The Evaluation of the Neighborhood Stabilization Program

U.S. Department of Housing and Urban Development | Office of Policy Development and Research

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Prepared for:

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Prepared by:

Jonathan Spader
Alvaro Cortes
Kimberly Burnett
Larry Buron
Michael DiDomenico
Anna Jefferson
Stephen Whitlow
Jennifer Lewis Buell
Abt Associates

Christian Redfearn
Jenny Schuetz
University of Southern California

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Disclaimer

Foreword

The Neighborhood Stabilization Program (NSP), which built on Community Development Block Grant concepts, was part of a package of U.S. Department of Housing and Urban Development programs adopted to deal with the consequences of the housing market collapse. NSP had three rounds of funding, all directed toward assisting communities as they addressed the neighborhood effects of the wave of foreclosures that followed the end of the housing boom. The principal concern was that the foreclosures had a contagion effect, depressing the value and maintenance of surrounding properties and intensifying the crisis at the neighborhood level. The analysis focuses on the second round (NSP2), which was distinguished by a competitive selection of grantees, designed to encourage explicit local strategies and concentrated efforts so as to increase the impact of the funded efforts through a spillover effect from the properties treated by the program.

The research results reflect a sample of the diverse counties receiving NSP2 investments, with an oversampling of counties with the largest or most concentrated investments, which were expected to be most informative about the outcomes and impacts of NSP2. Note that NSP2 tracts tended to be primarily rental neighborhoods and characterized by highly distressed housing markets and demographic disadvantages, such as low household income and educational attainment, even before the foreclosure crisis.

The acquisition and rehabilitation of foreclosed and abandoned properties was the most prevalent type of NSP2 activity, accounting for one-half of the funding. Grantees implemented the program in many different market environments, all highly distressed, using many different approaches or combinations of eligible activities. The relatively low intensity of NSP2 treatment likely contributed to quite limited average impacts of NSP2 on housing market outcomes, such as vacancies, tenure, sales volume, and financial distress. No consistent spillover effect at the property level of NSP2 investment was evident on nearby sales housing prices.

Relative to the size of the housing market it was intended to influence, NSP2 was too modestly funded to consistently arrest the declines in property values or achieve the impacts that were hoped for. The local market pressures on grantees to shift their resources away from concentrated efforts in single-family, owner-occupied housing toward other more accessible and scattered targets were too strong in many instances. Numerous grantees viewed NSP2 as a complement to their longer term neighborhood revitalization strategies, so the impacts may continue to accrue.

Katherine M. O'Regan
Assistant Secretary for Policy Development & Research
Department of Housing and Urban Development

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Executive Summary

The past decade has been marked by a massive housing bubble and foreclosure crisis. During the first half of the decade, home prices nationally experienced unprecedented growth, increasing 85 percent in real terms between 1997 and 2005 (Shiller, 2008). The increase was notable for its sheer magnitude and because it occurred in many markets throughout the country. In a report to Congress on the causes of the foreclosure crisis, the U.S. Department of Housing and Urban Development (HUD) detailed how, in a few short years, the country saw a housing market that had seemingly limitless potential for growth change into one that brought the economy to the brink of collapse (HUD, 2010).

The report notes that early stages of the crisis were driven by high rates of delinquency among borrowers, with risky, subprime loans, especially among states most affected by the crisis: Arizona, California, Florida, and Nevada. Subprime mortgages rapidly grew in availability and popularity from 2003 onward because of several factors, including the easing of regulatory authority over the mortgage industry, the packaging of mortgages into sophisticated securities that attracted investors, and the willingness of lenders to make risky but highly profitable loans because they thought that rising home values would minimize the risk of borrower default. Rising home values, driven in part by the easy availability of loans, fueled the construction of new homes and created the need for even riskier mortgage products to help buyers purchase more expensive homes—a need lenders and investors were eager to meet.

This cycle came to a dramatic halt in 2007 when housing values began to plummet, exposing the overvalued housing market. The Mortgage Bankers Association released its estimate of the national foreclosure start rate—the percentage of mortgages entering into foreclosure—revealing a new record high of 0.54 percent. The rate had doubled to 1.08 percent by the second quarter of 2008 and reached 1.37 percent by early 2009. At the same time, unemployment began to rise, placing further stress on the economy and increasing mortgage defaults. Indeed, although the early rise in foreclosure rates was driven by the failure of subprime loans, as the economic recession deepened, failures of prime mortgages soon eclipsed that of subprime loans. All told, the national foreclosure crisis had precipitated the most profound financial crisis since the Great Depression.

The Foreclosure Crisis and Neighborhood Effects

Understanding neighborhood change is one of the most complex and challenging areas in urban economics and community development policy, and the impacts of the foreclosure crisis on neighborhoods are vast and still unfolding. During normal years, the processes through which neighborhoods improve and decline are numerous and varied. As the housing stock ages, neighborhoods are continuously in flux and individual property owners make interdependent decisions about investment and maintenance. These decisions also interact with population dynamics and economic conditions as communities evolve and in some cases dramatically transition through nonlinear tipping processes.

The existing research describes how foreclosures impact the value of neighboring properties. Three mechanisms are commonly discussed: (1) the visual blight caused by poorly maintained properties may reduce the value of neighboring homes in the eyes of potential buyers, (2) the presence of foreclosed properties may be a negative signal to both sellers and buyers about the future stability of the neighborhood and the risk associated with a home purchase, and (3) the lower sales value of foreclosed or preforeclosure properties may affect the assessed value of neighboring homes if foreclosed properties are used as comparable properties for setting list prices. As these mechanisms combine to depress

neighboring home values, property owners can be expected to respond to the accompanying signals about future property values and neighborhood stability. These independent responses can trigger a cascading series of events that could create fundamental change in the composition and trajectory of a neighborhood. The net result can be the collapse of a neighborhood from one condition, or equilibrium, to another, lower one. Indeed, several studies conducted since the emergence of the crisis have demonstrated the significant negative impacts of foreclosures on neighborhood housing prices (Immergluck and Smith, 2006a; Schuetz, Been, and Ellen, 2008), municipal budgets (Apgar, Duda, and Gorey, 2005), and crime (Ellen, Lacoe, and Sharygin, 2013; Immergluck and Smith, 2006b). Underlying the concerns raised by these studies is the premise that foreclosed properties are "contagious" (Harding, Rosenblatt, and Yao, 2009), producing a series of negative spillover effects throughout the surrounding neighborhoods.

Overview of the Neighborhood Stabilization Program

To address the risks associated with the foreclosure crisis, Congress adopted a series of programs beginning as early as 2007. Specifically to address the effects of foreclosures on communities, Congress enacted the Neighborhood Stabilization Program (NSP), a series of three related initiatives to fund community responses to the foreclosure crisis.

Between 2008 and 2010, Congress authorized $6.9 billion in three separate enactments to create and support NSP (commonly referred to as NSP1, NSP2, and NSP3). Key components shared by each NSP round are the specific activities grantees can undertake to help stave off the negative effects of foreclosures. The eligible activities are (1) establishing financial assistance for the purchasers of foreclosed homes, (2) purchasing and rehabilitating homes and residential properties that have been abandoned or foreclosed upon, (3) establishing and operating land banks, (4) demolishing blighted structures, and (5) redeveloping demolished or vacant properties as housing. NSP also encouraged grantees to target areas with the greatest need, as indicated by the highest percentage of foreclosed properties, the highest percentage of home purchases financed through subprime loans, and the greatest likelihood of a future rise in foreclosures.[1]

The original version of the program, although successful on some measures, had a few notable limitations that were later addressed by NSP2. A significant change was that NSP2 funds were distributed through a competitive grant process rather than a formula-based process, which was intended in part to address the lack of capacity among some NSP1 grantees (Immergluck, 2013a; Joice, 2011). To enhance capacity, the list of eligible grantees was expanded from states and local governments to include nonprofit organizations, and collaborations between multiple partners were encouraged. HUD asked applicants to demonstrate their organizational capacity through a narrative description of their previous experiences in successfully completing activities relevant to their proposed NSP2 activities. NSP2 set aside $50 million for technical assistance to grantees to further enhance their capacity.

NSP2 included several additional changes from NSP1. Among the key changes, NSP2 required applicants to identify eligible target areas for concentrated program activities, which had to be census tracts with high average foreclosure risk scores or foreclosure-plus-vacancy risk scores, both of which were calculated by HUD. Also, for grantees purchasing foreclosed properties, HUD reduced the discount

[1] For additional details about the three rounds of NSP funding, see http://www.huduser.org/portal/datasets/NSP_target.html.

required at purchase between 5 percent and 15 percent below appraised value to 1 percent below. Finally, NSP2 increased the timeframe for obligating program funds from 18 to 36 months, with grantees required to expend at least 50 percent of allocated funds within 2 years (by February 11, 2012) and 100 percent of funds within 3 years (by February 11, 2013).[2]

NSP2 grants were awarded to 56 grantees throughout the country. Activities of the 56 grantees cover 3,068 census tracts in 133 counties and 29 states. Of the $1.93 billion in NSP2 funding, approximately $947 million went to 24 grantees operating exclusively in the states that were hit hardest by the national foreclosure crisis: California, Florida, Michigan, Nevada, and Ohio.[3]

The Evaluation and Findings

The primary goal of NSP2 is to arrest the spillover effects associated with foreclosures. In February 2011, HUD commissioned Abt Associates and its partners—Drs. Christian Redfearn and Jenny Schuetz from the University of Southern California and Concentrance Consulting Group—to explore whether NSP2 successfully achieved this goal. The main objectives of the evaluation are to understand how the program was implemented in different market contexts and to evaluate the impacts of NSP in neighborhoods where program activities occurred. The evaluation focuses on NSP2 because it was designed to improve upon NSP1 and therefore has the greatest potential to affect change in neighborhoods that have high concentrations of foreclosures. The study also explores the hypothesis that concentrated NSP2 activities are more likely to produce positive neighborhood outcomes than dispersed activities.

The study draws from a rich set of data sources and uses both qualitative and quantitative research techniques to evaluate the program. The data sources are described below:

- Transaction records for millions of property foreclosures and sales in NSP2 and comparison neighborhoods.
- Property-level information for more than 6,300 NSP2 properties in the study.
- Administrative data sources on vacancies and crime.
- Qualitative interviews with NSP2 grantees, their partners, and national intermediaries (that is, Chicanos Por La Causa, Community Builders, Habitat for Humanity, and Self Help).
- Field observations of neighborhoods with concentrated foreclosures.

Although the study reports on all 56 NSP2 grantees, the primary findings are based on 19 counties (and 28 NSP2 grantees). The 19 counties were selected to provide market diversity and a high level of NSP2 investment per county and tract. Five market types were created to produce diversity in the purposive sample of counties: (1 and 2) Boom-Bust Sand States (BBSS) and Boom-Bust East Coast (BBEC)—counties that experienced large price appreciation rates during the boom period and crashed dramatically during the bust; (3) Boom-Stable (BS)—counties that experienced large price appreciation rates during the boom period, and then fell only slightly during the bust; (4) Slow Growth (SG)—counties that grew

[2] NSP Policy Alerts Report p. 39.

