Joint Center for Housing Studies
Harvard University

Racialized Recovery:
Post-Foreclosure Pathways in Distressed Neighborhoods in Boston

Jackelyn Hwang

February 2015

W15-1

Acknowledgements

Abstract

This study examines trajectories of foreclosed properties in areas severely impacted by the foreclosure crisis and their association with local crime and disorder. Studies have found that property maintenance varies by owner type and that the owner type varies by local neighborhood characteristics. Others have argued that foreclosures, particularly those that are poorly maintained, have negative spillover effects on local neighborhood conditions. To disentangle the process, I match data from Boston, MA for constituent service requests, inspection violations, building permits, 911 calls, and crime reports to foreclosure records from 2006-2011 and subsequent transactions for each foreclosed property in Boston's hard hit areas. I find that foreclosed properties experience distinct pathways depending on the racial and ethnic composition of the local context, and these pathways have distinct externalities on the local area. The results demonstrate that the foreclosure recovery varies unevenly by neighborhood race and ethnicity, reproducing patterns of neighborhood inequality.

The collapse of the housing market and subsequent rise in foreclosures in the recent Recession dealt a substantial blow to minority neighborhoods (Been, Ellen, & Madar, 2009; Immergluck, 2008). Studies show that black and Latino borrowers were 2.8 and 2.3 times more likely, respectively, to receive high-rate subprime loans, which went into foreclosure at much higher rates than prime loans (Bocian, Davis, Garrison, & Sermons, 2010; Faber, 2013; Immergluck, 2008). Although there is substantial evidence showing that subprime lending and foreclosures were disproportionately concentrated in minority neighborhoods in metropolitan areas (Been et al., 2009; Calem, Hershaff, & Wachter, 2004; Hwang, Hankinson, & Brown, 2014; Immergluck, 2008), the existing research on foreclosed properties and their impacts on the surrounding neighborhood tends to overlook variation within these hardest hit, often minority, neighborhoods. In many central cities, particularly those with increased racial and ethnic diversity from rising immigration in recent decades, minority neighborhoods comprise distinct contexts that foreclosures may impact in different ways.

Existing studies on the trajectories of foreclosures have examined variation in investor activity (Herbert, Lambie-Hanson, Lew, & Sanchez-Moyano, 2013; Immergluck & Law, 2014; Mallach, 2014) and the spillover effects of foreclosures on local property values and neighborhood conditions (Fisher, Lambie-Hanson, & Willen, 2014; Gerardi, Rosenblatt, Yao, & Willen, 2012; Pfeiffer, Wallace, & Chamberlain, 2014; Schuetz, Been, & Ellen, 2008). These studies generally show that larger investors tend to concentrate in high-minority neighborhoods overall, but only a few have examined variation within these areas (e.g., Pfeiffer & Molina, 2013; Ellen, Mader, & Weselcouch, 2014). Moreover, while there is evidence that local owners and owner-occupants for foreclosed properties contribute to property upkeep

1

(Fisher & Lambie-Hanson, 2012), which some argue has positive impacts on surrounding neighborhood conditions (e.g., Wilson & Kelling, 1982), other research has found that investor-owned properties are associated with eventual increases in violent crime (Pfeiffer et al., 2014).

This study examines the types of foreclosure buyers, the degree to which they maintain their properties, and measures of neighborhood social disorder and crime in areas that were severely impacted by the foreclosure crisis to shed light on the differential consequences of foreclosures. A better understanding of the trajectories of properties beyond the time of the foreclosure provides insight into how to effectively rehabilitate and stabilize severely distressed neighborhoods in the wake of the housing crisis. Integrating data on foreclosed properties in Boston's hardest hit areas and all subsequent sale transactions on these properties with occupancy data, census data, and various indicators of property upkeep, crime, and social disorder, I analyze how various local neighborhood conditions are associated with patterns of post-foreclosure transactions, property upkeep, and conditions in the surrounding neighborhood. Below, I first describe the existing research on foreclosure transactions and foreclosure externalities to establish a conceptual framework for understanding the consequences of foreclosures. Then, I detail the Boston housing context and the data and methods used for the analyses. The section that follows presents results from each analysis. Finally, I discuss the policy implications of the findings.

Background

Post-foreclosure Transactions

In Massachusetts, when a homeowner misses a specified number of mortgage payments, the

mortgage holder forecloses on the property to satisfy the defaulted loan. Property owners can stop the foreclosure proceedings by selling the property, paying their debt, or negotiating new terms with the mortgage holder; however, if the property owner is unable to stop the foreclosure, the property is sold at a public auction. At the auction, the highest bidder can purchase the property as long as the bid is higher than the mortgage holder's reserve price, which is usually the unpaid balance on the mortgage and additional costs and interest. If a third party does not bid on the property with a price that meets this criterion, the mortgage holder typically becomes the owner of the property, i.e., real estate owned (REO). Properties are often vacant at the time of the auction, but when they are not, the new owner from the auction can evict whoever is residing in the property. Once foreclosed properties are in REO, banks often try to resell the property to a third party, with the property often remaining vacant during the period that it is in REO. Eventually, foreclosed properties end up in the hands of another property owner either from a sale at the auction or after being in REO. These property owners are either owner-occupants or investors, and investors rent out the properties or eventually resell them, sometimes rehabilitating the property to increase profits (Mallach, 2013). While legal proceedings differ across state and over time, most foreclosures generally follow this process.

Given the recent timing of the foreclosure crisis, relatively few studies have examined the trajectories of properties after foreclosure. Studies show that there is variation in what happens after a foreclosure takes place, regarding the length of time it takes for properties to resell from REO and the types of entities that purchase foreclosed properties. These studies generally find that foreclosures in low-income and minority neighborhoods tend to take longer

3

to sell and have higher likelihoods of investor purchases, and these differences are often

attributed to the higher crime rates, lower performing schools, and lower housing values that

these neighborhoods experience or the perception that such communities have these

characteristics (Coulton, Schramm, & Hirsh, 2010; Immergluck, 2010; Smith & Duda, 2009).

However, there is also variation between metropolitan areas. For example, Immergluck (2010)

finds that low value, REO properties in Atlanta had shorter times to sale as lenders wanted to

purge their portfolios of these properties as quickly as possible, but in Miami-Dade County and

New York City, Ellen et al. (2014) find that the REO stock did not take longer to sell compared to

less distressed neighborhoods. In Boston, Herbert et al. (2013) find that investors were more

active in low-income and minority neighborhoods. Large investors, in particular, targeted highly

distressed neighborhoods and often acquired multifamily and condominium properties. Ellen et

al. (2014) found a similar pattern in New York City, but this pattern did not occur in Miami-Dade

or Fulton Counties.

These studies generally group together these low-income and minority communities

that were hit hard by the foreclosure crisis and examine variation between these areas and

those that were hit less hard in broader levels of analyses—such as the nation, metropolitan

areas, or cities. Few have examined variation within areas where foreclosures were

concentrated, despite the fact that foreclosures were generally spatially concentrated, and

policy combatting the foreclosure crisis—primarily the Neighborhood Stabilization Program

(NSP)—has been neighborhood-based. A recent study by Pfeiffer and Molina (2013), however,

does find variation among hard-hit communities in Southern California, depending on the share

of Latinos and blacks living in these areas. They find that foreclosed properties in Latino

neighborhoods with higher shares of blacks were less likely to sell, and if they did sell, these properties were more likely to sell to investors. Properties in Latino neighborhoods with lower shares of blacks and lower levels of poverty, on the other hand, were more likely to sell to Spanish-surname households or family trusts. Pfeiffer and Molina (2013) suggest that because ethnic enclaves often reflect voluntary segregation, these areas may experience greater housing demand and thereby recover from foreclosures quicker than low-income African-American communities. Moreover, given the larger wealth gaps between blacks and whites compared to Latinos and whites, particularly following the Recession, and the historically limited access to credit for black firms in black neighborhoods (Immergluck, 2002; Kochhar & Fry, 2014), smaller-scale property owners may also face more disadvantages in purchasing properties in neighborhoods with higher shares of blacks.

Foreclosure Externalities

As foreclosures grew in numbers during the housing crisis, an increased number of studies have examined the effects of foreclosed homes on their surrounding areas. These studies predominantly focused on the impact of foreclosures on local housing values and have generally found small but negative impacts (for a review, see Frame (2010)). Immergluck and Smith (2006) were one of the first to examine this phenomenon and found that foreclosures were associated with a one percent decline in prices of homes within one-eighth of a mile in Chicago during the late 1990s. Examining foreclosure starts in New York City from 2000 to 2005, Schuetz, Been, and Ellen (2008) find a threshold effect: nearby foreclosures (within 250 to 500 feet) only impact local housing values when there are at least three. Other studies have found

that the effects vary by property type. For example, in Boston, negative spillover effects appear to be greater for condominiums, compared to single- and multi-family houses (Fisher et al., 2014).

Nonetheless, local home sales occur infrequently in some areas, thereby providing limited points of data to assess the local housing market, and a focus on prices precludes an assessment of the mechanisms by which foreclosures lower local housing values (Lambie-Hanson, 2014). For example, foreclosures may reduce local housing prices by adding to the number of low-cost properties on the market and pushing prices down or by increasing blight and disorder through deferred maintenance and vacancies. Gerardi et al. (2012) distinguishes between various stages in the foreclosure process across the 15 largest metropolitan areas from 2001 to 2010 and finds that the negative impact of foreclosures on nearby home values peaks before the foreclosure is completed and virtually disappears within a year after the property is resold from the bank. These results suggest that the condition of the property prior to the foreclosure explains the negative spillover effects on home values.

Other studies, however, find that property neglect also occurs after the foreclosure takes place. Lambie-Hanson's (2013) study further explores the process by which properties in foreclosure become neighborhood nuisances and finds that property maintenance varies by the stage and the length of time of the foreclosure process. In particular, the study finds that single-family properties in REO experience greater levels of constituent complaints, suggesting that these properties become nuisances while they are presumably vacant during this period. In addition, research suggests that owner-occupants and local investors are more likely to maintain their properties, while large corporations are less likely to maintain their properties

(Galster, 1983; Fisher & Lambie-Hanson, 2012). However Herbert et al. (2013) find that large local investors in Boston buying foreclosures reported rehabilitating their purchases. Overall, these studies demonstrate that the maintenance of foreclosed properties varies greatly depending on the type of residential property in foreclosure (e.g., condominiums, single-family homes, multi-family homes), the stage of the foreclosure process (e.g., pre-foreclosure, REO, post-REO sale), and the owner type, which has implications for the spillover effects of foreclosures on the local neighborhood.

