6.5	6.3
$10,000 to $24,999	22.3	22.5	22.3	19.3	16.8	15.9
$25,000 to $49,999	28.4	27.6	25.5	27.2	28.2	26.5
$50,000 to $99,999	27.9	28.1	28.9	30.8	30.9	35.1
$100,000 or more	8.7	10.4	13.2	10.8	17.6	16.1
Housing Occupancy						
Owner	78.0	77.5	75.8	74.4	77.1	73.5
Renter	20.0	19.9	21.4	24.7	21.6	24.4
Occup. w/o payment	2.1	2.6	2.8	0.9	1.4	2.1
Num. of individuals[b]	4,605.9	4,408.1	4,542.1	958.4	677.6	757.8

Source: Current Population Survey
[a] Non-Hispanic
[b] In thousands

Table 6.
Characteristics of Employed Persons Before and After Katrina
[Distributions in percent]

	Entire Affected Area			New Orleans MSA		
	Jan04–Jul05	Oct05–Oct06	Nov06–Nov07	Jan04–Jul05	Oct05–Oct06	Nov06–Nov07
Class of Worker						
Government	17.6	16.2	17.0	16.0	12.6	12.8
Private industry	70.9	72.4	70.2	72.5	75.3	74.8
Self-employed	11.5	11.4	12.8	11.5	12.1	12.5
Industry						
Construction	7.9	10.1	9.8	7.5	13.2	11.9
Manufacturing	11.5	10.8	10.3	6.0	6.9	7.9
Trade, transp., utilities	20.0	20.0	19.6	19.9	23.1	20.6
Finance, bus./prof. services	15.6	14.8	16.4	18.7	18.6	19.6
Educational/health services	23.3	21.8	21.8	23.0	19.2	19.4
Leisure/hosp./othr. services	12.8	13.5	13.1	15.7	14.0	14.8
Public administration	5.0	5.3	5.8	7.0	4.2	5.1
Agriculture, mining	4.0	3.7	3.3	2.3	0.8	0.8
Occupation						
Business, mgmt., financial	12.2	12.7	12.9	16.8	17.0	16.6
Professional	20.7	19.0	19.2	21.9	18.4	19.3
Service	15.8	17.0	17.5	17.1	14.2	17.2
Sales	11.5	10.8	10.3	12.3	10.3	11.5
Office, admin. support	13.0	14.2	14.2	12.8	17.1	15.4
Construction, extraction	7.1	8.6	8.6	5.2	9.9	8.1
Transportation	7.0	6.1	6.1	5.7	5.8	5.4
Production	8.0	7.0	7.5	4.0	3.2	4.4
Installation, maint., repair	3.9	4.1	3.3	3.9	4.0	2.0
Farming, fishing, forestry	0.9	0.7	0.5	0.3	0.2	0.2
Employment-population ratio	60.1	60.4	60.4	60.5	61.1	63.5
Number of individuals[a]	2,769.5	2,660.4	2,742.3	580.9	414.3	481.0

Source: Current Population Survey

[a] In thousands