[3] http://www.hud.gov/offices/cpd/communitydevelopment/programs/neighborhoodspg/pdf/nsp2awardtotalAllocation.pdf.

modestly during the boom; and (5) Lagging/Declining (L/D)—counties that had been declining for many years before the onset of the crisis.[4]

The key research questions for the evaluation are as follows:

1. What housing investments were made by NSP2 grantees, and what factors contributed to the type and number of investments?
2. How was NSP2 implemented by grantees, and how did this vary across markets?
3. Do neighborhoods that have high concentrations of foreclosures show signs of visual blight?
4. How did NSP2 and other financially distressed neighborhoods and properties change over time in terms of vacancy rates, housing tenure, volume of sales, and level of financial distress?
5. Does increased crime accompany periods of financial distress, and what effects do NSP2 investments have on reducing the incidence of crime?
6. What is the impact of NSP2 on prices of nearby houses?

The findings for each question are summarized in turn below.

1. What housing investments were made by NSP2 grantees, and what factors contributed to the type and number of investments?

The activities supported by NSP2 funding within the 19 sample counties were documented using administrative data that NSP2 grantees reported to HUD and additional grantee data on NSP2 properties collected as part of the study. Through spring 2013, NSP2 grantees working in the sample counties had treated a total of 6,354 properties and expended $1.88 billion in NSP2 and leveraged funds. About one-half of these properties are located in L/D markets (3,156), almost a third are in BBSS markets (1,948), about 10 percent are located in BS markets, and the remainder are in BBEC (374) and SG markets (235). The majority of the properties are one-unit properties, but many are multifamily properties, particularly in BBEC markets.

Acquisition and rehabilitation activities are the core of NSP2. Of all NSP2 funding, 50 percent (representing 2,386 properties) supported this activity. Grantees located in BBSS and SG markets relied on acquisition and rehabilitation significantly more than grantees in other market types (50 percent of all activities in BBSS markets and 85 percent of all activities in SG markets). The specific activities grantees undertook in the acquisition and rehabilitation category were diverse and included the rehabilitation of both single-family and multifamily properties, homeownership, and rentals. Single-family properties were typically targeted for homeownership, while multifamily properties were more likely to be rental properties. Rentals, in turn, were typically targeted to lower income beneficiaries.

Across all of the counties in the sample, more NSP2 properties were treated with demolition than with any other activity, but wide use of this activity was isolated to a few counties. In total, 3,004 properties were demolished (47 percent of all NSP2 properties), but demolition accounted for only 2 percent of all spending.

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[4] Sample counties listed by market type. BBSS: Maricopa County, Arizona; Los Angeles, Riverside, Sarasota, and Stanislaus Counties, California; Miami-Dade and Palm Beach Counties, Florida; and Washoe County, Nevada. BEC: Cook County, Illinois; District of Columbia; and Kings County, New York. Boom-Stable: Ramsey County, Minnesota, and Philadelphia County, Pennsylvania. SG: Denver, Colorado, and Davidson County, Tennessee. L/D: Pulaski County, Arkansas; Ingham and Wayne Counties, Michigan; and Cuyahoga County, Ohio.

Financing as a standalone activity (not used in combination with acquisition and rehabilitation or redevelopment) was a key activity in both BBEC and BBSS markets but scarcely pursued in the other markets. For a few grantees, such as those in Ingham and Wayne Counties, Michigan, where the grantee's partnerships included longstanding land banks, land banking was a major activity, but the majority of grantees did not use land banking as part of their NSP2 strategy.

Almost 500 properties were redeveloped by 20 grantees in 16 counties. Redevelopment was most heavily used as a strategy in BS markets, where 20 percent of NSP2 properties were redeveloped. A few grantees in the BBEC and BBSS markets also relied heavily on redevelopment, including grantees in Kings, Miami-Dade, and Sarasota Counties, Florida.

2. How was NSP2 implemented by grantees, and how did this vary across markets?

The evaluation findings provide a rich description of how NSP2 grantees approached their implementations and how the implementations were adjusted over time to account for shifting market realities. This information was gathered in several stages, starting with a review of NSP2 applications and grantee action plans, followed by baseline grantee interviews, and followup visits after the end of the grant period.

NSP2 was implemented in many different market environments using many different approaches. Although all grantees had access to the same five activities, the activities were used in different combinations with diverse organizational and partnership structures and with varying degrees of success owing to local market conditions and other factors. Few features of the NSP2 implementations were universal across grantees.

Key features of grantees' program designs varied by the neighborhoods they targeted, their specific approaches to conducting NSP2 activities and the mix of these activities, and the tenure of the housing they intended to produce (homeownership versus rental). In targeting neighborhoods, the prevailing consideration for grantees was to coordinate their NSP2 investments with other community development activities. Grantees also considered the level of distress in the targeted areas. Grantees were as likely to target areas that had longstanding revitalization needs as to target neighborhoods with underlying strengths.

In general, grantees approached particular NSP2 activities in similar ways, as described below:

- Financing assistance was most commonly used to provide second mortgages and downpayments.
- Acquisition and rehabilitation were often used as an opportunity to renovate troubled properties to very high standards without the projects having to meet a rigid cost-benefit analysis. Without the opportunity provided by NSP2, some grantees felt that the properties they rehabilitated would have been ignored by the private market and remained sources of blight.
- The few grantees that used land banking did so for a variety of property types, including vacant lots, properties acquired but deemed unsuitable for rehabilitation, unfinished condominium projects, and commercial developments.
- Grantees opted for demolition either to remove blight in response to an overabundance of abandoned properties or when a property was deemed too expensive to rehabilitate.
- Grantees undertook redevelopment to construct large numbers of affordable multifamily units or to create high-quality single-family housing units for purchase by low-income buyers.

Grantees' activities were not static and often changed in response to changing market conditions or unanticipated obstacles in implementing other activities. The three most common changes that grantees adopted were eliminating the financing activity, shifting their acquisition focus from single-family properties to multifamily properties, and shifting their acquisition focus away from foreclosed properties. These changes were precipitated by two significant challenges in implementing NSP2: difficulty with foreclosure acquisition and the NSP2 timeline. Nearly all grantees said they faced challenges acquiring properties in the originally targeted tracts because competition with investors resulted in fewer than expected available foreclosures. The majority of grantees reported that the grant timeline was a challenge, especially the expenditure deadlines.

Challenges to acquiring foreclosures had several consequences. First, most grantees reported higher than expected rehabilitation costs. A key reason for this was that competition from investors for foreclosures forced them to acquire properties that had substantial rehabilitation needs. Second, although most grantees across the five market types intended to concentrate activities within their target neighborhoods, they were not able to concentrate activities at the level they had planned.

Implementation of NSP2 activities by grantees was facilitated by the dedication, flexibility, and skill of their own staff members, their partnerships, the technical assistance provided by HUD, and the flexibility of NSP2. Grantees also overwhelmingly reported that working with partner organizations helped them implement NSP2. Partnerships expanded grantees' staff capacity and expertise as well as their financial resources, which enabled grantees to take on larger scale projects and increased grantees' likelihood of achieving intended outcomes.

3. Do neighborhoods that have high concentrations of foreclosures show signs of visual blight?

Although the literature has demonstrated that foreclosures have a negative spillover effect on nearby housing prices, the mechanisms that create the spillover effect are not well understood. Studies frequently hypothesize that the effect results from reduced maintenance of foreclosures, which makes them identifiable, signaling neighborhood instability to potential homebuyers. Studies have not been able to measure the extent to which foreclosed properties show visual blight or can otherwise be identified from the street, however. A related hypothesis is that foreclosures may produce a "contagion effect" whereby a foreclosure has spillover effects on neighboring properties, resulting in reduced maintenance and increased foreclosure risk for those homes, as well.

This study measures and describes the extent of visual blight on foreclosed properties and neighboring properties. A Visual Tracking Survey (VTS or windshield survey) of foreclosed and nearby properties was conducted three times over a 1-year period. The observers completed an instrument that documented signs of damage, disrepair, and other indicators of disinvestment in the property. Because of the intensive resources needed for the VTS, its use was limited to two counties: Cuyahoga County, Ohio, and Palm Beach County, Florida. Within each of these counties over a 1-year period, surveys were conducted of approximately 50 blockfaces (covering 500 properties) in census tracts targeted by the NSP2 grantee and with high levels of concentrated foreclosures. Observers compared the exterior conditions of financially distressed and nondistressed properties to determine whether the distressed properties were more likely to show signs of visual blight.

The observations revealed that properties in financial distress tend to have more signs of damage, disrepair, and blight than properties not in financial distress, although the observers could not determine whether the findings of visual blight reflect differences in preforeclosure maintenance or changes that

occurred during the foreclosure process. A similar limitation applies to the analysis of visual distress among neighboring properties. The extent of visual blight among nondistressed properties is similar on block faces with high and low levels of foreclosure in Cuyahoga County. In Palm Beach County, non-financially distressed properties on blockfaces that had a high level of financial distress had a few more signs of visual distress than properties on blockfaces that had lower levels of financial distress.

A final finding is that the two counties differed in both the level and the trajectory of visual blight during the observation period. Properties in Cuyahoga County showed more signs of visual distress, with no clear change in the overall level between March 2012 and March 2013. Properties in Palm Beach County showed slightly fewer signs of visual distress as well as reductions in the overall level of blight over the course of the visual observations. This pattern may indicate that Cuyahoga County had not reached the end of the foreclosure crisis by March 2013, whereas Palm Beach County had started on the path to recovery.

4. **How did NSP2 and other financially distressed neighborhoods and properties change over time in terms of vacancy rates, housing tenure, volume of sales, and level of financial distress?**

The study analyzes trends in housing market indicators for census tracts with and without NSP2 investment as well as vacancy and tenure outcomes for NSP2 properties and other distressed properties. Neighborhood stability outcomes are tracked on a variety of measures over time, from the beginning of the housing boom in 2000 through early 2013. The measures include housing prices, sales volume, financially distressed properties, vacancy rates, and investor purchases. This tract-level analysis uses a differences-in-differences approach, comparing housing outcomes in census tracts that have NSP2 investments with comparison census tracts selected through propensity score matching. Each NSP2 tract was matched to five similar but untreated tracts in the same county. To address whether housing market outcomes varied by the size or concentration of NSP2 activity, outcomes in tracts that had especially large NSP2 investment are also compared with outcomes in tracts that had less NSP2 investment. The analysis of concentrated NSP2 activity focuses on the 7 largest of the 19 counties because of sample size constraints.

The average NSP2 tract received relatively sparse treatment under the program: on average, census tracts that received NSP2 investments (hereafter referred to as "NSP2 tracts") had seven treated properties and expenditures of $1.2 million. Activities were generally not spatially concentrated, with a tract-level average of 0.57 miles between each NSP2 property and the five nearest NSP2 properties. A small number of tracts in each market type received higher intensity treatment, however.

The relatively low intensity of NSP2 treatment likely contributed to quite limited average impacts of NSP2 on housing market outcomes. Regression results indicate few very statistically significant postimplementation differences in housing outcomes between NSP2 tracts and control tracts. At best, there is weak evidence that prices increased in treated tracts in BBSS markets—notably, Los Angeles and Maricopa Counties. More statistically significant results are found among tracts in the largest 7 counties that received intensive NSP2 treatment. These relationships differ considerably across counties, however. The evidence suggests that intensively treated tracts in Philadelphia experienced *worse* housing outcomes—lower prices and higher rates of distress, vacancy, and investor purchases—than sparsely treated NSP2 tracts in the county. In 3 other counties (Cook, Cuyahoga, and Wayne), results suggest higher vacancy rates among intensively treated tracts compared with sparsely treated tracts. This may

simply show that grantees chose to focus concentrated NSP2 investment in tracts that had the highest prevalence of vacant or abandoned properties—in other words, tracts in greatest need of help.