Poor property maintenance and vacancies, as well as the increased share of rental units relative to before the housing crisis, can impact neighborhoods beyond housing prices in ways that have important consequences for its residents. A rich line of sociological and criminological research has demonstrated the consequences of neighborhood surroundings on residents living within neighborhoods (for reviews, see Sampson, Morenoff, and Gannon-Rowley (2002) and Sharkey and Faber (2014)). In particular, the "broken windows theory" posited by James Q. Wilson and George Kelling (1982) famously argued that physical signs of disorder, such as graffiti and property neglect, attracts more crime and social disorder because such public incivilities signal that local residents are indifferent to exercising informal social control in the neighborhood. Indeed, several studies have shown positive relationships between foreclosure rates and crime (e.g., Cui, 2010; Ellen, Lacoe, & Sharygin, 2012; Immergluck & Smith, 2006), and Pfeiffer et al. (2014) find that investor-owned foreclosures eventually increased violent crime rates. In a study focused on property conditions rather than foreclosures, Raleigh and Galster (2014) demonstrate that renter-occupied properties and vacancies, not blighted properties in need of demolition, are positively associated with neighborhood crime rates. Studies, however,

argue that this relationship may be spurious such that other factors, such as low levels of collective efficacy among local residents, cause both high levels of crime and disorder (e.g., Sampson & Raudenbush, 1999).

In the context of foreclosures, properties often remain vacant as banks and investors seek to resell properties, and properties that were once owner-occupied often become renter-occupied. Higher rates of vacancies can attract crime by providing spaces for public incivilities and contributing directly to neighborhood disorder (Cohen & Felson, 1979), and higher renter-occupancy rates correlate with neighborhood turnover and lower levels of collective efficacy (Shaw & McKay, 1969). Such property and neighborhood conditions can also have broader impacts on neighborhood disinvestment through the out-migration and malaise among existing residents and avoidance by potential residents (Geis & Ross, 1998; Hipp, Tita, & Greenbaum, 2009; Immergluck, 2010; Perkins & Taylor, 1996).

Overall, the existing literature finds varied trajectories of foreclosed properties. This varies by the broader metropolitan area, as well as the local racial context of the neighborhoods in which foreclosures take place. Moreover, the connection between post-foreclosure transactions and the consequences of such transactions on the surrounding neighborhood quality is less clear. While research has found that the time to sale, property type, and the type of buyer are connected to property upkeep and vacancies, few studies have examined the impact on the local neighborhood quality. This study traces the trajectory of foreclosures and local neighborhood conditions to shed light on this relationship. In particular, this study asks the following questions: 1) How do post-foreclosure transactions, specifically the types of buyers, vary within highly distressed areas? 2) How do different post-foreclosure

buyers differ in property maintenance? 3) How are different post-foreclosure transactions associated with local neighborhood conditions in highly distressed areas? Figure 1 presents a diagram of the process that this study examines. In Boston, the areas where foreclosures have been concentrated have distinct demographic, racial and ethnic, and socioeconomic characteristics and thus provide a research setting that can shed light on differences in foreclosure recovery.

[Figure 1 about here.]

Data and Methods

The Foreclosure Crisis in Boston, Massachusetts

From 2006—2011, Boston had over 4,000 completed foreclosures among residential properties. Because Boston had an earlier downturn in house prices compared to national trends, the number of completed foreclosures peaked earlier than the rest of the nation, with over one-fourth of Boston's foreclosures occurring in 2008. Foreclosures have declined drastically in recent years, reflecting both progress in the economic recovery, as well as legislative and regulatory efforts to combat the housing market crash. The foreclosure crisis in Boston was not as severe as in other major U.S. cities: at its peak in 2008, the Boston metropolitan area ranked forty-fourth in foreclosure rates among the 100 largest metropolitan areas. Within Massachusetts, foreclosure rates were higher in at least four other cities throughout the entire period.[1]

Nonetheless, the foreclosure crisis negatively impacted Boston's housing market, especially in the particular areas where foreclosures concentrated. Among Boston's 15 planning

9

districts, over 80% of Boston's foreclosures took place in five of them: Dorchester, Roxbury, Mattapan, Hyde Park, and East Boston. Yet, these five planning districts contain only 30% of Boston's housing units. Figure 2 shows the relatively higher rates of foreclosures in these planning districts compared to the rest of Boston. These districts were designated as targets of the federal NSP, which provides funding to help local governments stem the negative impacts of the foreclosure crisis on neighborhoods. Among residential properties, over 42% of the foreclosed properties were condominiums, 18% were single-family homes, and about 40% were two- and three-family residences. Compared to the rest of Boston, these five districts have far more minority and disadvantaged residents. Table 1 displays average characteristics between these five planning districts and the remainder of Boston based on 2000 census data.

[Figure 2 about here.]

[Table 1 about here.]

Data Sources

Given this study's interest in examining variation in foreclosure impacts within highly distressed neighborhoods, I selected the five districts with the highest foreclosures rates and targets of the NSP as the focus of the analysis. To trace the trajectories of foreclosed properties in distressed areas in Boston, I constructed a dataset composed of foreclosed properties from 2006—2011 in these five planning districts and all subsequent sale transactions of these properties through March 2013. I use foreclosure and transaction data compiled by the Warren Group, a company specializing in New England real estate data. For each transaction, the data lists the property address, recorded date, the names of the sellers and buyers (if applicable),

the price of the sale (if applicable), and the book and page number of the recorded documents. The transactions include foreclosure deeds, property sales, nominal sales, non-market sales, mortgages, municipal tax liens, and Declaration of Homestead filings, which offer limited protection of the value of the home against unsecured creditor claims for owner-occupants.[2] I also employ property parcel data obtained from the City of Boston's Assessing Department for 2006—2013. For each year, the dataset contains a record of every parcel in Boston, including its address, owner name, residential tax exemption filing status, assessed value, and property details. I integrated these two datasets to track annual ownership information for each foreclosed property.

To assess the conditions of the foreclosed properties and the local neighborhood, I use several additional data sources. First, I draw upon demographic, socioeconomic, and housing characteristics from the 2000 U.S. Census (http://factfinder2.census.gov/).[3] The units of analysis from this data are census block groups—the smallest geography of aggregated data available from these data sources. Census block groups generally contain about 1,200 residents and are contiguous sections of several city blocks nested within census tracts. Consistent with empirical studies that show that disorder and crime externalities generally occur in close proximity to the affected properties (e.g., Raleigh & Galster, 2014), I examine the local spatial conditions by the smallest possible aggregation. I use the terms "block groups" and "neighborhoods" interchangeably in this article to refer to the same areal units.[4]

Second, I use data from the publicly available Neighborhood Blight and Building Database constructed by the Boston Area Research Initiative (BARI) at Harvard University (http://hdl.handle.net/1902.1/18864). This dataset contains records of constituent requests for

services from 2011, building permits from 2009—2011, inspection violations from 2007—2012, and 911 reports from 2011—2012 associated with a specific property. I matched all of these records to the foreclosed properties in the dataset and calculated aggregate counts of the various events by census block groups. City service requests include complaints about potholes, graffiti, illegal dumping, and housing maintenance. Since 2008, the City of Boston has maintained a database of all requests for city services, which can be made by phone calls, text messages, a smart phone application, website submissions, and in-person visits. Each request is geocoded and matched to a parcel in Boston. In addition, BARI developed several categories for the requests. First, all requests were categorized by whether or not they were human-generated problems. Within this category, BARI categorized the requests into several subcategories: maintenance issues specific to housing (e.g., bed bugs, mold, insufficient heat), issues related to condos and apartments (e.g., resident complaints), uncivil use of private space that affects public space (e.g., abandoned buildings), graffiti, and trash disposal (e.g., illegal dumping). In the analyses that follow, I group the first three subcategories—housing-related issues, condo and apartment-related issues, and uncivil use of private space affecting public space—together as neglect of private space, and I group the latter three subcategories—uncivil use of private space affecting public space, graffiti, and trash disposal—together as the denigration of public space. In addition, I also examine housing-related issues separately.

I also matched filed building permits for any building modifications, including new construction, renovation, and electrical changes, to their respective parcels after the foreclosure date. Because large projects often require filings for multiple building permits, I only consider whether or not properties had permits filed, rather than a count of the permits

12

filed. The inspection violations data contains records of code violations, which range from food code violations to housing maintenance issues. I exclude all food code violations from the dataset, and I match all violations occurring after the foreclosure date to their associated property.[5] I separately examine only violations related to property maintenance, which include citations for foreclosure maintenance, snow removal, overgrown weeds, site and sidewalk cleanliness, and building numbering. Finally, BARI also geocoded and categorized 911 dispatch reports by the type of issue reported. I only examine 911 records related to violent crime and non-violent social disorder (e.g., public drunkenness).

Lastly, I use publicly available crime reports from the Boston Police Department from 2011—2013, which I obtained from the City of Boston's Data Portal. For each crime report, the data includes the date and time of the offense, the location, crime type, and weather a weapon was involved. I calculated aggregate counts of overall crime, shootings, robberies, and burglaries by census block groups. Models with homicide and assault produced nearly identical results to shootings and are therefore not presented.

I merged all of the datasets together to produce a property-level database of foreclosed properties, their subsequent transactions, annual ownership records, assessed values, maintenance and disorder indicators associated with the property, as well as data related to the census block group containing the property—including demographic, socioeconomic, and housing characteristics, median assessed values, block group-level maintenance and disorder measures, crime data, and summary measures of foreclosure transaction characteristics aggregated to the block group-level. The final dataset contains 3,078 one- to three-family residential properties and condominiums that foreclosed between 2006—2011 and spans 236

of Boston's 631 census block groups, based on 2000 census boundaries.