At the property level, the study also provides a descriptive analysis of the vacancy and tenure status of NSP2 properties at the end of the study period in early 2013, which was shortly after the February 11 program deadline for expending 100 percent of NSP2 funds. At the time of the analysis, many of the properties being rehabilitated were not finished and occupied, which could be an important factor in limiting the effect of NSP2 on tract- and property-level outcomes in the study. The cumulative effect of acquisition and rehabilitation activities in many counties was to transition investor-owned properties to homeowner-occupied units. A large majority (77 percent) of acquisition and rehabilitation properties were investor owned before the NSP2 intervention. According to the NSP2 grantee data, grantees anticipated that 60 percent of these properties would be homeowner occupied following NSP2 intervention.

5. **Does increased crime accompany periods of financial distress, and what effects do NSP2 investments have on reducing the incidence of crime?**

Recent research suggests that the presence of foreclosures in a neighborhood results in increased crime (Cui, 2010; Ellen, Lacoe, and Sharygin, 2013; Immergluck and Smith, 2006b). The study examines the relationship among foreclosures, NSP2 investments, and crime in the neighborhoods in which NSP2 investments were made, focusing on three cities where property-level data on crime incident reports could be obtained: City of Chicago (Cook County), City of Cleveland (Cuyahoga County), and City of Denver (Denver County).

In Chicago and Denver, the results did not show a significant reduction in either property or violent crime from NSP2 investments, but in Cleveland, the study found that demolition and land banking activities significantly reduced property crime and that rehabilitation and redevelopment activities significantly reduced violent crime. The reason for the difference in findings across the study areas cannot be conclusively determined. It may reflect the smaller sample sizes in Chicago and Denver or a difference in the neighborhoods selected for NSP2 investments. The implementation analysis found that the grantee in Cleveland considered crime rates when selecting properties for NSP2 investment, whereas crime was not mentioned as a consideration by the grantees in either Denver or Chicago.

6. **What is the impact of NSP2 on prices of nearby houses?**

In addition to the neighborhood-level impacts discussed above, the study estimates the impact of NSP2 investments on housing values at the property level. Previous literature found that foreclosures have a spillover effect on the sales prices of surrounding houses, raising the concern that foreclosures can lead to a vicious cycle of continuing foreclosures. Consistent with the literature, the property-level analysis found that foreclosures were associated with lower prices for nearby properties. To determine whether NSP2 mitigated the effect of foreclosures on nearby housing prices, the study regressed housing sale prices on the presence of nearby foreclosures and the presence of nearby NSP2 investment properties (for example, within 1,000 feet), controlling for property-level characteristics and census tract characteristics. The results did not show any systematic effect of NSP2 on nearby housing sale prices. Alternative specifications of the NSP2 variable were tried: the amount of nearby NSP2 expenditures, the number of NSP2 properties nearby, and various threshold measures of concentrated NSP2 activity. The alternative specifications did not produce different results.

The lack of consistent findings may be explained by omitted variable bias (that is, unobserved differences across blocks and neighborhoods for which data were not available.) If NSP2 investments were directed to neighborhoods that had unobserved characteristics that resulted in worse price outcomes, then the independent effect of NSP2 activity would be conflated with the neighborhood outcomes. As discussed earlier, some grantees chose to invest in the most distressed areas, and most grantees had to be opportunistic in some of their investments, selecting properties that private investors did not want or properties that were easily obtainable to meet the expenditure time lines. These selection factors could have led them to choose properties in areas of a census tract that had a worse price trajectory than other, nearby areas.

Why Was There No Measurable Spillover Effect?

Grantees in the 19 study counties made investments in more than 6,300 properties with NSP2 funding. The study found no detectable effect on housing prices and other housing outcomes in the surrounding neighborhoods. Possible reasons for this result are summarized below:

- February 2013 may have been too early to detect the effects of NSP2. Only 4,612 of the 6,354 properties with NSP2 investments were considered completed (according to program criteria) by February 28, 2013. Among the completed properties, 1,006 properties had been completed within the 3 months before February 2013, and many of these had not been resold or leased by the first quarter of 2013, when the study period ended. The most recent outcomes described in the study were measured when nearly 27 percent of the property investments were not complete or had just been completed. The impacts of these NSP2 properties on nearby housing values are unlikely to be captured by the study if (1) there was a lag between the completion of NSP2 investments and the effects on housing values or (2) if the effects were triggered by the completion of the investment activities, rather than the "signaling" effects of starting the investment.
- The scale of investment is small relative to the size of the problem in targeted neighborhoods. NSP2 grantees in the 19 sample counties targeted some of the most financially distressed tracts in their counties. On average, NSP2 treated seven properties per tract, when the average NSP2 census tract contained 1,715 housing units and 58 financially distressed properties. NSP2 tracts also had much higher rates of vacant properties, investor-owned properties, and high-cost mortgage loans. Residents of NSP2 tracts had much lower levels of income and educational attainment, and many grantees reported that the neighborhood problems went beyond housing and included poor schools, crime, and high rates of unemployment. The scale of the NSP2 investments may have been too small to overcome these formidable challenges.
- NSP2 investments may not have been sufficiently concentrated within census tracts. The average distance between an NSP2 property and the five closest NSP2 properties in a typical NSP2 tract was more than 0.5 mile. Overcoming the scale of financial distress wrought by the foreclosure crisis and subsequent recession may have required greater geographic concentration of NSP2 investments. When asked why they did not achieve greater concentration, grantees pointed to the speed with which they needed to acquire properties to meet the NSP2 expenditure deadlines and the challenges they faced in finding properties in financial distress that were available for purchase. The robosigning scandal of 2011 slowed down many banks' foreclosure processes just as NSP2 grantees were

beginning to look for properties to acquire. In other cases, banks wary of their ability to resell foreclosed properties delayed foreclosure to avoid taking ownership.

- NSP2 grantees had to be opportunistic in their selection of properties. Grantees in some markets reported that investor competition limited their ability to acquire properties at the required discount, which increased their need to acquire properties that required more substantial rehabilitation and properties located in areas with less investor interest. NSP2's expenditure deadlines hampered grantees' ability to wait for strategic acquisitions.
- Different activities may lead to conflicting price effects in the short term. NSP2 activities have complex and sometimes conflicting price effects, especially in the short term. For example, demolition removes properties from the housing stock, whereas development of homeownership units on vacant properties or properties in the foreclosure process adds to it. Although both activities seek to improve neighborhood stability over the long run, adding to the supply of available units with rehabilitated and redeveloped properties may reduce the value of nearby homes by giving prospective homebuyers more purchasing options and forcing sellers to reduce their prices to remain competitive. These conflicting price effects mean that NSP2 does not have a clear, expected effect on prices, and the impact may vary based on the mix of activities in each county.
- The property-selection process created methodological challenges for measuring impacts. Grantees' selection of properties was influenced by limitations on the supply of available properties, competition from investors, and pressures created by NSP2's expenditure deadlines and 1-percent discount requirement. To the extent that these factors affected grantees' selection of properties, they create unobserved differences between NSP2 properties and other properties that might be used as a comparison group. This selection created methodological challenges for measuring the impact of NSP2 activities on home prices at the property level.

Perspectives on Neighborhood Stabilization Program 2

From a broader public policy perspective, NSP2 can be viewed through multiple lenses. Originally conceived as a stabilization program, it was designed to arrest the immediate impacts of the foreclosure crisis in the hardest hit areas. The program was funded under the American Recovery and Reinvestment Act of 2009 (ARRA), an economic stimulus program, and thus the program can also be viewed as a form of economic stimulus for the broader economy. Finally, the manner in which NSP2 was implemented suggests that the program also acted as part of communities' long-term neighborhood revitalization plans, consistent with the objectives of the Community Development Block Grant (CDBG) program. Indeed, grantees often invested in neighborhoods that had revitalization needs that predated the foreclosure crisis.

The Notice of Funding Availability for NSP2 highlights these complementary goals, framing the objective of the NSP2 program as follows:

> *The primary object of the CDBG program is the development of viable urban communities by providing decent housing, a suitable living environment, and economic opportunity, principally for persons of low and moderate income. NSP2 recipients must strive to meet this objective in neighborhoods that are in decline (or further decline) due to the negative effects of a high number*

and percentage of homes that have been foreclosed upon. The first goal is to arrest the decline. Then, the recipient must stabilize the neighborhood and position it for a sustainable role in a revitalized community.[5]

Thus, the findings of this evaluation can be considered through each of these three lenses: as a stimulus program, as an attempt to stabilize neighborhoods, and as a neighborhood revitalization program.

Stimulus Program. ARRA, the funding legislation for NSP2, was enacted with the goals of job preservation and creation, infrastructure investment, energy efficiency, assistance to the unemployed, and state and local fiscal stabilization. Because of these stimulus goals, NSP2 had tight expenditure deadlines, requiring 50 percent of the award to be expended within 2 years and 100 percent within 3 years. Grantees generally met these expenditure deadlines, though at times they struggled to do so and made some investments based on the ease of obtaining the property rather than on their strategic vision for the program. NSP2 supported $1.03 billion in NSP2 activities in the 19 study counties, and grantees leveraged an additional $850 million in these counties, increasing the amount of stimulus to $1.88 billion.

Discussions with NSP2 grantees during the evaluation's site visit interviews also suggest that the program succeeded in supporting the local economy. Grantees consistently reported that NSP2 enabled local government agencies and nonprofit agencies to hire new staff or hold onto staff that otherwise might have been laid off. Several grantees also reported that NSP2 activities provided critical work for their contractors, helping to keep small businesses solvent and providing jobs to construction workers, plumbers, and electricians for whom work was scarce during the housing downturn. All of the NSP2 grantees met the expenditure deadlines, so the program delivered its economic stimulus in the intended time frame.

Stabilization Program. An immediate objective of NSP2 was to lessen the impact of foreclosures on their surrounding neighborhoods by (1) slowing decline in home prices by putting a floor under falling home prices and (2) lessening the spillover effects of foreclosure and vacancy for nearby property owners until the foreclosed property could be reoccupied or converted to another productive use.

The evaluation findings do not provide any evidence that NSP2 activities arrested the overall decline in home prices in NSP2 neighborhoods. The neighborhood-level analysis suggests that the home price trajectories of NSP2 tracts were similar to the trajectories of non-NSP2 tracts; the findings for other neighborhood stability outcomes are the same. The most likely explanation for this result is that NSP2 intervention was relatively small compared with the number of foreclosures in each tract. Given the scale of NSP2, the impacts of NSP2 investments would have to be substantial to arrest the decline in home prices for the neighborhood as a whole.

The evaluation's findings for the second approach to neighborhood stabilization—lessening spillover effects—are less clear. The property-level analysis examines the spillover effect of NSP2 investments on neighboring home prices. Because the analysis was not able to isolate and measure the independent effect of NSP2 investments apart from other neighborhood characteristics, the examination of spillover effects

[5] U.S. Department of Housing and Urban Development (Docket No. FR-5321-N-01), "Notice of Fund Availability (NOFA) for the Neighborhood Stabilization Program 2 under the American Recovery and Reinvestment Act, 2009." Section I.B.

was inconclusive. This is a limitation with the methods available for measuring the impacts of NSP activities, not a limitation of the program itself.

The caveat to the evaluation's findings is that the analyses sought to measure *systematic* impacts that appeared across NSP2 tracts and properties within each selected county. It is possible that NSP2 investments in fact arrested the decline in home prices in some individual neighborhoods, whereas the average impact was found to be statistically insignificant. Future research might attempt to identify a subset of neighborhoods where NSP2 investments arrested the decline of home prices. Such an exploration would likely need to identify ideal conditions and data sources for measuring the impact of NSP2 investments apart from other unobserved neighborhood characteristics.