Owner Categories

The research reviewed above demonstrates that the potential consequences of post-foreclosure transactions may vary by the types of owners that purchase the property. I categorized buyers and sellers of each transaction in the following categories: owner-occupants, individual investors, banks, corporations (e.g., LLCs, corporations), trusts (e.g., family trusts, realty trusts), and other (e.g., City of Boston, Habitat for Humanity). I coded entries with first and last names and no other keywords (such as "llc" or "trust") as individual owners. Using similar criteria to Pfeiffer and Molina (2013), I used a set of keywords to identify banks and financial institutions, corporations, and trusts. I identified banks and financial institutions with keywords that included "bank," "loan," "mortgage," "servicing," and any variants, as well as names of major U.S. and international banks. Bank-owned properties are most likely transfers from the servicer of the loan to a financial institution following the foreclosure and are presumably REOs. I categorized owners as "corporations" if their names included keywords, such as "llc," "lp," "limited," "corp," and "inc." This category also includes real estate-related businesses and therefore includes keywords like "realty" and "REO" and can also contain nonprofit organizations. I identified trusts if the name contained variants of "trust." This category includes both family trusts, realty trusts, and land trusts that are neither incorporated nor used concurrently with one and are not owner-occupied. I separate trusts and corporate entities to examine differences within this group. Trusts carry more legal risk but also maintain anonymity and do not pay state fees, while corporate entities can be publicly

14

searched on a corporate registry and are necessary if the entity also purchases commercial properties and multifamily apartment buildings. I categorized all other properties as "other." I reviewed hundreds of coded properties for internal consistency and matched all current owners with the owner from the last recorded transaction in the sales transaction data.

Determining whether the owner resides in the property is surprisingly difficult with the data that are generally available to researchers. In Massachusetts, homeowners have the option to file a Declaration of Homestead with their county. The filing procedure requires a notarized form and $35 filing fee. If individuals filed this form, I considered them to be "owner-occupants." While Declaration of Homestead filings are a strong measure of owner-occupancy, not all homeowners file them. Therefore, I also determined the occupancy of properties based on residential tax exemption filings. In Boston, residents who own and occupy their property as the principal residence can have a proportion of their property tax bill exempted from taxation. To apply for the exemption, residents fill out a form at City Hall or by mail and provide their Social Security Number, which the Assessing Department confirms with the individual's personal income tax filing. If individuals filed this form, I coded them as "owner-occupants" also. Owners who I initially categorized as trusts but who filed for the residential tax exemption were instead categorized as "owner-occupants." In these cases, families sometimes purchase properties as trusts for inheritance purposes but live in the properties. Within the dataset, approximately 62% of individuals that filed residential exemptions also filed a Declaration of Homestead. I categorized all other individuals as "individual investors."

Descriptive Statistics

Table 2 displays descriptive statistics for the 3,078 foreclosures in the dataset. Most of the foreclosures occurred between 2007 and 2010, peaking in 2008, and about 161 of the foreclosures were for properties that had already experienced a foreclosure during the time period of analysis.[6] A large number of the properties had service requests associated with the property, but only 101 had requests related to private neglect and only 49 related to public denigration. About seven percent of the properties had violations for maintenance issues and a similar percentage issued permits to improve the property.

Over 80% of the properties were REOs, returning back to the ownership of a bank or mortgage lender at the foreclosure auction. Either directly at auction or from the bank or mortgage lender, investors purchased most of the foreclosed properties. Owner-occupants purchased over 26% of them, and nearly one-third of the foreclosed properties were purchased by individuals who did not reside in the property. Corporations purchased the next largest number of foreclosed properties, and trusts purchased about seven percent of them. Assuming that properties for which a bank entity purchased a bank-owned property are still REOs, 142 properties were never resold by March 2013, and an additional 8 properties foreclosed again by 2011 and remained bank-owned at least through March 2013. While over 60% of investors who bought the foreclosures either directly at the auction or from the bank did not resell their properties in the study period, among those that did, about 44% of the properties were resold to owner-occupants, and 55% were resold to other investors. By March 2013, individual owner-occupants owned about 40% of the properties, individual investors owned about 25%, LLCs or corporations owned 20%, and trusts owned about six percent Median sale times for REOs and

sales from post-foreclosure investors, excluding same-day sales, were 186 days and 212 days,

respectively—taking about six to eight months to resell properties. This is consistent with

Herbert et al.'s (2013) findings in Boston.

[Table 2 about here.]

In Table 3, I present descriptive statistics for the 236 block groups containing most of

Boston's foreclosed properties. While these neighborhoods, on average, are disadvantaged,

minority areas, there is wide variation across these block groups. For example, some block

groups are 97% white while others have no white residents. Foreclosure and crime indicators

also vary widely across the block groups.

[Table 3 about here.]

Model Specifications

I test the pathways discussed above and highlighted in Figure 1 using three sets of analyses. The

first pathway of interest runs between neighborhood-level conditions and the types of buyers

that purchase foreclosed properties. To identify the neighborhood-level factors that predict the

types of foreclosure buyers, I use multilevel multinomial logistic regression models, in which

each foreclosed property is the first-level unit nested within block groups. The dependent

variable is the type of post-foreclosure buyer—either directly at auction or from bank-owned

properties—with owner-occupants as the reference category. For properties that became bank-

owned at the foreclosure auction, I consider the post-foreclosure buyer to be the buyer that

purchased the property from the bank, but for properties purchased directly at the auction by a

third party, the post-foreclosure buyer is the buyer at the auction.

For each property, I control for the property type (single-family, two- or three-family, or condominium), the year in which the foreclosure took place, with single-family homes and the year 2006 as reference categories, the assessed value per square foot in the foreclosure year, and the logged sale time from the foreclosure auction to the post-foreclosure buyer. Variable transformations are intended to induce linearity to satisfy the assumptions of the regression models. At the block-group level, I include the following demographic and socioeconomic control variables from the 2000 census measures: percent non-Hispanic black, percent Hispanic, percent Asian, percent foreign, median household income, percent poverty, percent homeownership, and percent vacancy. In addition, I include the logged median assessed value per square foot of one- to three-family residential and condominium parcels. For ease of interpretation, the level-one dummy variables are not centered, the values and REO sale times are centered on the mean of the block group in which each property is located, and level-two variables are centered on the means for the entire sample. Therefore, the level-one intercept β_{0j} is the expected log-odds of the post-foreclosure buyer relative to an owner-occupant buyer for a single-family home that foreclosed in 2006 with the average square footage value and sale time in the average block group. The level-two slopes γ_{0k}, which are the coefficients of interest in this analysis, represent the change in the intercept β_{0j} for a one-unit change in the predictor, where W is a matrix of all level-two control variables described above. Formally, the model is as follows:

Level 1: $\log\left[\frac{p(PostFCBuyer)}{p(Owner\ Occupant\ PostFCBuyer)}\right]_{ij} = \beta_{0j} + \sum_{k=1}^{2}\beta_{kj}(property\ type)_{ij}$ (1)

$$+ \sum_{k=3}^{7}\beta_{kj}(year)_{ij} + \beta_{8j}(value)_{ij}$$

$$+ \beta_{9j}(logREOsaletime)_{ij} + \varepsilon_{ij}$$

Level 2: $\beta_{0j} = \gamma_{00} + \sum_{k=1}^{n}\gamma_{0k}W_j + u_{0j}$ (2)

The second pathway that I examine is the relationship between post-foreclosure buyers

and property conditions. The dependent variables are various events associated with property

maintenance: service requests (any, housing-related, private neglect, public denigration,

human-generated problem), inspection violations (any, maintenance-related), 911 reports

(violent, social disorder), and pulled permits. For this analysis, I use multilevel logistic regression

models to predict the likelihood of these property-related maintenance incidents, controlling

for the proximate conditions in the local area. The main level-one independent variables are

dummy variables for the types of post-foreclosure buyers (with individual owner-occupants as

the reference category). I also include control variables for the property type (reference

category is single-family homes), the year in which the foreclosure took place (reference

category is 2006), whether the property was bank-owned (versus purchased directly at auction

by a third party), the assessed value per square foot of the property in the foreclosure year, and

the logged sale time from the foreclosure auction to the purchase by the post-foreclosure

buyer. To account for local neighborhood-level conditions, I include a random intercept at level-

two, as well as the same control variables used in the first model and centered on the sample

means. As in the first model, the level-one dummy variables are not centered and the values

and REO sale times are centered on the means for the property's block group. The formal

specification of the model is:

$$\text{Level 1: } \log(MaintenanceIncident)_{ij} = \beta_{0j} + \sum_{k=1}^{4} \beta_{kj}(PostFCBuyer)_{kij} \quad (3)$$

$$+ \sum_{k=5}^{6} \beta_{kj}(property\ type)_{kij} + \sum_{k=7}^{11} \beta_{kj}(year)_{kij} +$$

$$\beta_{12}(REOprop)_{12ij} + \beta_{13}(value)_{13ij} +$$

$$\beta_{14}(logREOsaletime)_{14ij} + \varepsilon_{ij}$$

$$\text{Level 2: } \beta_{0j} = \gamma_{00} + \sum_{k=1}^{n} \gamma_{0k} W_j + u_{0j}, \quad (4)$$

where β_{0j} is the expected log-odds of having a property maintenance incident for an individual

owner-occupant of a single-family home that foreclosed in 2006 and sold directly at auction to

a third party with the average value and sale time within a block group with average levels of all

level-two variables; β_{kj} is the additional change in the log-odds of the maintenance incident for

the relevant control variable compared to the log-odds for individual owner-occupants

purchasing single-family homes for 2006 foreclosures with the average value and sale time

within each block group for the average block group; ε_{ij} is the level-one error term; and u_{0j} is the

level-two error term.