Neighborhood Revitalization Program. A final way to consider the role of NSP2 is as a complement to grantees' longer term neighborhood revitalization strategies. Approximately one-half of the study grantees reported purposely targeting areas that had longstanding distress, and most grantees reported that they chose areas to coordinate with other community development activities. Viewed through this lens, it is likely too early to draw conclusions about the impact of NSP2 investments on neighborhood revitalization outcomes. Indeed, the literature on neighborhood revitalization suggests that altering the outcomes of distressed neighborhoods requires concentrated investment over a multiyear time frame (Galster et al., 2006; Galster et al., 2004; Pooley, 2014). Coupling NSP with other community development programs is a promising sign that distressed neighborhoods will continue to be revitalized beyond the time frame of NSP2.

1. Introduction

1.1 The National Foreclosure Crisis

The past decade has been marked by an unprecedented housing bubble and foreclosure crisis. During the first half of the decade, home prices nationally experienced unprecedented growth, increasing 85 percent in real terms between 1997 and 2005 (Shiller, 2008). The increase was notable for its sheer magnitude and because it occurred in many markets throughout the country. By 2006, however, the first tremors of the impending foreclosure crisis were felt when two sizable subprime lenders, Ownit Mortgage Solutions and Sebring Capital, failed. *The Wall Street Journal* described these closures as "shock waves" sent through the mortgage bond market (Reed and Shrivastava, 2006). A few months later, the Mortgage Bankers Association released its estimate of the national foreclosure start rate—the percentage of mortgages entering into foreclosure—revealing a new record high of 0.54 percent. The rate doubled to 1.08 percent by the second quarter of 2008 and reached 1.37 percent by early 2009.

In a report to Congress on the causes of the foreclosure crisis, the U.S. Department of Housing and Urban Development (HUD) detailed how, in a few short years, the country saw a housing market that had seemingly limitless potential for growth change into one that brought the economy to the brink of collapse (HUD, 2010). The report notes that early stages of the crisis were driven by high rates of delinquency among borrowers who had risky, subprime loans, especially in four states most affected by the crisis: Arizona, California, Florida, and Nevada. Subprime mortgages rapidly grew in availability and popularity from 2003 onward because of several factors, including reduced governmental regulation of mortgage products, the packaging of mortgages into sophisticated securities that attracted investors, and the willingness of lenders to make risky but highly profitable loans because they thought that rising home values would minimize the risk of borrower default. Rising home values, driven in part by the easy availability of loans, fueled the construction of new homes and created the need for even riskier mortgage products to help buyers purchase more expensive homes—a need lenders and investors were eager to meet.

This cycle came to a dramatic halt in 2007 when housing values began to plummet, exposing the overvalued housing market. At the same time, unemployment began to rise, placing further stress on the economy and increasing mortgage defaults. Indeed, while the early rise in foreclosure rates was driven by the failure of subprime loans, as the economic recession deepened, failures among prime mortgages soon eclipsed subprime loans. All told, the national foreclosure crisis had precipitated the most profound financial crisis since the Great Depression.

1.2 The Foreclosure Crisis and Neighborhood Effects

The impacts of the foreclosure crisis on neighborhoods are vast and still unfolding, yet understanding neighborhood change is one of the most complex and challenging areas in urban economics and community development policy. During normal years, the processes through which neighborhoods improve and decline are numerous and varied. As the housing stock ages, neighborhoods are continuously in flux, as individual property owners make interdependent decisions about investment and maintenance. These decisions also interact with population dynamics and economic conditions as communities evolve and in some cases dramatically transition through nonlinear tipping processes.

The existing research describes how foreclosures impact the values of neighboring properties. (Chapter 2 provides a full literature review.) Three mechanisms are commonly discussed:

- The visual blight caused by poorly maintained properties may reduce the value of neighboring homes to potential buyers.
- Both sellers and buyers may interpret the presence of foreclosed properties as signals about the future stability of the neighborhood and the risk associated with a home purchase.
- The lower sales value of foreclosed or preforeclosure properties may affect the assessed value of neighboring homes if foreclosed properties are used as comparable properties for setting list prices.

As these mechanisms combine to depress neighboring home values, property owners can be expected to respond to the accompanying signals about future property values and neighborhood stability. These independent responses can trigger a cascading series of events and have the potential to create fundamental change in the composition and trajectory of a neighborhood. The elements of this cycle include:

- *Visual signs of deferred maintenance and blight.* Properties in the foreclosure process may fall into disrepair if property owners stop routine maintenance of the property and its landscaping. Properties that are already foreclosed upon may similarly decline if banks and servicers are less committed to maintaining a property's visual appearance.
- *Additional foreclosures.* The potential price impact of foreclosures reduces the equity and increases the loan-to-value ratio of neighboring homeowners, which may push some neighbors into negative equity and trigger additional foreclosures.
- *Prolonged vacancies and abandonment.* The occupancy of foreclosed properties depends on the responsiveness of banks and servicers as well as the activities of investors. Properties may sit vacant for a prolonged period prior to sale or transition into rental occupancy.
- *Crime.* Prolonged vacancy creates opportunities for properties to be used for criminal activities, which further depresses the values of neighboring properties. Also, the damage caused by criminal activity may prolong the vacancy until repairs are made.
- *Declining property values*. Declining property values reduce tax revenue and limit local government's ability to provide services, further diminishing the viability of distressed neighborhoods.

Thus, the impact of the foreclosure crisis on communities plays out through a series of causal mechanisms that reinforce the downward spiral of neighborhoods. These impacts can alter expectations of residents about the future conditions of a neighborhood along many dimensions. The net result of a drop in expectations can be the collapse of a neighborhood from one potential condition, or equilibrium, to another, lower one. Indeed, several studies conducted since the emergence of the crisis have demonstrated the significant negative impacts of foreclosures on neighborhood housing prices (Immergluck and Smith, 2006a; Schuetz, Been, and Ellen, 2008), municipal budgets (Apgar, Duda, and Gorey, 2005), and crime (Immergluck and Smith, 2006b). Underlying the concerns raised by these studies is the premise that foreclosed properties are "contagious" in their effects (Harding, Rosenblatt, and Yao, 2009) and produce a series of negative spillover effects throughout the surrounding neighborhoods.

1.3 Overview of the Neighborhood Stabilization Program

To address the risks associated with the foreclosure crisis, Congress adopted a series of programs beginning as early as 2007. These programs broadly fit into two categories: those that aimed at preventing additional foreclosures and those attempting to mitigate the effects of foreclosures on communities (Immergluck, 2013a). Programs focusing on foreclosure prevention varied in design and complexity but generally provided a way for a homeowner facing foreclosure to modify the terms of a mortgage to remain in the home with a more affordable mortgage. The adoption and effectiveness of foreclosure prevention programs was hindered by numerous factors, from program design issues to lender resistance, and thus the ability of these programs to forestall the crisis was greatly diminished.[6] Thus, foreclosures continued to occur at high rates and the potential spillover effects on surrounding neighborhoods mounted. To address the effects of foreclosures on communities, Congress enacted the Neighborhood Stabilization Program (NSP), a series of related programs to fund community responses to the foreclosure crisis.

From 2008 to 2010, Congress authorized $6.9 billion in three separate enactments to create and support NSP (commonly referred to as NSP1, NSP2, and NSP3). Key components shared by each NSP round are that the eligible activities grantees can undertake to help stave off the negative effects of foreclosed properties. The activities include establishing financial assistance for the purchase of foreclosed homes, purchasing and rehabilitating homes and residential properties that have been abandoned or foreclosed upon, establishing and operating land banks, demolishing blighted structures, and redeveloping demolished or vacant properties as housing. The programs also encouraged grantees to target areas with the greatest need as indicated by the highest percentage of foreclosed properties, the highest percentage of home purchases financed through subprime loans, and the greater likelihood that the area will see a rise in foreclosures in the future.[7]

The original version of the program, although successful on some measures,[8] had a few notable limitations: (1) funds may not have been targeted to small areas with the greatest need; (2) implementing NSP1 was challenging, especially among grantees that were relatively new to community development programs; (3) the program required grantees to purchase properties at a value between 5 percent and 15 percent below appraised value, which limited grantees ability to negotiate with lenders and to compete with private investors; and (4) grantees were prevented from selling homes for more than the amount invested in the property, which eliminated the ability of grantees to create program income from property sales that could be funneled into additional neighborhood stabilization activities (Immergluck, 2013a). These issues were soon addressed by the second round of NSP funding, making NSP2 a particularly important policy intervention that was designed in part to operate more effectively.

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6 A thorough review of foreclosure prevention strategies from 2007 to 2010, including their design and effectiveness, is found in "Too Little, Too Late, and Too Timid: The Federal Response to the Foreclosure Crisis at the Five-Year Mark" by Dan Immergluck, 2013.

7 For additional details about the three rounds of NSP funding, see http://www.huduser.org/portal/datasets/NSP_target.html.

8 As of 2010, NSP1 funds had been primarily targeted to the acquisition and rehabilitation of foreclosed homes (66 percent), followed by redevelopment (11 percent), financing (6 percent), demolition (5 percent), land banking (4 percent), and allowable administrative expenses (9 percent). See U.S. GAO, 2010 (cited in Immergluck, 2013a).

Although NSP2 had the same eligible activities and income requirements as NSP1, it differed from NSP1 in several ways. A significant change was that NSP2 funds were distributed through a competitive grant process rather than a formula-based process, which was intended in part to address the lack of capacity among some NSP1 grantees (Immergluck, 2013a; Joice, 2011). To enhance capacity, the list of eligible grantees was expanded from states and local governments to include nonprofit organizations, and collaborations between multiple partners were encouraged. HUD asked applicants to demonstrate their organizational capacity through a narrative description of their previous experiences in successfully completing activities relevant to their proposed NSP2 activities (such as acquisition, rehabilitation, or disposition of housing as part of a neighborhood stabilization, land banking, or community development program). These experiences had to involve at least 75 units of housing within the 24-month period immediately preceding the release of NSP2's Notice of Fund Availability on May 4, 2009.[9] NSP2 set aside $50 million for technical assistance to grantees to further enhance their capacity.

In addition, NSP2 required applicants to identify eligible target areas for concentrated program activities to ensure that funds were directed to areas of greatest need rather than evenly distributed across an area (Joice, 2011). Eligible target areas were census tracts with high average foreclosure risk scores or foreclosure-plus-vacancy risk scores. The risk scores were calculated by HUD and "reflect neighborhood characteristics that are estimated to have a high level of risk for foreclosure."[10] Scores ranged from 1 to 20, and applicants needed to have an average score of 18 or above to be eligible for NSP2 funding.[11] HUD further tightened the targeting provisions in NSP2 by instructing applicants to (1) select specific neighborhoods on the basis of both need and the potential for program impact, (2) estimate the extent to which NSP2 funds would address the vacancy problem and target neighborhoods where concentrated intervention could match the extent of existing vacancies, and (3) demonstrate their ability to leverage NSP2 funds with other sources of assistance.

NSP2 included several additional changes from NSP1.[12] First, HUD reduced the discount required at purchase from between 5 and 15 percent below appraised value to 1 percent below appraised value. Second, grantees could not direct more than 10 percent of the award to demolition unless they requested and received a waiver based on demonstrated local need. Third, the minimum award size was increased from $2 million to $5 million. Fourth, HUD expanded the list of properties eligible for purchase through NSP2 to include homes at risk for foreclosure in addition to those already foreclosed, allowing grantees to purchase homes through short sales. Finally, NSP2 increased the timeframe for obligating program funds from 18 months to 36 months, and grantees were required to expend at least 50 percent of allocated funds within 2 years (by February 11, 2012) and 100 percent of funds within 3 years (by February 11, 2013).[13]

NSP2 grants were awarded to 56 grantees throughout the country. The 56 grantees cover 3,068 census tracts in 133 counties and 29 states. Of the $1.93 billion in NSP2 funding, approximately $947 million

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9 FR-5321-N-01.