Finally, I examine how foreclosure transactions are associated with neighborhood-level

public disorder and crime. For this analysis, the dependent variables are logged rates of block

group-level service requests (any, public denigration, human-generated problem), 911 reports

(violent, social disorder), and crime incidents (any, robbery, shooting, burglary). I use spatially

lagged regression models to control for possible associations between the dependent variables

and characteristics of their neighboring block groups. Independent variables are the shares of

post-foreclosure buyers, logged median assessed values per square foot, square root of median

sale times for REOs, foreclosure rates per 100 housing units, the share of foreclosures sold

20

directly at auction, the share of property types, and the demographic and socioeconomic

characteristics used in the first analysis. All variables are transformed to induce linearity to

satisfy the assumptions of the linear regression model. All control variables except the share of

foreclosure buyer types are centered on the sample means in the results presented for ease of

interpretation.

The formal model is as follows:

(5) $\quad LogDisorderCrimeRate_i = \beta_0 + \sum_{k=1}^{4} \beta_k (\%FCBuyer)_{ki} + \sum_{k=5}^{n} \beta_k W_{ki} +$

$$\rho w_i (logDisorderCrimeRate)_i + \varepsilon_i,$$

where β_0 is the expected logged rate for the dependent variable for block groups with all

foreclosures purchased by individual owner-occupants and with average levels of all other

variables; each coefficient β_k is the expected change in the rate of the logged outcome variable

for a one-unit change in the relevant control variable; ρ is the spatial lag coefficient pertaining

to the geographically weighted matrix $w_i*(logDisorderCrimeRate)_i$; and ε_i is the error term. The

geographically weighted matrix models the dependent variable as a function of both its own

value and that of its neighbors. These weights are based on first-order queen contiguity, which

considers the values of all block groups that share either a border or a corner with a block

group. I present results below for models with and without the foreclosure rates to show the

independent effect of foreclosure rates on indicators of disorder and crime.

Findings

In the following sections, I present the results for each set of analyses. First, I show how local

contexts influence the types of entities purchasing foreclosures in these hard-hit areas of

Boston. Second, I demonstrate how property maintenance varies among the types of foreclosure buyers. Lastly, I present results for how the prevalence of foreclosures and specific types of buyers are associated with subsequent disorder and crime rates in local neighborhoods.

How Are Neighborhood Conditions Associated with Post-Foreclosure Buyers?

Table 4 presents the percentage of foreclosures that were purchased by each type of buyer above and below the median of socioeconomic, racial and ethnic, and housing characteristics of block groups. In neighborhoods with higher median incomes, owner-occupants who purchased foreclosed properties were more prevalent and purchased nearly 30% of the foreclosures. Owner-occupants were also more prevalent in areas with low poverty and vacancy rates and high ownership rates. Corporations and trusts, on the other hand, purchased larger shares of foreclosed properties in areas with higher poverty and vacancy rates and lower ownership rates. Neighborhoods with higher shares of whites and lower shares of blacks had higher rates of foreclosure purchases by individual owner-occupants, while corporations and trusts purchased more foreclosed properties in neighborhoods with lower shares of whites and higher shares of blacks. Properties in these areas, as well as neighborhoods with lower shares of foreign-born residents, were more likely to remain bank-owned. Moreover, in neighborhoods with higher shares of blacks, individual investors purchased a smaller share of the properties, but in neighborhoods with higher levels of Hispanics, Asians, and foreign-born residents, individual investors were more prevalent. These comparisons suggest that smaller, local investors are more active in ethnic neighborhoods, compared to neighborhoods with higher

22

shares of blacks. Altogether, these results suggest that neighborhoods with higher shares of

blacks face lower demand from owner-occupants and individual investors.

[Table 4 about here.]

Table 5 presents the odds ratios and confidence intervals for a one-unit change in each

neighborhood-level characteristic for each post-foreclosure buyer relative to individual owner-

occupants for a single-family home that foreclosed in 2006. The estimates for property-level

indicators and the sale time are also included in the table. The results show that individual

investors, corporations, and trusts were all more likely to purchase foreclosed homes in block

groups with greater shares of blacks, and individual investors were also more likely to purchase

properties in block groups with higher shares of foreign-born residents and higher values. In

addition, properties in neighborhoods with higher shares of blacks were more likely to remain

bank-owned. These findings are consistent with prior results that larger investors are more

likely to purchase properties in neighborhoods with higher shares of blacks (Herbert et al.,

2013), and the finding for foreign-born residents is consistent with the notion that local ethnic

investors may be more likely to invest in these properties (Pfieffer & Molina, 2013).[7] Models

also controlling for neighborhood changes from 2000 to 2005-2009 ACS estimates (not shown)

to examine if neighborhood trajectories might encourage or detract investment in particular

areas yield similar results, and changes in the vacancy rate were positively associated with

ownership by corporations and trusts.[8]

At the property-level, compared to investors, owner-occupants were far more likely to

purchase foreclosed single-family homes and homes with longer sale times. Individual investors

were less likely than individual owner-occupants to purchase foreclosures, but this difference

weakened over time. By contrast, the likelihoods of corporations purchasing foreclosures increased over time, and trust activity peaked in 2009. Moreover, properties that had foreclosed in 2010 and 2011 were far more likely to still be in REO by March 2013 compared to properties that foreclosed in 2006, as demonstrated by the high reported odds ratios.

[Table 5 about here.]

How Well Do Post-Foreclosure Buyers Maintain Their Properties?

Table 6 shows the share of foreclosed properties purchased by each type of buyer that was associated with a property maintenance incident. Relative to properties purchased by investors, properties purchased by owner-occupants had lower rates of service requests associated with housing maintenance and private property neglect, and properties owned by trusts had relatively more requests related to housing maintenance, private property neglect, and human-generated problems, more broadly. In addition, properties that remained in REO also had relatively higher incidents of service requests related to housing and public denigration. Many foreclosed properties also had citations for inspection violations, and a substantial proportion of these properties were related to housing maintenance issues. Foreclosed properties owned by corporations, in particular, had more incidents of housing-related violations. Property transactions were rarely associated with 911 reports, although they were more likely among properties owned by corporations and trusts compared to properties owned by individuals. Finally, properties purchased by owner-occupants were far more likely to pull permits—reflecting property upkeep and improvements, while trust-owned and REO properties were least likely.

24

[Table 6 about here.]

Table 7 displays multilevel logistic regression results for each type of foreclosure buyer predicting the likelihood of a property being associated with a property maintenance incident, controlling for the property type, year of the foreclosure, whether the property was bank-owned, its assessed value, and sale time. The table contains odds ratios, which represent the multiplicative difference in the odds of having the incident compared to a single-family home purchased by an individual owner-occupant that foreclosed in 2006 with an average assessed value and sale time for the average block group.

The results reveal that properties owned by trusts had a higher likelihood of all service request types, except public denigration, compared to owner-occupied foreclosed properties. Trust-owned foreclosed properties were over twice as likely to have private property and housing-related issues. Foreclosures purchased by individual investors, corporations, and trusts were more likely to have housing maintenance inspection violations than owner-occupied foreclosures. In addition, trust-owned foreclosed properties and properties in REO were less likely to have building permits pulled for them, indicating that these entities were less likely to improve and rehabilitate their properties.

Reports of violence and social disorder were not associated with the foreclosure buyer type. When I examine whether these relationships vary by the racial and ethnic composition of the neighborhood, the results (not shown) show that trusts and corporations are more likely to have service requests associated with housing issues in block groups with greater shares of blacks. Moreover, foreclosures owned by corporations are less likely to have maintenance inspection violations in both black and Hispanic neighborhoods, and I find no differences for

trusts.

Corporations and trusts may have purchased more properties with inspection issues, but the findings are also consistent with other evidence that larger entities do a worse job of property upkeep than smaller or local investors (Fisher & Lambie-Hanson, 2012). However, trust-owned foreclosures, and not corporate-owned foreclosures, were more likely to have service request complaints and less likely to issue permits. It is possible that these trusts are not professional landlords, such as real estate management companies, who tend to be corporate entities. Lastly, it is not surprising that there are no associations between foreclosure buyer types and incidents of public denigration, violent crime, or social disorder since these characteristics are related to social and ecological characteristics beyond the properties themselves. In the next analysis, I examine these local conditions of crime and disorder.

Are Foreclosure Buyers Associated with Local Disorder and Crime?

Table 8 displays Pearson correlations between block-group level rates of disorder and crime and the percentage of foreclosed properties purchased by each type of buyer, as well as the foreclosure rates. The results show that foreclosure rates are positively correlated with nearly all measures of disorder and crime, except for service requests associated with public denigration and robberies. The share of foreclosures purchased by owner-occupants is negatively correlated with nearly all indicators of disorder and crime, except for overall service request rates and robberies. Only shares of foreclosed properties purchased by individual investors are positively correlated with service requests associated with public denigration and

human-generated problems. 911 reports for both violent incidents and social disorder are positively associated with the share of foreclosures purchased by both individual investors and trusts, and actual crime reports are generally positively but weakly associated with the share of foreclosed purchased by corporations and trusts. Lastly, block groups with higher shares of foreclosures remaining in REO were negatively associated with overall crime and robberies.

[Table 8 about here.]

Next, I control for neighborhood characteristics related to socioeconomic, racial, and housing conditions that may predict rates of disorder and crime, as well as foreclosure characteristics, to examine whether foreclosures and the composition of foreclosure buyers are associated with neighborhood differences in these outcomes. I also control for the disorder and crime rates of the spatially proximate neighborhoods.[9] Table 9 presents the coefficients and standard errors for estimates of the association of the foreclosure variables with each type of outcome. Without controlling for foreclosure rates, the results show that the composition of post-foreclosure buyers is generally not related to indicators of public disorder and crime in the local neighborhood. Nonetheless, block groups with higher shares of foreclosures purchased by corporations are positively associated with shootings, and surprisingly, block groups with higher shares of foreclosures in REO are negatively associated with violent crime 911 reports, overall crime, robberies, and burglaries, even after controlling for foreclosure rates, which are positively associated with most of the disorder and crime indicators examined.

[Table 9 about here.]

The results suggest that foreclosures are associated with broader spillovers of disorder and crime in the local area. The composition of buyers is only weakly associated with disorder

27

and crime within the time period that I examine. Nonetheless, the share of trusts and corporations are positively associated with other forms of blight, such as service requests related to housing and private property, as well as inspections and permits (results not shown). Therefore, the composition of buyers may be associated with other conditions of neighborhood blight related to housing upkeep, which may lead to further crime and disorder beyond the time frame examined. Surprisingly, the share of properties that remained in REO is negatively associated with overall crime rates. Given that properties that remained in REO are not associated with indicators that suggest a lack of maintenance, it is possible that banks are actually maintaining these properties relatively better than their counterparts. On the other hand, these incidents are reported, and thus, in neighborhoods with more REOs, which presumably remain vacant, the degree of reporting may have also decreased.

Summary and Discussion

In sum, the analyses reveal several facets of the trajectory of foreclosures and their local contexts in neighborhoods in Boston that were severely impacted by the foreclosure crisis. First, individual investors, corporations, and trusts were more likely to purchase foreclosed properties in neighborhoods with higher shares of blacks, and owner-occupants were more likely to purchase foreclosures in neighborhoods with higher shares of whites. In addition, individual investors were more likely to purchase foreclosures in neighborhoods with higher shares of foreign-born residents. Second, foreclosed properties purchased by trusts, which tended to concentrate in black neighborhoods, were associated with poor property maintenance. These properties had higher likelihoods of having service requests placed against

them related to housing and property issues and inspection violations associated with property

maintenance and lower likelihoods of permit activity. Corporations and individual investors

were also associated with higher likelihoods of maintenance-related inspection violations.

Third, while the composition of foreclosure buyer types in neighborhoods was not associated

with levels of public disorder and crime per se, neighborhoods with greater shares of foreclosed

properties purchased by corporations and trusts, which tended to have higher shares of blacks,

were positively associated with other measures of neighborhood blight. Fourth, foreclosure

rates were strongly and positively associated with several indicators of disorder and crime.

Lastly, neighborhoods with higher shares of foreclosed properties remaining in REO were

associated with lower levels of reported disorder and crime.

Overall, the findings show that the foreclosure recovery process is especially

problematic in highly distressed, particularly black, neighborhoods. While the results point to

the negative role that larger investors—trusts and corporations—have on both properties and

neighborhoods, these investors are generally not very large entities nor are they large distant

investors from abroad or across the country. Herbert et al.'s (2013) study of foreclosure

investors in Boston found that only seven percent of foreclosure investors owned 10 or more

properties, and only two of these investors were based outside of Massachusetts.

Nonetheless, the study is not without its limitations. The foreclosures considered in this

study only include properties in which a foreclosure deed was filed with the state.

Massachusetts made legislative changes after the crisis had escalated in efforts to prevent or

slow the foreclosure process, and banks have faced increasing pressures to cooperate in these

efforts. Therefore, properties may have begun the foreclosure process but did not go to auction

and therefore did not have a deed filed. While owners of these properties may have sold their properties in the meantime or negotiated a loan modification with the lender, some properties may have remained vacant and had subsequent consequences on the neighborhood that I cannot trace with the data. In addition, the results suggest that the prevalence of foreclosures and particular foreclosure investors within severely distressed areas are associated with more neighborhood blight, disorder, and crime, but the cross-sectional data limits causal claims. Measures of blight and inspection violations have only become available in the years following the foreclosure crisis, and thus the data does not allow me to distinguish between whether particular foreclosure buyers and foreclosures themselves are contributing to neighborhood conditions, or if unobserved characteristics associated with blight and disorder also lead to high rates of foreclosures and attract particular buyers.

Finally, the measures of disorder and crime are reported by citizens and police. On the one hand, the variation in reports may reflect increased collective efficacy, particularly when it comes to service requests. Levine and Gershenson (2014) find that African-American neighborhoods in Boston are more likely to request services for snow-plowing compared to immigrant neighborhoods, and they argue that these service requests reflect distinct expectations of local government. Moreover, housing advocacy organizations in Boston have encouraged residents facing evictions, which often occurs during the foreclosure process, to issue service and inspection requests against landlords to garner evidence in the tenants' favor for eviction court cases. Therefore, while trusts may not be maintaining their properties well, the residents associated with these properties may also be exhibiting greater efficacy and action against their landlords. Despite limitations, the results demonstrate that foreclosed

30

properties experience distinct pathways that vary by the racial and ethnic composition of the

local area, and these pathways are associated with distinct local neighborhood conditions.

Conclusion

This study contributes to literature on the consequences of foreclosures by examining the

trajectories of foreclosed properties—who purchases the foreclosures, how well owners of

foreclosed properties maintain the property, and local area conditions after the foreclosure

transactions have taken place. The results demonstrate the unequal patterns by which

neighborhoods are recovering from the foreclosure crisis. The higher rates of property-related

issues and maintenance violations among foreclosures purchased by investors, particularly

trusts, and the greater incidence of these investors in neighborhoods with higher shares of

blacks suggests that these investors are detrimental to these neighborhoods. As a result, this

unequal recovery contributes to the reproduction of neighborhood inequality by race.

While the housing boom offered the expansion of homeownership and accumulation of

wealth, especially to historically disadvantaged groups and in historically disadvantaged

neighborhoods, the foreclosure crisis and its uneven recovery has further disadvantaged these

neighborhoods. The lower quality of property maintenance and greater rates of blight in

particular sections within these hard-hit areas detracts from the reinvestment that these

neighborhoods need. The local conditions and visible blight serve as important cues for

responsible investors and homeowners to avoid these neighborhoods (Immergluck, 2010).

Policies aiming to combat the negative fallout of the housing crisis need to develop

incentives and tools for larger investors to maintain their properties and for smaller investors or

owner-occupants to purchase properties in minority neighborhoods. Although policies originally favored selling foreclosures to owner-occupants, the large stock of foreclosed properties, particularly in distressed neighborhoods, have made this less feasible over the last several years. Despite having more incidents of inspection violations, both individual investors and corporations have relatively low levels of service requests against them and were no less likely to rehabilitate their properties compared to individual owner-occupants. Thus, the findings from this study suggest that local and experienced landlords who are willing to maintain their properties are better for the overall stability of these neighborhoods. Policies and programs should aim to increase their presence and should ensure that these smaller and/or less experienced landlords have the necessary resources and support to maintain and improve their properties. Programs like the Landlord Entrepreneurship Affordability Program in Connecticut, which provides financing and training for low- and moderate-income households to purchase two- to four-unit properties, is one step in this direction and also provides opportunities for economic mobility for participating households. Moreover, regulations should incentivize current investors in these hard hit, primarily black, neighborhoods to take responsibility for their investments. Without appropriate intervention, the structure of neighborhood inequality by race will continue to persist through the foreclosure recovery.

Notes

[1] Source: City of Boston, Foreclosure Trends Annual Reports, 2005—2013.

(http://www.cityofboston.gov/dnd/pdr/Foreclosure_Trends.asp).

[2] This dataset does not include properties in the foreclosure process that have not reached the auction stage. Therefore, this analysis excludes short sales, properties still pending an auction

date, and properties that began the foreclosure process but were successfully able to prevent the foreclosure.

[3] I also conducted analyses and note results using five-year estimates from the 2005—2009 American Community Survey (ACS). However, the ACS has relatively large margins of error compared to the U.S. Census at the census block group level due to its smaller sample size. Moreover, the estimates take place during the period of analysis, which may have caused changes in the neighborhood characteristics measured by the ACS. Given that the housing boom took place in the period between the 2000 estimates and the foreclosure transactions, it is possible that neighborhood changes in this period may be driving the results, and I discuss results from alternative models that consider this in the results section.

[4] Operationalizing neighborhoods as a unit of analysis is widely debated and varies by the social process under study and the social context being discussed (Sampson, Morenoff, & Gannon-Rowley, 2002). Block groups offer the smallest aggregation of demographic and socioeconomic data and are relatively similar to spatial proximities that other studies have shown to be relevant for foreclosure externalities.

[5] Service requests resulting in inspection violation citations were not counted among service requests to avoid duplicate reports with the inspection violation data.

[6] Results from analyses excluding properties that had multiple foreclosures are similar to those presented.

[7] All investors were more likely to purchase properties in neighborhoods with higher foreclosure rates compared to owner-occupants. The main findings hold when foreclosure rates

are included in the model, but the effect of the share of foreign-born residents for individual investors is not statistically significant.

[8] Models examining only properties purchased by third parties at auction show that ownership rates, income, and poverty rates were also strong predictors of foreclosure buyer types. Corporations, however, were more likely to purchase properties in neighborhoods with higher shares of blacks and foreign-born residents, and individual investors were still more likely to purchase properties in neighborhoods with higher shares of foreign-born residents. The results for only properties purchased from REOs are similar to the results presented.

[9] Models using the owner type as of March 2013 and models using 2005-2009 ACS neighborhood characteristics yield similar results.

References

Been, V., Ellen, I.G., & Madar, J. (2009). The High Cost of Segregation: Exploring Racial

Disparities in High-Cost Lending. *Fordham Urban Law Journal, 36*, 361-93.

Bocian, D.G., Davis, D., Garrison, S. & Sermons, B. (2012). *The State of Lending and its Impacts

on U.S. Households*. Washington, DC: Center for Responsible Lending.

Calem, P., Hershaff, J.E., & Wachter, S.M. (2004). Neighborhood Patterns of Subprime Lending:

Evidence from Disparate Cities. *Housing Policy Debate*, *15*, 603-22.

Cohen, L.E., & Felson, M. (1979). Social Change and Crime Rate Trends: A Routine Activity

Approach. *American Sociological Review*, *44,* 588-608.

Coulton, C., Chan, T., Schramm, M., & Mikelbank, K. (2008). *Pathways to Foreclosure: A

Longitudinal Study of Mortgage Loans, Cleveland and Cuyahoga County, 2005-2008*.

Cleveland, OH: Center on Urban Poverty and Community Development.

Cui, L. (2010). *Foreclosure, Vacancy, and Crime.* Unpublished manuscript. Retrieved from

http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1773706.

Ellen, I.G., Lacoe, J., & Sharygin, C.A. (2012). Do Foreclosures Cause Crime? *Journal of Urban

Economics*, *74,* 59-70.

Ellen, I.G., Mader, J., & Weselcouch, M. (2014). The Foreclosure Crisis and Community

Development: Exploring REO Dynamics in Hard-Hit Neighborhoods. *Housing Studies*.