10 http://www.huduser.org/nspgis/nspdatadesc.html.

11 Because each tract had separate foreclosure and vacancy scores, applicants were able to choose one or the other for calculating the average.

12 All NSP laws and Federal Register Notices are available in HUD's "NSP Laws and Federal Register Notices," November 27, 2012. Policy guidance from HUD on NSP program elements and changes to NSP are available in "HUD NSP Policy Alerts," September 30, 2013.

13 NSP Policy Alerts Report, p. 39.

went to 24 grantees operating exclusively in states that were hit hardest by the national foreclosure crisis: California, Florida, Michigan, Nevada, and Ohio.[14]

Congress later funded NSP3, which was designed to replicate NSP2 with only a few key changes. The most significant change was that NSP3 returned to the formula-based funding guidelines of NSP1 and changed the minimum grant amounts. In addition, NSP3 encouraged grantees to develop affordable rental housing, which was eligible under NSP1 and NSP2 but not emphasized in HUD guidelines.

1.4 Overview of the Evaluation

The primary goal of NSP is to arrest the spillover effects associated with foreclosures. In February 2011, HUD commissioned Abt Associates and its partners, the University of Southern California and Concentrance Consulting Group, to explore whether NSP successfully achieved this goal. Specifically, the main objectives of the project are to understand how the program was implemented in different market contexts and evaluate the impacts of NSP in neighborhoods where program activities occurred. The evaluation focuses on NSP2 because it was designed to improve on NSP1 and has the greatest potential to affect change in neighborhoods with high concentrations of foreclosures. The study accounts for NSP1 investments where the funding streams overlap within the targeted study areas by including these investments in the impact analyses. The project also explores the hypothesis that concentrated NSP2 activities are more likely to produce positive neighborhood outcomes than dispersed assistance.

The study draws from a rich set of data sources and uses both qualitative and quantitative research techniques to evaluate the program. The data sources include millions of foreclosure and sales transaction records in NSP2 and comparison neighborhoods; property-level information for each NSP2 property in the study; administrative data sources on vacancies and crime; qualitative interviews with NSP2 grantees, their partners, and national intermediaries (that is, Chicanos Por La Causa, Community Builders, Habitat for Humanity, and Self Help); and field observations. Although the study reports on all 56 NSP2 grantees, it focuses on 19 counties (and 28 NSP2 grantees) located in different regional housing markets to explore the research questions.

The rest of this section reviews the research questions and how we address them. Exhibit 1–1 provides a crosswalk of each research question with the associated chapter.

1. **What housing investments were made by NSP2 grantees, and what factors contributed to the type and number of investments?**

Using administrative data that NSP2 grantees reported to HUD and additional grantee data on NSP2 properties collected as part of this study, the study documents the activities supported by NSP2 funding within the 19 sample counties are reported in Chapter 4. This descriptive analysis reports the number of properties with NSP2 investments, the number of investments by type of eligible activity, the expenditures by type of activity, and the timing of the investments. The outputs by activity type are broken out by the county's housing market category to examine different patterns of investment based on what the county experienced during the housing market's boom and bust period.

[14] http://www.hud.gov/offices/cpd/communitydevelopment/programs/neighborhoodspg/pdf/nsp2awardtotalAllocation.pdf.

Based on the output data and on interviews with local NSP2 staff on the implementation of the program, Chapter 5 describes the factors that either facilitated or hindered the successful implementation of plans for the NSP2 grant, including program regulations, grantee capacity, competition from investors, and other market-related factors.

2. How was NSP2 implemented by grantees, and how did this vary across markets?

The study provides a rich description of how NSP2 grantees approached their implementations and how the implementations were adjusted over time to account for shifting market realities. Among other key topics, it reviews how grantees executed the eligible program activities, leveraged funding from other sources, worked to concentrate NSP2 activities, and used the program flexibility to adapt their plans to address housing market challenges. This information is based on a review of NSP2 applications and grantee action plans and baseline and followup in-person interviews with staff from the lead grantee; key partner organizations or subgrantees; and non-lead consortium members who played an important role in designing, implementing, or monitoring the program. The baseline interviews occurred in the summer of 2012, more than a year after the NSP2 grants had been awarded. The followup visit occurred 1 year later, during the summer of 2013, approximately 6 months before the end of the grant period.

Each pair of interviewers produced a written summary of all interview findings for both rounds of site visits. A team of three site visitors analyzed the first round of site visit summaries in NVivo qualitative analysis software. For the first round of summaries, the coding was based on the research questions and additional topics identified through inductive coding—that is, identifying issues that were prevalent in grantees' answers rather than looking for predetermined themes. These preliminary analyses were used to add questions to the interview protocols for the second site visit. The interview summaries from the second round of site visits were added to the Round 1 summaries and coded in NVivo. A team of four site visitors coded these using a code book that combined issues identified by our research questions (such as technological tools and capacity) and issues we added based on site visit findings (such as program flexibility and investors). Each site visit summary was also assigned a set of attributes (discrete characteristics) that allowed us to examine themes based on a grantee's market type, participation in a consortium, or experience with NSP1, among other traits. The results presented in the implementation chapter are based on this analysis. We present both the frequency of themes among grantees and an illustrative range of the experiences contained in a theme. The implementation analysis is presented in Chapter 5.

3. Do neighborhoods that have high concentrations of foreclosures show signs of visual blight?

Although the literature has demonstrated that foreclosures have a negative effect on nearby housing prices, the role of different mechanisms through which this negative spillover effect occurs is not well understood. One of the possible mechanisms is visual blight caused by foreclosures. The hypothesis is that foreclosure leads to disinvestment in a property either because it is vacant or because the people living there are not able or not willing to invest in its upkeep, and that this disinvestment leads to observable deterioration in the property. Visual distress has a negative effect on nearby housing prices, which in turn can lead to neighboring homeowners not investing in upkeep if they find themselves with negative equity in their properties. This study examines the relationship between foreclosure and visual blight in the foreclosed or nearby properties. It does so by conducting a Visual Tracking Survey (VTS or windshield survey) of foreclosed properties and nearby properties three times over a 1-year period. The observers completed an instrument that documented signs of damage, disrepair, and other indicators of disinvestment in the property.

Because of the intensive resources needed for the VTS, this part of the study was limited to two counties: Cuyahoga County, Ohio, and Palm Beach County, Florida. These counties were chosen to represent two types of counties that epitomize the foreclosure crisis: (1) a former rust belt county that had a lagging housing market exacerbated by the crisis, and (2) a rapidly growing county that experienced the extreme price appreciation of the boom and price depreciation of the bust. Within each of these counties, approximately 50 blockfaces (covering 500 properties) in census tracts targeted by the NSP2 grantee and with high levels of concentrated foreclosures were selected for observation. To maximize the observation period, it was necessary to select blockfaces knowing only where grantees initially intended to invest as opposed to where they actually invested, and few properties in the survey ended up receiving NSP2 investment. Although this limitation prevented us from testing whether visual blight in NSP2 properties is more or less prevalent than in other properties, the VTS provides a visual description of properties in neighborhoods in these two counties similar to those receiving NSP2 investment. The results of these analyses are shown in Chapter 6.

The VTS analysis compares the exterior conditions of financially distressed and nondistressed properties to determine whether the distressed properties are more likely to show signs of visual blight over the 1-year period they are observed. This is important to understanding whether visual blight is a likely mechanism that could lead to reduced home values in the sampled blockfaces. The analysis also looks for signs that concentrated foreclosures are associated with deferred maintenance and visual blight in nearby nondistressed properties. It does so by comparing the change in property conditions of nondistressed housing in blockfaces that have higher and lower concentrations of foreclosed houses.

4. **How did NSP2 and other financially distressed neighborhoods and properties change over time in terms of vacancy rates, housing tenure, volume of sales, and level of financial distress?**

This descriptive analysis shows the trends in housing market indicators for census tracts with and without NSP2 investment as well as vacancy and tenure outcomes for NSP2 properties and other distressed properties.

For census tracts in the 19 sampled counties, the descriptive analysis tracks neighborhood stability outcomes over time from the beginning of the housing boom in 2000 through early 2013. The key outcomes are housing prices, sales volume, finically distressed properties, vacancy rates, investor purchases,[15] and crime. In each year, the analysis documents the level of each outcome, comparing NSP2 targeted tracts with a group of census tracts selected through propensity score matching (PSM) and the other areas of the sampled counties. The analysis describes the changes in the observed neighborhoods during the boom, the subsequent bust, and the period of NSP2 implementation. The analysis also shows the baseline population characteristics of the census tracts that received NSP2 investments (hereafter referred to as "NSP2 tracts") and non-NSP2 tracts. This analysis provides context for comparing targeted census tracts with other tracts in the county before any other factors are controlled for in the census tract impact analysis. These results are presented in Chapter 8.

A property in financial distress may cause the owner to be displaced from the property and the property to be taken over by a new owner. The property-level analysis in Chapter 7 examines the vacancy status of

[15] For the purposes of the study, *investor purchases* are purchases made by nonowner occupants. Section 3.2 shows how this definition was operationalized using the foreclosure and transactions data.

properties in various stages of financial distress to explore the frequency of vacancy associated with this distress. It then compares the vacancy and tenure status of NSP2 properties with other financially distressed and nondistressed properties in the census tracts in which NSP2 funds were invested. It also breaks out the analysis of NSP2 properties by the activity type of the investment and the county's housing market category. This analysis provides information on the relationship between financial distress and vacancy and housing tenure as well as whether there is an observed difference between NSP2 and other distressed properties.

5. **Does increased crime accompany periods of financial distress, and what effects do NSP2 investments have on reducing the incidence of crime?**

Recent research suggests that the presence of foreclosures in a neighborhood results in increased crime (Cui, 2010; Ellen, Lacoe, and Sharygin, 2013; Immergluck and Smith, 2006b). Analysis reported in Chapter 9 examines the relationship among foreclosures, NSP2 investments, and crime in the neighborhoods in which NSP2 investments were made. The analysis focuses on three cities where property-level data on crime incident reports could be obtained: the City of Chicago (Cook County), the City of Cleveland (Cuyahoga County), and the City of Denver (Denver County).

The analysis tracks the incidence of violent and property crime within 250 feet of properties—the *proximate area*—located in census tracts that have NSP2 investment, comparing these outcomes with two *comparison areas* that fall outside the proximate area but within the same immediate neighborhood. The two comparison areas are defined as concentric rings of equal area that fall just outside the proximate area. The first ring includes the area between 250 and 354 feet from the property. The second ring includes the area between 354 and 433 feet from the property. The analysis uses a difference-in-differences estimation strategy that compares the trend in crime incidence in the proximate area with the trend in the comparison areas after controlling for the neighborhood-level trend in crime and changes in census tract characteristics over time. Separate impact estimates are reported for violent crime and property crime.

6. **What is the impact of NSP2 on prices of nearby houses?**

The study empirically estimates the impact of NSP2 investments on various housing market outcomes at both the neighborhood and property levels. The neighborhood-level analysis examines impact at the census tract level, while the property-level analysis examines impacts within 300-, 500-, and 1,000-foot rings around the NSP2 property. Both sets of analysis explore whether there is a larger impact in areas that have concentrated NSP2 investment.

As described in Chapter 2, previous literature finds that foreclosures lead to housing price declines in the surrounding neighborhood. Possible mechanisms for this negative spillover effect are deferred maintenance of the foreclosed property leading to visual blight, which reduces the value of nearby homes; the foreclosed house is a signal to buyers and sellers that there is higher risk of decreased housing values in the neighborhood; and lower sales prices of foreclosed homes may affect the appraised value of neighboring homes if they are used as comparable housing values. In neighborhoods that have high rates of foreclosed properties, the spillover effect may create negative feedback cycles that lead from decreases in housing prices to more foreclosures and abandonment of properties. The primary goal of NSP2 is to prevent or halt the negative feedback cycle and stabilize neighborhoods.

The analysis at the census tract level investigates whether NSP2 had an impact on housing prices, sales rate, distressed property rate, vacancy rate, and investor-purchase sales. Investor-purchase sales were

included as an outcome measure because it was hypothesized that individual buyers would not be willing to purchase homes in these neighborhoods or would not be able to obtain affordable loans to purchase homes in distressed neighborhoods, leaving only private investors who had enough resources to purchase properties. This analysis uses a difference-in-differences approach, comparing pre and post changes in census tracts that had NSP2 investments with similar census tracts that had no NSP2 investment. The difference-in-differences comparison is regression adjusted, controlling for factors such as pre-housing crisis price changes, frequency of distressed properties, population density, median income, and other characteristics of the population. The comparable census tracts were identified using PSM based on baseline housing, geographic, and population characteristics.

This census tract analysis was done at the county level when there was a sufficient number of NSP-treated tracts and control tracts (seven counties), and the tracts were aggregated to the county market categories were used to select the county sample. The two differences among the five housing market categories used for selecting the sample and the four categories used for this analysis are (1) the Boom-Stable (BS) and Slow Growth (SG) counties were combined into an "other" category because the original categories were too small on their own and (2) two other counties were moved to the category based on PSM results that indicated the way the grantees selected NSP2 census tracts did not fit with their original category (Cook County, Illinois, and Pulaski County, Arkansas). The results of this analysis are reported in Chapter 8.

The property-level analysis of the impact of NSP2 focuses on housing sale prices because the primary objective of NSP2 is to negate the spillover effect of foreclosed homes that acts as a contagion and leads to further foreclosures of surrounding homes. This analysis regresses property values of all homes in a county that has had repeat sales from 2006 through 2012 on a series of control variables for the census tract and foreclosures with and without NSP2 investment within various distance rings from the property. The distance rings are 300, 500, and 1,000 feet to investigate whether any measured impact extends beyond the most immediate properties. The coefficient on the NSP2 variable is the estimated impact of NSP2, controlling for the effect of foreclosures that have not received any NSP2 investment.

Exhibit 1–1: Crosswalk of Research Questions, Analysis Coverage, and Chapters

Research Question	Analysis Coverage	Chapters
What housing investments were made by NSP2 grantees, and what factors contributed to the type and number of investments?	All grantees in 19 NSP2 study counties	4, 5
How was NSP2 implemented by grantees, and how did this vary across markets?	All grantees in 19 NSP2 study counties	5
Do neighborhoods that have high concentrations of foreclosures show signs of visual blight?	Cuyahoga County and Palm Beach County	6
How did financially distressed neighborhoods and properties change over time in terms of vacancy rates, housing tenure, volume of sales, and level of financial distress?	19 NSP2 study counties	7, 8
Does increased crime accompany periods of financial distress, and what effect do NSP2 investments have on reducing the incidence of crime?	Cook County, Cuyahoga County, and Denver County	9
What is the impact of NSP2 on housing prices and other housing market outcomes?	19 NSP2 study counties	8, 10

NSP2 = Neighborhood Stabilization Program 2.

This analysis is done for any NSP investment in a property, and then separately for the type of investment (for example, acquisition and rehabilitation or demolition). The analysis also investigates whether the

NSP2 expenditure amount makes a difference or simply whether the fact that there was NSP2 investment makes a difference. It also explores whether the impact of NSP2 depends on either the concentration of foreclosures in an area where NSP2 investments are made or the concentration of NSP2 investments. The results of this analysis are reported in Chapter 10.

1.5 In This Report

The remaining chapters of this report proceed as follows:

Chapter 2 provides a review of the literature on the impacts of foreclosures on neighborhoods. The review covers several areas that underpin this study, including the existing literature about NSP; the theoretical mechanisms that explain how foreclosures may affect neighborhoods; and the existing evidence linking foreclosures to neighborhood outcomes, especially home values, crime and vacancy rates, housing tenure, and level of blight.

Chapter 3 provides a more detailed review of the study's sampling approach and data sources. The chapter also identifies the specific variables and outcome measures that are associated with each data source, acknowledging data limitations.

Chapter 4 focuses on the production outputs of NSP2 for all 56 NSP2 grantees and for the 28 grantees that are the focus of the study. The chapter reviews the types of eligible activities under the program and quantifies the number of units supported by each activity type, documenting the characteristics of each activity by market type.

Chapter 5 presents the results from the implementation analysis. It explores how grantees implemented NSP2 by describing the environment in which grantees worked in implementing NSP2, how that influenced the design of their programs, the strategies they used to address their local housing market problems, their achievements, and the factors that either facilitated or hindered the implementation.

Chapter 6 presents the results from the VTS. The chapter documents and compares the exterior conditions of financially distressed and nondistressed properties located in sample blocks and how the condition of properties changed during a 12-month period.

Chapter 7 presents the impacts of NSP2 on vacancy rates and tenure. The chapter explores the pattern of vacancy and tenure changes of foreclosures in census tracts where NSP2 investments were made. It also measures whether NSP2 activities affect the vacancy and tenure status of NSP2 properties relative to other foreclosures in NSP2 neighborhoods.

Chapter 8 presents the results from the tract-level impact analysis, showing whether NSP2 produced more favorable neighborhood-level outcomes when compared with carefully selected neighborhoods. The chapter provides a context for NSP neighborhoods prior to intervention and compares the trajectory of housing markets in NSP tracts and non-NSP tracts over time.

Chapter 9 presents the effects of NSP2 on crime rates. The chapter explores whether crime increases in high-foreclosure areas during the foreclosure process. The chapter also measures whether NSP2 investments in a property reduced the incidence of crime and how outcomes vary by the type of NSP2 activity or the level of concentration of NSP2 activities.

Chapter 10 presents the impacts of NSP2 on housing values. The chapter measures whether housing prices decrease in high-foreclosure areas and whether NSP2 investments positively impact prices. The chapter explores whether price effects vary by the type and concentration of NSP2 activities.

Chapter 11 synthesizes and interprets the study's main findings. The chapter reviews the production outputs of NSP2 and the results from the impact analyses by outcome. The chapter also synthesizes the qualitative and quantitative results to highlight important themes that shaped the way NSP2 was implemented and affected the program's impacts on surrounding properties and the neighborhoods where NSP2 activities occurred.

Appendices A though E provide supplemental information, including statistical tabulations, data summary reports for each county, interview instruments, property-level blight survey, maps that show the location of NSP2 activities and investments relative to the financial distress of census tracts, and several maps for the blight surveys conducted in Cuyahoga and Palm Beach Counties.

2. Literature Review

This chapter synthesizes the literature on the effect of foreclosures on neighborhood outcomes and the prior research on the Neighborhood Stabilization Program. The objective is to review the known effects of foreclosures on neighborhoods, focusing on the effects that NSP is designed to mitigate. The literature review provides a contextual backdrop for the rest of the report.

The chapter proceeds in five sections. The next section provides an extensive review of the literature of the effect of foreclosures on housing prices, the primary outcome of interest. The review discusses the data, empirical approach, and geographic scope of the studies. Subsequent sections summarize the findings of foreclosures on other key outcomes in the study—vacancy rates and housing tenure changes, crime, and visual blight in the neighborhood. The last section reviews the limited research on NSP.

2.1 The Impacts of Foreclosure on Surrounding House Prices

This section begins by reviewing studies that estimated the impacts of foreclosures on nearby house prices, followed by a discussion that explores the neighborhood context that affect the size of the impact.

2.1.1 Estimate of Discount in Sale Prices of Homes Near Foreclosures

Numerous papers find that house sales that are close to a recent foreclosure suffer a discount to their market value. Frame (2010) published the first formal literature review of the early papers on foreclosure after housing prices fell in 2007 and found the set of results "compelling," though "it can certainly be improved and expanded." Of many open issues surrounding foreclosure, price spillover is the area in which the most agreement exists. It is not uniform, however, with regard to the range of discounts, the types of neighborhoods in which foreclosure occurs, or even how the discount is to be interpreted. Establishing the discount is essential to motivating government intervention in the first place. The key questions in this literature are, how big is the discount, and how much variation is there in a foreclosure discount to nearby homes? An important followup question is, What does *nearby* mean: over what distance and over what time horizon does the discount persist? Finally, through what channel did the externality travel?

Although foreclosure and foreclosure mechanics have long histories, recent publications on these topics are motivated by the bubble and bust and, in particular, the prospect of foreclosure contagion. Immergluck and Smith (2006a) may be the most cited paper among those included in the literature review. It predates the bust, but its use of Rosen's (1974) seminal hedonic framework to measure local negative externalities from a foreclosure to other houses has become the primary tool for assessing price spillovers and foreclosure "contagion." Immergluck and Smith find that an additional foreclosure within 0.125 mile leads to a price discount of 1.1 percent on average. For lower income and moderate-income households, however, the discount is between 1.5 and 2.0 percent, suggesting different impacts by neighborhood. When the average property-level impact is aggregated for the study area of Chicago (as of 2006), the totals are noteworthy: their estimated cumulative impact of foreclosures range from $598 million to $1.36 billion (or between $159,000 and $371,000 per foreclosure).

The Immergluck and Smith (2006a) paper is cross-sectional in nature, and several other similar publications followed: Leonard and Murdoch (2009); Lin, Rosenblatt, and Yao (2009); Mikelbank (2008); and Wassmer (2011). Lin, Rosenblatt, and Yao (2009) also study Chicago and contribute to the Immergluck and Smith paper by extending the time horizon of impact of foreclosure and refining the

distances over which the effects were measured. They find that there is a large foreclosure discount that fades over time and distance. Within 2 years and 0.1 kilometer (328 feet) of a foreclosure, they measure the discount at 8.7 percent. A recent foreclosure leads to a discount of 1 percent to a distance of 1.5 kilometers (4,921 feet); by 6 to 10 years later, the discount is still significant but only out to 0.5 kilometers (1,640 feet).

Leonard and Murdoch (2009) study 23,218 single-family home sales in the area of Dallas, Texas, in 2006. They attempt to advance earlier work by explicitly accounting for spatial correlation among the data. They find small, though statistically significant discounts that fade with distance to the foreclosure.

Other similar papers include Rogers and Winter (2009) and Wassmer (2011). The first finds a 1-percent and significant foreclosure discount in St. Louis County from 2000 to 2007. Interestingly, they find that the marginal discount falls as the number of foreclosures rises and that the biggest impact occurs in the years prior to the bubble bursting (2000 to 2002). Wassmer (2011), using data from Sacramento from 2008 through 2009, finds that the spillover of a foreclosed home within a tenth of a mile was 0.6 percent. Interestingly, he finds the negative externality was significant and negative for the sales from a quarter of a mile to a mile—an exceptionally long distance in comparison to other papers.