Advance online publication. doi: 10.1080/02673037.2014.882496.

Faber, J.W. (2013). Racial Dynamics of Subprime Mortgage Lending at the Peak. *Housing Policy

Debate*, *23*, 328-49.

Fisher, L.M., & Lambie-Hanson, L. (2012). Are Investors the Bad Guys? Tenure and

Neighborhood Stability in Chelsea, Massachusetts. *Real Estate Economics, 40*, 351–86.

Fisher, L.M., Lambie-Hanson, L., & Willen, P.S. (2014). The Role of Proximity in Foreclosure

Externalities: Evidence from Condominiums (Working Paper No. 20080). Cambridge,

MA: The National Bureau of Economic Research.

Frame, S. (2010). Estimating the Effect of Mortgage Foreclosures on Nearby Property Values: A

Critical Review of the Literature. *Economic Review, 9*(3), 1–9.

Galster, G. (1983). Empirical Evidence on Cross-tenure Differences in Home Maintenance and

Conditions. *Land Economics, 59*, 107–113.

Geis, K.J., & Ross, C.E. (1998). A New Look at Urban Alienation: The Effect of Neighborhood

Disorder on Perceived Powerlessness. *Social Psychology Quarterly*, *61,* 232-246.

Gerardi, K., Rosenblatt, E., Yao, V., & Willen, P. (2012). Foreclosure Externalities: Some New

Evidence (Working Paper No. 18353). Cambridge, MA: The National Bureau of Economic

Research.

Herbert, C., Lambie-Hanson, L., Lew, I. & Sanchez-Moyano, R. (2013). *The Role of Investors in

Acquiring Foreclosed Properties in Boston.* Washington, DC: What Works Collaborative.

Hipp, J.R., Tita, G.E., & Greenbaum, R.T. (2009). Drive-Bys and Trade-Ups: Examining the

Directionality of the Crime and Residential Instability Relationship. *Social Forces*, *87*,

1778-812.

Hwang, J., Hankinson, M., & K.S. Brown. (2014). Racial and Spatial Targeting: Subprime Lending

within and across Metropolitan Areas. *Social Forces*. Advance online publication. doi:

10.1093/sf/sou99.

Immergluck, D. (2002). Redlining Redux: Black Neighborhoods, Black-Owned Firms, and the

Regulatory Cold Shoulder. *Urban Affairs Review*, *38*, 22-41.

Immergluck, D. (2008). From the Subprime to the Exotic: Excessive Mortgage Market Risk and

Foreclosures. *Journal of the American Planning Association, 74,* 59-76.

Immergluck, D. (2010). Holding or Folding? Foreclosed Property Durations and Sales during the

Mortgage Crisis. In P. Chakrabarti, M. Lambert, & M. H. Petrus (Eds.), *REO and Vacant*

Properties: Strategies for Neighborhood Stabilization (pp. 33-46). Washington, DC:

Federal Reserve Board and Federal Reserve Banks of Boston and Cleveland.

Immergluck, D., & Law, J. (2014). Investing in Crisis: The Methods, Strategies, and Expectations

of Investors in Single-Family Foreclosed Homes in Distressed Neighborhoods. *Housing*

Policy Debate. Advance online publication. doi: 10.1080/10511482.2013.850733.

Immergluck, D., & Smith, G. (2006). The External Costs of Foreclosure: The Impact of Single-

Family Mortgage Foreclosures on Property Values. *Housing Policy Debate*, *17*, 57-78.

Kochhar, R., & Fry, R. (2014). *Wealth Inequality Has Widened along Racial, Ethnic Lines Since*

End of Great Recession. Washington, DC: Pew Research Center. Retrieved from

http://www.pewresearch.org/fact-tank/2014/12/12/racial-wealth-gaps-great-

recession/.

Lambie-Hanson, L. (2014). When Does Delinquency Result in Neglect? Mortgage Distress and

Property Maintenance in Boston (Public Policy Discussion Paper 13-1). Boston, MA:

Federal Reserve Bank of Boston.

Levine, J., & Gershenson, C. (2014). From Political to Material Inequality: Race, Immigration,

and Requests for Public Goods. *Sociological Forum, 29,* 607-27.

Mallach, A. (2013). Investors and Housing Markets in Las Vegas: A Case Study. Washington, DC:

What Works Collaborative.

Mallach, A. (2014). Lessons from Las Vegas: Housing markets, Neighborhoods, and Distressed

Single-Family Property Investors. *Housing Policy Debate, 24,* 769-801

Perkins, D.D., & Taylor, R. (1996). Ecological Assessments of Community Disorder: Their

Relationship to Fear of Crime and Theoretical Implications. *American Journal of

Community Psychology*, *24,* 63–107.

Pfeiffer, D., & Molina, E.T. (2013). The Trajectory of REOs in Southern California Latino

Neighborhoods: An Uneven Geography of Recovery. *Housing Policy Debate*, *23,* 81-109.

Pfeiffer, D., Wallace, D., & Chamberlain, A. (2014). Is Investor Purchasing of Foreclosures

Related to Neighborhood Crime? Evidence from a Phoenix Suburb. *Housing Policy

Debate*. Advance online publication. doi:

http://dx.doi.org/10.1080/10511482.2014.923924.

Raleigh, E., & Galster, G. (2014). Neighborhood Disinvestment, Abandonment, and Crime

Dynamics. *Journal of Urban Affairs*. Advance online publication. doi:

10.1111/juaf.12102.

Sampson, R.J., Morenoff, J.D., & Gannon-Rowley, T. (2002). Assessing neighborhood effects:

Social Processes and New Directions in Research. *Annual Review of Sociology, 28,* 443-

78.

Sampson, R.J., & Raudenbush, S. (1999). Systematic Social Observation of Public Spaces: A New

Look at Disorder in Urban Neighborhoods. *American Journal of Sociology, 105,* 603–51.

Schuetz, J., Been, V., & Ellen, I.G. (2008). Neighborhood Effects of Concentrated Mortgage

Foreclosures. *Journal of Housing Economics*, *17,* 306-19.

Sharkey, P., & Faber, J.W. (2014). Where, When, Why, and For Whom Do Residential Contexts

    Matter? Moving Away from the Dichotomous Understanding of Neighborhood Effects.

    Annual Review of Sociology, 40, 559-79.

Shaw, C.R., & McKay, H.D. (1969). *Juvenile Delinquency and Urban Areas* (Revised ed.). Chicago,

    IL: University of Chicago Press.

Smith, G., & Duda, S. (2009). *Roadblock to Recovery: Examining the Disparate Impact of Vacant*

    Lender-Owned Properties in Chicago. Chicago, IL: Woodstock Institute.

Wilson, J.Q., & Kelling, G. (1982, March 1). Broken Windows: The Police and Neighborhood

    Safety. *Atlantic Monthly*, pp. 29-38.
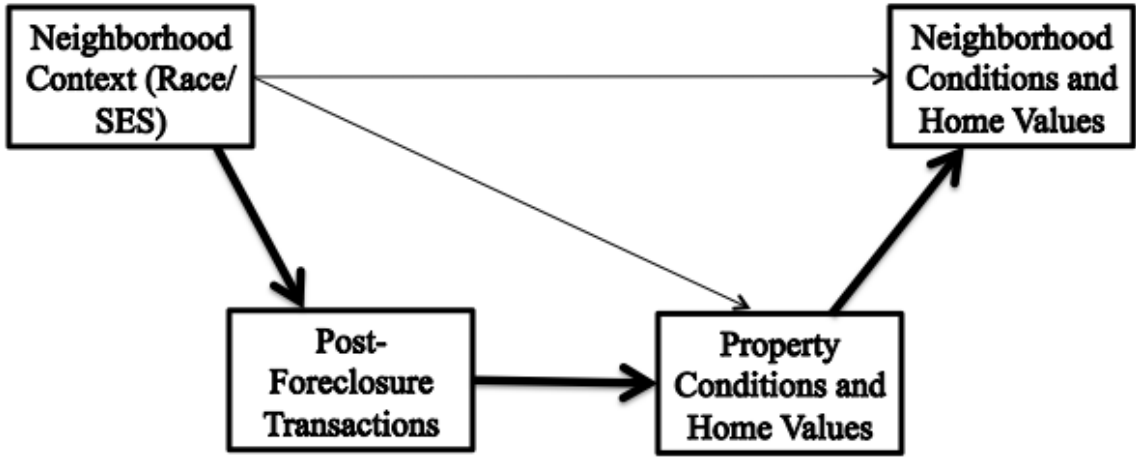
Figure 1: Foreclosure and Neighborhood Conditions Framework
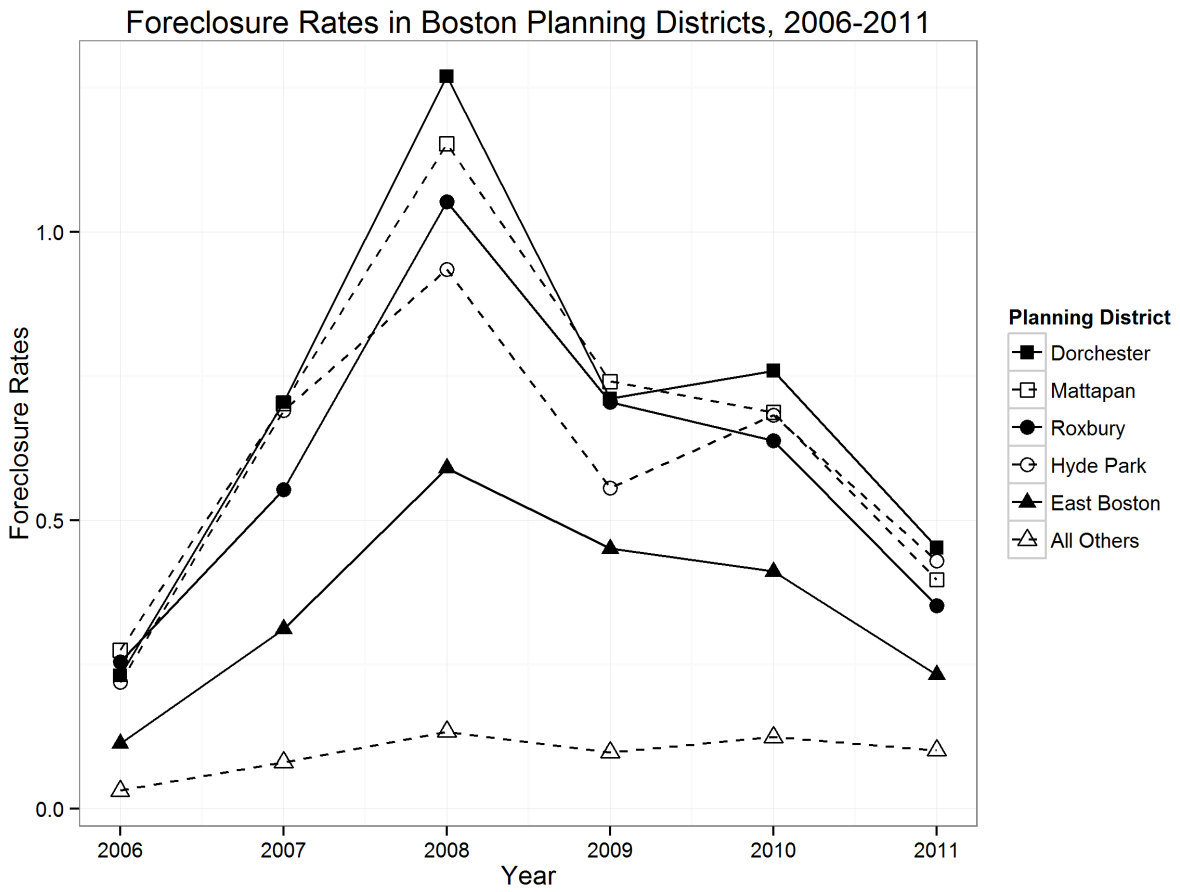
Figure 2: Foreclosures by Boston Planning Districts, 2006-2011