These results are clearly not uniform, but they begin to frame a set of empirical regularities that will appear again. There is systematic evidence of a negative externality from a foreclosed home. It is significant, and the median discount is approximately 1 percent for homes with a foreclosure that are "close." This use of "close" rather than a specific number is another pattern that appears in the literature—there is no agreed-upon standard for "close," nor should there be. These are sample areas that differ in many ways, but chief among them is housing density. "Close" in a urban-focused data set may be 300 feet, where that number could be 0.125 mile in suburban areas.

Other earlier papers began to look beyond cross-sectional data and beyond establishing the foreclosure discount itself. Schuetz, Been, and Ellen (2008) made important contributions by extending the view of the foreclosure crisis to include foreclosure starts (lis pendens), recognizing the importance of distress rather than just foreclosure sales. They also use time series data that enable them to look at the impact of foreclosure notices in areas knowing their eventual foreclosure activity. They find that the foreclosure discount is largest in areas that ultimately have more foreclosures, suggesting that variation in neighborhood characteristics may condition foreclosure spillovers.

Harding, Rosenblatt, and Yao (2009) make several contributions but generally support earlier results found in the cross-sectional papers. Using more than 400,000 repeat sales across seven metropolitan statistical areas (MSAs), they explore the spatial impacts of foreclosure and the evolution of the discount over the period of distress. They find that approximately 1 percent of a house sale price is lost because of a foreclosure within 300 feet and at the time of the foreclosure sale—that is, the foreclosure discount is lower before foreclosure, peaks at foreclosure, and then declines again afterwards.

Campbell, Giglio, and Pathak (2011) extend data in Massachusetts 20 years to collect 1.8 million observations. Again, they find similar results—a discount of about 1 percent within one-half mile of a foreclosure, though the predictions are stronger within smaller distances. Daneshvary and Clauretie (2012) studied one of the foreclosure epicenters in Clark County, host of Las Vegas. They use multiple listing service (MLS) data on single-family detached sales from January 2008 to June 2009 and include exposure to proximal REO (real estate owned) properties and also nearby short sales. They find larger effects than typical, a foreclosure discount of 2.9 percent, and that this impact decays with distance such

that is not different from zero by one-half mile from the subject property. Interestingly, they find no impact of an additional short sale, suggesting that foreclosed homes are a disamenity rather than simply additional supply.

Mikelbank (2008) follows the early cross-sectional papers, but does so by comparing the combined effects of foreclosure with vacant or abandoned properties. This is important because it formally acknowledges other foreclosure dynamics at work—in particular, that foreclosure, abandonment, and vacancy are correlated, so that omission of these variables can lead to differences in measured impacts. He finds that, modeled together, a vacant property causes a greater discount than in a model that excludes foreclosure (though for a shorter distance).

Hartley (2010) and Whitaker and Fitzpatrick IV (2013) take a different approach, where foreclosure impacts are moderated in a model that includes vacancy rather than modeled separately. These studies begin to show the fraying of the consensus on price effects. Both papers make an important observation about selection among foreclosures—that banks have some control over which units become foreclosed and are sold, implying some nonrandom selection in the data used in all the papers described above. Although Whitaker and Fitzpatrick IV find a foreclosure spillover of 1.5 percent—and a 2.1 percent discount for a vacant home—within 500 feet, however, Hartley finds no foreclosure discount. Instead, he finds that an "extra unit of supply" within 0.05 miles competes with nearby homes on the market and decreases a house sale price by 1.2 percent.

Hartley's finding emphasizes the competitive effect of foreclosures—a foreclosure necessitates a vacancy that then competes with other houses on the market in the neighborhood and may lead to otherwise lower prices. Anenberg and Kung (2012) find support for the competitive effect versus the disamenity of foreclosure. By exploiting the timing of a foreclosure and MLS data from San Francisco from 2007 to 2009, Anenberg and Kung estimate that there is a stronger competitive effect from an REO than from a disamenity associated with the foreclosure.

Fisher, Lambie-Hanson, and Willen (2013) find the opposite. The authors use a clever identification strategy through use of condominiums and homeowners associations. They find that proximal foreclosures in different associations have little impact on sales. In contrast, condominiums trade at a 2.4-percent discount within the same building that has a foreclosure. All three of these papers are highly local. Clearly, condominiums in Boston are not representative, but neither are units in Cuyahoga, Ohio. Although the Anenberg and Kung paper covers six counties in the San Francisco metropolitan area, the region has done better with regard to the recovery than most. The fact that the region had different expectations and so much real estate value from land relative to structure—the opposite of Cleveland—may suggest that estimated differences arise from dynamics that simply differ across submarkets. Generalizing from local studies—even when executed carefully—is difficult.

Several papers attempt to look across multiple submarkets for the express purpose of finding common results. Gerardi et al. (2012) use repeat sales observations from 15 MSAs from 2001 to 2010, resulting in almost a million second sales between 2006 and 2010. The authors are careful to tease out the effect of distress versus REO status. Gerardi et al. take an unusual approach in an attempt to control for unobserved heterogeneity and to inoculate the results from simultaneity bias. They include dummies for each census block group and year of purchase in their sample. Moreover, they include housing characteristics such as age, age squared, log of lot size, and log of living area. This large number of dummies provides great flexibility to capture differences in geography but imposes fixed parameters (implicitly, in the assumption that the attribute prices are unchanged over time, and explicitly, in the

assumption that the dwelling attributes in the repeat sale regressions are the same shifters over time and space). In exchange for these assumptions, they get a different sort of approach but one that yields qualitatively similar results: small foreclosure discounts of less than 1 percent within 0.10 of a mile. The authors also suggest that, because the negative spillover peaks before foreclosure, the longer period of distress be considered highly relevant rather than the date of foreclosure, looking at the stock of distressed properties rather than a flow into a particular foreclosure status.

Another paper that looks across a diverse set of locations is by Ihlanfeldt and Mayock (2013). The authors look at 10 diverse counties in Florida to examine the externality from REO properties sold both to owner-occupiers and to investors. Using Florida's Homestead exemption, the authors were able to make assumptions about who was and was not an investor out of REO, and then estimate spillovers for both. The results suggest that REOs sold to owner-occupiers have fewer longer term implications for surrounding house prices. They find that current REOs contribute to lower house prices nearby of between 1 and 3 percent within 300 feet but smaller or insignificant results beyond. With regard to owners and investors, they find that there is scant systematic evidence that ex-REOs purchased by owners yield a negative spillover. Investors, in contrast, who buy REOs are associated with negative spillovers out to a distance of 1,000 feet, though the spillovers dissipate over time. Interestingly, the strongest results of the paper were for housing tenure after an REO sale. Out to 1,000 feet, an REO sold to an investor for a rental exhibits a significant negative effect on surrounding prices in all 10 counties.

There are other ways to explore price discounts arising from foreclosures, and there are other metrics for capturing impacts of foreclosures. For example, Mian, Sufi, and Trebbi (2011) take a national view using state-level, Core Based Statistical Area-level, and tract-level analyses to identify the impact of foreclosures and find that foreclosures were an "important factor in weak house price, residential investment, and durable consumption patterns" between 2007 and 2009. Their empirical contributions are the use of regression discontinuity and how the study exploits state differences between judicial and nonjudicial foreclosure regimes. Although they start with all the states, the tract-level analysis ends up with just 862 tracts that meet the requirements of the analysis and are within 50 miles of the state border (and just 96 tracts within 5 miles). Despite looking broadly for results, the data limit the results to local analysis and none of the "Sand State" tracts where foreclosure was most affected. Though not comprehensive, the results nonetheless suggested that foreclosures led to significant house price discounts.

Taken together, there is ample evidence that there are negative spillovers from one foreclosure to proximal homes. Many authors point out that although the direct penalty from a single foreclosure is small, properties in neighborhoods that have multiple foreclosures could face a large cumulative price discount.

2.1.2 Neighborhood Variation and the Context for Foreclosure

The notion that neighborhoods differ and these differences matter for foreclosure outcomes is another theme within the existing literature. Variation can also be found in those foreclosure papers that look across submarkets and time, but it also is implicit in the differences in local housing stocks, housing market fundamentals, and regulatory regimes across those papers that are local in scope. In short, this section highlights the localized nature of existing studies, noting that neighborhood contexts matter greatly when empirically examining the impacts of foreclosures on housing prices.

Several papers, for example, took overt steps to assess the diversity of house prices and foreclosure activity. In 2008, Immergluck inventoried REO by several categories: central city and suburban markets,

key metropolitan areas, and ZIP Codes where high or very high levels of REO could be found. He found marked differences across MSAs and for ZIP Codes within them. In light of the significant variation he found, he argued that, "The importance of understanding cross-market differences in REO patterns speaks to the need for federal policymakers to develop reliable, publicly available data that can be used to track foreclosure and REO activity and, to the degree possible, that are comparable across neighborhoods, localities, and states." Brown et al. (2012) also undertook a broad look at spatial variation in mortgage delinquencies and developed a six-member taxonomy of ZIP Code-level outcomes in 2008 across 91 MSAs. The MSAs were grouped based on the level of the delinquency rates and the correlation in delinquency across ZIP Codes in the MSA. Importantly, they found large variations within MSAs, and the grouping by MSAs is not readily reduced to natural regions of the country.

Reid (2010) uses a different taxonomy to demonstrate difference between "Boomburbs" relative to "Steady Growth" and "Established" MSAs. She finds that REO accumulation was faster in the Boomburbs but so, too, is REO clearance. Collectively, it is easy to see that "the" foreclosure crisis is not one thing and, in fact, can be organized around many different dimensions.

The diversity in these foreclosure outcomes parallels an equally broad look at house prices, which is directly related to default and foreclosure. Cohen, Coughlin, and Lopez (2012), for example, focus on house prices within and across 16 metropolitan areas. They find that neighborhoods in the lower tiers tended to have the higher percentage price increases than other price tiers during the boom and the largest percentage price decreases during the bust.

The primary driver of defaults and foreclosures is house prices. We describe these findings to make clear that the diversity of house price movements will make aggregation difficult within metropolitan areas. To this point, Galster and Tatian (2009) argued that housing submarkets in lower income neighborhoods in Washington, D.C., do not move coincidentally with the rest of the metropolitan area; they find that a "rising tide," though helpful, is by no means a sufficient condition, even during a historically robust market. Some neighborhoods in Washington never experienced much of a bubble before the bust; aggregate prices mask important local variation. Martin (2011) makes this same argument across European housing markets as well as highly local markets in the United States. Aalbers (2009) examines local U.S. housing markets, local capital flow (especially predatory lending), and local outcomes, finding that lower income households were more likely impacted during the crisis.

These papers began with a specific question about the spatial organization of an outcome. Other motivations are different but can also end up documenting significant differences along a number of important dimensions. Gerardi, Lambie-Hanson, and Willen (2012), for example, examine foreclosure outcomes but exploit simple but meaningful differences in states with and without judicial foreclosure. They find that judicial foreclosure states do not produce better outcomes and instead only delay the process. In the process, they document marked differences in cure rates and time between 90 days late and foreclosure. Glaeser, Gyourko, and Saiz (2008) demonstrate differences in supply elasticity across MSAs and differences in epochs. During house booms from 1982 to 1988 and 1996 to 2006, house price increases were higher where supply was more constrained. Interestingly, more supply-elastic places largely missed bubbles in the earlier boom but became some of the best examples of bubbles by 2006, when real price appreciation averaged "81 percent in the relatively inelastic markets and 34 percent in the relatively elastic markets." These results suggest both spatial variation as a function of available land and regulation but also that the impact of these factors was not consistent across time.