Table 1: Average Characteristics of High vs. Low Foreclosure Planning Districts

Variable	High	Low
% Non-Hispanic white	25.4	68.9
% Non-Hispanic black	45.4	7.3
% Hispanic	17.5	13.2
% Asian	4.4	7.6
% Foreign-born	28.8	21.5
Median Household Income ($)	35,492	44,864
% Poverty	16.9	12.3
% Bachelor's degree	15.6	40.9
% Homeownership	35.4	35.5
% Vacant	5.9	4.5
Median Housing Value ($)	177,448	226,158

Table 2: Property-level Descriptive Statistics (N = 3,078)

Variable	Freq.	Variable	Freq.
Year		Post-Foreclosure Buyer (Third Party at	
2006	200	Auction or from REO)	
2007	537	Owner-Occupant	820
2008	943	Individual Investor	1,016
2009	555	LLC/Corp.	805
2010	532	Trust	223
2011	311	Other	72
Property Type		Bank-owned (REO)	142
Condominium	1,002	Buyers from Post-Foreclosure Investors	
Single-Family Residential	585	(Individual Investor, LLC/Corp., Trust)	
2-3 Family Residential	1,491	Owner-Occupant	383
Service Requests		Individual Investor	258
Any	669	LLC/Corp.	185
Housing	86	Trust	37
Private Neglect	101	Other	4
Public Denigration	49	Owner (as of March 2013)	
Human-generated Problem	124	Owner-Occupant	1,263
Inspection Violations		Individual Investor	785
Any	470	LLC/Corp	687
Maintenance	229	Trust	181
Permits Issued	205	Bank-owned (REO)	150
Median Assessed Value ($/sq. ft.)	95.03	Other	12
Properties with Multiple Foreclosures	161	Median Sale Times	
Sold at Auction to Third Party	551	Sold from REO	186
		Sold by Post-Foreclosure Investor	212

Notes: Counts include properties with multiple foreclosures.

Table 3: Block Group-level Descriptive Statistics (N = 236)

Variable	Mean	SD	Min.	Max.
U.S. Census data, 2000				
% Non-Hispanic white	25.40	28.10	0.10	97.31
% Non-Hispanic black	45.38	30.55	0.42	92.93
% Hispanic	17.47	13.80	1.13	66.25
% Asian	4.35	7.61	0.00	43.07
% Foreign-born	28.8	12.95	2.32	81.20
Median Household Income ($)	49,688	15,699	13,475	99,750
% Poverty	16.86	10.41	0.00	51.76
% Homeownership	35.38	17.15	0.78	90.37
% Vacant	5.87	3.44	0.37	21.15
Median Assessed Values ($ per sq. ft.)	99.61	45.92	41.74	285.60
Foreclosure Variables, 2006-2013				
Foreclosure rate	3.53	2.25	0.19	11.14
Post-Foreclosure Buyers				
% Owner-Occupants	30.05	22.28	0.00	100.00
% Individual Investors	31.80	19.51	0.00	100.00
% Corporations	25.13	18.47	0.00	100.00
% Trusts	6.88	11.16	0.00	100.00
% Bank-Owned (REOs)	4.13	6.43	0.00	33.33
Median REO Sale Time	274	157	0.00	1,370
Service Requests, 2011				
Overall rate	77.84	49.33	16.82	645.57
Housing-related rate	1.48	1.28	0.00	7.88
Private Neglect rate	2.05	1.51	0.00	8.90
Public Denigration rate	2.40	2.36	0.00	23.03
Human-Generated Problem rate	3.98	2.84	0.00	25.33
Inspection Violations, 2011				
Overall rate	40.16	36.84	0.00	220.45
Housing Maintenance	9.45	10.20	0.00	62.55
911 Reports, 2011-2012				
Violent Crime rate	8.92	8.12	0.00	89.87
Non-Violent Disorder rate	4.63	4.00	0.00	45.51
Crime Reports, 2011-2013				
Overall rate	50.75	40.31	9.14	339.74
Robbery rate	0.38	0.49	0.00	2.53
Shooting rate	0.48	0.72	0.00	3.44
Burglary rate	4.65	3.40	0.67	33.97
Building Permits Rate, 2011	0.53	1.57	0.00	11.73

Notes: Dollars amounts are adjusted to 2013 dollars. Rates are per 100 housing units (in 2000). Only one permit per parcel is counted.

Table 4: Percentage of Post-Foreclosure Buyers by Above and Below Median of Selected Block Group Characteristics

Variable	Owner Occupants	Individual Investors	Corpo- rations	Trusts	Other	REOs
Median Income						
$13.5K - $48.2K	23.8**	33.8	27.3	7.5	2.8†	4.8
$48.3K - $99.8K	29.1	32.3	25.2	7.0	1.9	4.5
Poverty Rate						
0.0 - 16.6%	31.6**	31.9	24.5*	5.5**	2.0	4.5
16.7 - 51.8%	21.8	34.1	27.8	8.9	2.7	4.7
Vacancy Rate						
0.4 - 5.3%	31.9*	32.8	23.4**	5.7*	2.2	4.1
5.4 - 21.1%	21.3	33.3	28.9	8.8	2.5	5.2
Ownership Rate						
0.8 - 32.7%	22.2**	34.2	28.0*	8.4*	2.2	5.1
32.8 - 90.4%	30.5	31.9	24.6	6.3	2.5	4.2
Percent white						
0.1- 9.9%	22.0**	32.3	28.7**	9.0**	2.7	5.3†
10.0 - 97.3%	32.3	33.9	23.0	5.0	1.9	3.8
Percent black						
0.4 - 49.0%	32.4**	35.3*	22.1**	4.8**	1.7*	3.8†
49.1 - 92.9%	22.3	31.3	29.2	9.1	2.9	5.3
Percent Hispanic						
1.1 - 13.2%	29.0**	30.9*	25.5	6.9	2.5	5.0
13.3 - 66.2%	24.0	35.3	26.8	7.6	2.1	4.2
Percent Asian						
0.0 - 1.4%	25.8	29.3†	28.6	9.0	1.7	5.7
1.5 - 43.1%	25.9	33.3	25.9	7.2	2.8	4.8
Percent Foreign						
2.3-28.1%	27.7	30.7**	26.6	7.4	2.2	5.4*
28.2 - 81.2%	25.6	35.3	25.7	7.1	2.5	3.8

Note: ** p<0.01, * p<0.05, †p<0.10 (two-tailed tests). Median thresholds are based on the 236 block groups used in the analysis and the 2000 U.S. Census Estimates. Dollars amounts are adjusted to 2013 dollars.

Table 5: Odds Ratios and Confidence Intervals for Multilevel Multinomial Logistic Regression Results for Foreclosure Buyer Types on Block Group Characteristics

	Individual Investors	Corpo- rations	Trusts	REO
Block-group characteristics				
Intercept	0.789	0.091**	0.009**	0.000**
	(0.522, 1.193)	(0.050, 0.165)	(0.002, 0.045)	(0.000, 0.000)
% black	1.011**	1.016**	1.017**	1.020*
	(1.005, 1.018)	(1.010, 1.023)	(1.005, 1.029)	(1.001, 1.039)
% Hispanic	1.011	1.011	1.016	1.020
	(0.996, 1.025)	(0.993, 1.028)	(0.989, 1.044)	(0.971, 1.071)
% Asian	0.999	0.997	0.988	1.001
	(0.982, 1.015)	(0.977, 1.019)	(0.955, 1.022)	(0.935, 1.072)
% foreign-born	1.013*	1.003	1.001	1.007
	(1.000, 1.026)	(0.988, 1.019)	(0.980, 1.022)	(0.970, 1.046)
Ownership rate	1.002	0.987	0.980†	0.985
	(0.987, 1.017)	(0.972, 1.003)	(0.956,1.004)	(0.943, 1.029)
Vacancy rate	1.043	1.027	1.036	1.068
	(0.989, 1.101)	(0.967, 1.091)	(0.960, 1.118)	(0.943, 1.210)
Poverty rate	1.009	0.999	1.010	1.004
	(0.992, 1.027)	(0.978, 1.020)	(0.982,1.040)	(0.949, 1.062)
Median household income	1.015	1.015	1.036†	1.006
(in thousands)	(0.994, 1.037)	(0.991, 1.040)	(0.999, 1.074)	(0.948, 1.068)
Median assessed value	1.736*	1.100	0.907	0.571
(per square foot, logged)	(1.060, 2.841)	(0.678, 1.785)	(0.421, 1.957)	(0.152, 2.140)
Property-level characteristics				
2-3 Family Residence	2.505**	2.882**	13.86**	1.939*
	(1.933, 3.246)	(2.081, 3.994)	(5.306, 36.21)	(1.037, 3.625)
Condominium	3.354**	3.888**	20.65**	1.382
	(2.426, 4.638)	(2.727, 5.542)	(7.58,56.25)	(0.679, 2.814)
2007	0.619*	2.080*	2.138	2.293
	(0.404, 0.949)	(1.140, 3.795)	(0.708, 6.457)	(0.292, 18.006)
2008	0.637*	3.407**	2.831†	12.25**
	(0.425, 0.955)	(1.861, 6.238)	(0.950, 8.439)	(1.872, 80.162)
2009	0.804	6.119**	3.443*	15.00**
	(0.530, 1.220)	(3.295,11.36)	(1.089, 10.89)	(2.085,107.931)
2010	0.766	6.956**	2.763†	80.32**
	(0.494, 1.187))	(3.834,12.62)	(0.903, 8.457)	(11.76, 548.8)
2011	0.882	6.981**	2.835	756.2**
	(0.485, 1.603)	(3.593,13.56)	(0.794,10.12)	(107.9, 5300)
Assessed Value	0.999	0.999	0.997	1.000
	(0.997, 1.001)	(0.997, 1.001)	(0.992, 1.003)	(0.996, 1.005)
Sale time (logged)	0.884**	0.759**	0.642**	11.16**
	(0.844, 0.926)	(0.723, 0.797)	(0.572, 0.720)	(7.869, 15.82)
Level-2 Residual (Unconditional Model)	0.359	0.506	1.094	0.523
Level-2 Variance in Intercepts (Random				
Intercept and Slope Model)	0.272	0.494	0.786	2.687
Level-2 Variance Explained	0.320	0.403	0.392	-0.064

Note: ** p<0.01, * p<0.05, †p<0.10 (two-tailed tests). Level-1 N = 3,078. Level-2 N = 236. Results for "Other" buyers available upon request. Robust standard errors are used to calculate confidence intervals.

Table 6: Percent of Foreclosed Properties with Maintenance Indicators Purchased by Each Buyer Type

	Owner Occupants	Individual Investors	Corpo- rations	Trusts	Other	REOs
Service Requests						
Any	23.05	21.26	18.76	25.11	23.61	28.17
Housing-related	1.46	3.25	2.98	4.93	1.39	3.52
Private Neglect	1.83	3.64	3.73	5.38	1.39	4.23
Public Denigration	1.71	1.57	1.61	1.35	0.00	2.11
Human-Generated	2.68	4.33	4.47	6.28	1.39	4.93
Inspection Violations						
Any	13.05	13.78	14.41	13.00	15.28	12.68
Maintenance	5.85	6.40	8.70	6.73	6.94	5.63
911 Reports						
Violent	1.59	1.77	2.61	2.24	0.00	2.11
Social Disorder	0.98	1.67	2.24	3.14	0.00	1.41
Issued Permits						
Any	9.51	5.81	6.34	3.59	6.94	2.82

Table 7: Odds Ratios and Confidence Intervals for Multilevel Logistic Regression Results for Maintenance Indicators on Types of Foreclosure Buyers

Dependent Variable	Individual Investors	Corpo- rations	Trusts	REOs
Service Requests				
Any	1.083	0.820	1.473†	1.177
	(0.855, 1.372)	(0.617, 1.089)	(0.967, 2.242)	(0.777, 1.785)
Housing	1.561	1.557	2.652*	1.750
	(0.870, 2.799)	(0.831, 2.916)	(1.259, 5.585)	(0.636, 4.812)
Private Neglect	1.536	1.621	2.750*	1.769
	(0.905, 2.607)	(0.804, 3.266)	(1.137, 6.652)	(0.630, 4.963)
Public Denigration	1.118	1.024	1.132	1.229
	(0.514, 2.430)	(0.393, 2.667)	(0.310, 4.139)	(0.268, 5.638)
Human-Generated	1.386	1.453	2.516*	1.306
	(0.849, 2.263)	(0.760, 2.780)	(1.118, 5.660)	(0.495, 3.442)
Inspection Violations				
Any	1.459*	1.408†	1.392	1.123
	(1.075, 1.981)	(0.643, 2.206)	(0.812, 2.389)	(0.574, 2.196)
Maintenance	1.625*	1.987**	1.866†	1.033
	(1.074, 2.460)	(1.244, 3.172)	(0.959, 3.634)	(0.405, 2.639)
911 Reports				
Violent	1.104	1.662	1.177	0.835
	(0.494, 2.467)	(0.644, 4.288)	(0.371, 3.739)	(0.185, 3.763)
Social Disorder	1.413	1.875	2.376	1.892
	(0.620, 3.221)	(0.700, 5.016)	(0.828, 6.814)	(0.357, 10.03)
Issued Permits				
Any	0.744	0.656	0.474†	0.364†
	(0.494, 1.120)	(0.382, 1.126)	(0.219, 1.025)	(0.129, 1.028)

Note: ** $p<0.01$, * $p<0.05$, † $p<0.10$ (two-tailed test). Level-1 N = 3,078 for all models, except N = 3,006 for Public Denigration Service Requests and 911 Reports (excludes "Other"). Level-2 N = 236. Results for "Other" buyers and control variables available upon request. Robust standard errors are used to calculate confidence intervals.

Table 8: Pearson Correlations for Block Group Logged Crime and Disorder Rates and Foreclosure Variables

	% Owner Occupants	% Individual Investors	% Corpo-rations	% Trusts	%REOs	Foreclosure Rates
Service Requests						
Any	0.02	0.00	0.04	-0.10	-0.07	0.19**
Public Denigration	-0.15*	0.18*	0.01	0.02	-0.08	0.06
Human-Generated	-0.21**	0.12†	0.09	0.07	-0.04	0.18*
911 Reports						
Violent	-0.24**	0.13†	0.08	0.18*	-0.06	0.26**
Social Disorder	-0.19**	0.13†	0.03	0.14†	-0.07	0.16*
Crime						
Any	-0.23**	0.10	0.14*	0.11†	-0.14*	0.26**
Robbery	-0.06	-0.02	0.06	0.07	-0.12†	0.09
Shooting	-0.22**	-0.04	0.21**	0.15*	0.03	0.33**
Burglary	-0.20**	0.05	0.14*	0.09	-0.09	0.32**

Note: ** p<0.01, * p<0.05, †p<0.10. N = 236.

Table 9: Spatially Lagged Regression Results for Block Group Logged Crime and Disorder Rates on Foreclosure Characteristics

	Intercept	% Individual Investors	% Corpo- rations	% Trusts	%REO	Foreclosure Rate	AIC
Service Requests							
Any	4.073**	-0.001	0.000	-0.001	-0.003		139
	(0.427)	(0.001)	(0.001)	(0.002)	(0.003)		
	4.010**	-0.001	0.000	-0.002	-0.004	0.018†	139
	(0.425)	(0.001)	(0.001)	(0.002)	(0.003)	(0.11)	
Public Denigration	0.891**	0.001	0.001	0.000	-0.002		327
	(0.157)	(0.002)	(0.002)	(0.003)	(0.005)		
	0.901**	0.001	0.000	-0.000	-0.003	0.014	329
	(0.173)	(0.002)	(0.002)	(0.003)	(0.005)	(0.016)	
Human-generated	1.415**	-0.001	0.001	-0.002	-0.003		313
	(0.189)	(0.002)	(0.002)	(0.003)	(0.005)		
	1.442**	-0.001	-0.001	-0.002	-0.004	0.032*	311
	(0.188)	(0.002)	(0.002)	(0.003)	(0.005)	(0.015)	
911 Reports							
Violent	1.555**	0.001	-0.001	0.004	-0.008†		355
	(0.219)	(0.002)	(0.002)	(0.003)	(0.005)		
	1.657**	0.000	-0.002	0.003	-0.009*	0.052**	345
	(0.217)	(0.002)	(0.002)	(0.003)	(0.005)	(0.016)	
Social Disorder	1.197**	0.002	0.000	0.004	-0.006		334
	(0.197)	(0.002)	(0.002)	(0.003)	(0.005)		
	1.231**	0.001	-0.000	0.003	-0.007	0.035*	331
	(0.196)	(0.002)	(0.002)	(0.003)	(0.005)	(0.016)	
Crime							
Any	3.187**	0.000	0.001	0.001	-0.014**		344
	(0.371)	(0.002)	(0.002)	(0.003)	(0.005)		
	3.359**	-0.001	-0.000	-0.000	-0.016**	0.057**	332
	(0.369)	(0.002)	(0.002)	(0.003)	(0.005)	(0.016)	
Robbery	0.462**	-0.002	0.000	0.001	-0.007**		137
	(0.100)	(0.001)	(0.001)	(0.002)	(0.003)		
	0.477**	-0.002	-0.000	0.000	-0.007*	0.017	136
	(0.100)	(0.001)	(0.001)	(0.002)	(0.003)	(0.011)	
Shooting	0.303**	-0.000	0.003*	0.002	-0.002		230
	(0.114)	(0.001)	(0.002)	(0.002)	(0.004)		
	0.351**	-0.001	0.002	0.001	-0.003	0.036**	220
	(0.113)	(0.001)	(0.002)	(0.002)	(0.004)	(0.012)	
Burglary	1.434**	-0.001	0.001	0.001	-0.007†		275
	(0.212)	(0.002)	(0.002)	(0.003)	(0.004)		
	1.520**	-0.002	-0.001	-0.000	-0.009*	0.066**	254
	(0.207)	(0.002)	(0.002)	(0.002)	(0.004)	(0.014)	

Note: ** p<0.01, * p<0.05, †p<0.10. N = 236. Dependent variables are logged rates per 100 housing units. Foreclosure rates are per 100 housing units. Control variables not shown are centered.