On a narrower topic, Rose (2013) examines balloon payments and prepayment penalties while focusing on antipredatory lending laws (APLs). The Rose study addressed state versus federal APLs but in doing so provided evidence that there were significant differences the effect of these factors on the probabilities of foreclosure and prepayment across subprime markets.

Other examples of variation in foreclosure outcomes can be seen in the results of Ding, Quercia, and Ratcliffe (2010), who find that concentration subprime borrowing increases the probability of default. This contrasts somewhat with the results of Agarwal et al. (2012), who find that subprime lending is clustered throughout Phoenix, Arizona. After careful control for borrower characteristics, however, they do not find that the concentration of subprime leads to higher default. Rather, they find the "aggressive" mortgage products (hybrid adjustable-rate mortgages and no- or low-documentation loans) to increase the likelihood of default.

Hyra et al. (2013) look at patterns of racial/ethnic segregation and lending patterns within them. Following Been, Ellen, and Madar (2009) and Avery, Brevoort, and Canner (2008), the authors undertake a national analysis of borrowing tendencies. They find that African-Americans are still more likely to receive a high-cost loan and, in this case, that Black-White segregation leads is a significant predictor of the proportion of subprime origination. Quercia, Pennington-Cross, and Tian (2012) find that both the amount of home equity and local labor market conditions "can have different impacts on default and prepayment probabilities." This dependence on local labor markets and negative equity introduces several other dimensions of variation. The first of these is variation in local fundamentals. That labor markets contributed to outcomes is not surprising, but it points out how pooling data across markets with proper controls may lead to problems with interpretations of the results. To wit, Gyourko and Tracy (2013) suggests that part of the reason that unemployment has been surprisingly ineffective at explaining default is because of the use of aggregate unemployment in the tract. When individual unemployment risks are considered, the impact of unemployment on default is 100 times greater.

The dependence of negative equity on foreclosure is another area in which the basic logic of default and foreclosure implies that house prices alone cannot explain them. That is, homeowners have to borrow against their house for default to be relevant. As such, house prices play an obvious contributing factor to foreclosure but so, too, does the borrowing habits of homeowners. Adelino, Schoar, and Severino (2012) suggest that access to credit causes higher house prices. Mian, Sufi, and Trebbi (2011) show that those who borrow more against their homes were more likely to default.

2.2 The Impacts of Foreclosure on Vacancy and Housing Tenure

Vacancy and tenure change represent additional dimensions of foreclosures' impacts on their surrounding neighborhoods. For both homeowner and rental properties, the direct impact of a foreclosure usually displaces the current resident and creates a period of vacancy for the housing unit. The change in ownership also introduces a property transfer that may transition the property to rental occupancy.

The literature reviewed in the previous sections highlights the role of vacancy in producing the negative externalities of foreclosed properties on neighboring home prices.[16] To the extent that vacant properties receive less maintenance and are subject to vandalism and theft, foreclosure-related vacancy spells have the potential to create negative externality effects for nearby properties. For example, Cui (2010)

[16] See also Han (2013).

examines the impact of foreclosure on crime, concluding that foreclosed properties are most vulnerable during periods of vacancy. This literature suggests that periods of vacancy associated with foreclosure and REO may be central to estimated impacts on home prices and crime.

An established literature also documents the implications of abandonment and blight for longer term neighborhood stability and revitalization.[17] It remains too early to determine the extent to which the foreclosure crisis produced long-term abandonment and blight. Although discussions of the foreclosure crisis frequently raise concerns about the consequences of foreclosure-related vacancy,[18] little evidence exists regarding the frequency and length of foreclosure-related vacancy spells.

The consequences of foreclosure-related tenure change are less clear. The literature on community development and neighborhood stability suggests that neighborhoods with higher levels of homeownership are more stable and may benefit from greater investment by homeowner residents.[19] It is unclear to what extent the same logic applies to neighborhood stabilization following the foreclosure crisis, however. Investors' purchase of foreclosed homeowner properties may erode neighborhood stability to the extent that these purchase result in longer term changes in the homeowner composition of the neighborhood. In addition, investors' purchase of REO properties may act as a signal of disinvestment to the extent that investors mothball properties or do not seek to find new occupants.

Investor activity may also have supported neighborhood stability in some markets, however. For example, in neighborhoods that have weak demand from potential homebuyers, investors' purchase of REO properties may have reduced the surplus of REO properties. Similarly, investors' expertise with the REO process might accelerate the reoccupancy of some properties, especially if investor buyers were willing to make needed repairs or sought to quickly resell or rent the property to a new occupant. For example, Pelletiere (2010) proposed conversion of foreclosed properties to rental occupancy as a strategy for neighborhood stabilization in markets with a surplus of housing units.

These dynamics are likely to have played out differently in different types of neighborhoods and housing markets. Mallach (2010) proposed a typology that categorizes the different types of investor roles into "flippers," "rehabbers," "milkers," "short-term holders," and "medium-to-long-term holders." These categories highlight the potential for investor purchases to both support and erode neighborhood stability, depending on the investor's strategy and the context of the neighborhood housing market. Ellen, Madar, and Weselcouch (2013) and Immergluck (2013b) examine investors' roles in purchasing REO properties in Atlanta, Miami, and New York City. Similarly, Herbert et al. (2013) and Fisher and Lambie-Hanson (2012) study the role of investors in neighborhoods of Boston that have dense foreclosure activity. These case studies highlight the complexity of investor roles and do not provide a simple narrative about the relationship between investor activity and neighborhood stability. In addition, further research is necessary to understand the extent to which foreclosures altered the longer term homeownership rates of distressed neighborhoods.

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[17] See, for example, Accordino and Johnson (2000) and Galster, Hayes, and Johnson (2005).

[18] *REO & Vacant Properties: Strategies for Neighborhood Stabilization*. Washington, D.C.: Joint Publication of the Federal Reserve Banks of Boston and Cleveland and the Federal Reserve Board, 2010.

[19] See, for example, Galster, Hayes, and Johnson (2005).

2.3 The Impacts of Foreclosure on Crime

A growing body of literature suggests that foreclosures are associated with increased crime in the neighborhoods surrounding the foreclosed properties. Immergluck and Smith (2006b) provided the first evidence of a relationship between foreclosures and crime. Their analysis examined crime outcomes in Chicago neighborhoods in 2001, documenting that census tracts that have more foreclosures experienced higher levels of crime. Multiple subsequent studies have similarly examined data aggregated to the block group, tract, county, or metropolitan area (Baumer, Wolff, and Arnio, 2012; Goodstein and Lee, 2010; Jones and Pridemore, 2012; Kirk and Hyra, 2012; Wallace, Hedberg, and Katz, 2012). With the exception of Kirk and Hyra (2012), each of these studies finds that a relationship exists between foreclosures and crime. The studies rely on varying measures of crime, however, and do not always produce consistent findings about the extent to which foreclosures impact violent versus property crime and the component crimes that fall in each category.

We know of only three studies that have used causal research designs with data aggregated to smaller geographies (Cui, 2010; Ellen, Lacoe, and Sharygin, 2013; Stucky, Ottensman, and Payton, 2012). Each of these studies provides evidence that the relationship between foreclosures and crime is causal: foreclosures result in crime. A fourth study concludes that the relationship is causal on the basis of Granger causality tests and multilevel growth modeling (Williams, Galster, and Verma, 2014).

Taken together, the evidence in these studies raises concerns about the potential for the foreclosure crisis to have resulted in increased crime in affected neighborhoods. The existing evidence is subject to several limitations relevant to analysis of NSP2, however. First, each study is specific to the city examined by the empirical analysis. As a result, the findings may not be generalizable to other cities or to the specific neighborhoods in which NSP2 investments were made. Second, these studies measure the impact on crime prior to the NSP2 period. None of the 10 studies examines data from 2010 or later, and 7 of the 10 studies analyze pooled data that include years prior to and following the start of the foreclosure crisis. Only Wallace, Hedberg, and Katz (2012) examine whether the impact of foreclosures differs prior to and following the start of the foreclosure crisis, finding that the relationship between foreclosures and crime disappears during the years following the foreclosure crisis. This result suggests that the available evidence may not be sufficient to draw conclusions about whether foreclosures are likely to have produced crime in NSP2 neighborhoods during the NSP2 period.

The existing evidence also has not yet disentangled the mechanisms through which foreclosures affect crime. The hypothesized mechanisms frequently include several possibilities. First, periods of vacancy for the foreclosed property may create opportunities for burglary, theft, and other crimes related to unauthorized use of the property itself. Second, the presence of a vacant property or turnover of neighborhood residents may reduce the extent of neighborhood monitoring by reducing the number of residents or weakening the relationships between neighborhood members. Finally, the presence of a foreclosure—and any associated reduction in maintenance—may attract crime to the extent that it creates a source of blight or alters perceptions about the risk of arrest. Although these mechanisms are frequently hypothesized as sources of a relationship between foreclosures and crime, little empirical evidence exists regarding the relative contribution of each mechanism.

The upshot is that further research is necessary to better understand the potential for NSP2 activities to impact crime. Specifically, the existing evidence does not provide conclusive information about either the extent to which foreclosures caused crime in the types of neighborhoods targeted by NSP2 activities or the potential for NSP2 interventions to affect crime outcomes.

2.4 Foreclosures and Visual Blight

As demonstrated earlier, the emerging literature on the foreclosure crisis provides the most recent evidence on the negative externality effects associated with foreclosures. It is unclear what causal mechanism is at work, however. Three common explanations for the spillover effect are increased supply, decreased demand, and deferred maintenance.

The increased supply and decreased demand hypotheses are described in Section 2.1, exemplified by the works of Immergluck (2008); Gerardi et al. (2012); and Fisher, Lambie-Hanson, and Willen (2013). The third hypothesis states that financially distressed properties exhibit signs of deferred maintenance, and it is this disamenity that is the proximate cause of the spillover when it becomes capitalized in neighboring home prices.

A lack of investment could happen for a variety of reasons. It is possible that homeowners facing foreclosure have encountered a dramatic life event, such as loss of employment, that has left them with little cash flow to undertake investment. A second hypothesis is that homeowners who have negative equity in the property will not invest because benefits will accrue to the lender. A third explanation is that when the property is REO, the lender will underinvest in the property and or it will become a target for vandalism or theft.

There is growing support for the deferred maintenance hypothesis. Daneshvary, Clauretie, and Kader (2011) show evidence that properties in default are in worse condition than nondefault properties, although it is unclear whether properties already in poor condition are just more likely to end up in default. Lambie-Hanson (2013) shows properties in financial distress, especially those that are REO, receive more complaints about their physical appearance than other properties. Melzer (2013) finds that homeowners in a perceived negative equity situation invest less in their properties. Melzer's finding rules out several alternative possibilities. He shows that wealthier owners who likely do not have cash flow problems also invest less. He also shows that, even though homeowners invest less in maintenance and improvements that are part of the physical structure, they do not decrease their consumption of other durable goods that are not under the mortgage overhang, like automobiles and washing machines. These findings suggest that cash flow problems do not account for the lack of investment in the property itself. An important caveat to Melzer's finding is that he relies on self-reported data, and a homeowner's perceived equity may be more important than his actual position. This is allows his results not to conflict with Lambie-Hanson's (2013) finding that actual negative equity was unrelated to complaints.

If the negative equity hypothesis is correct, it suggests that properties could begin to see physical deterioration long before they are REO and even before a notice of default. It also suggests that many properties are at risk of deferred maintenance. Haughwout, Peach, and Tracy (2009) estimate that more than 15 percent of homeowners in hard-hit cities were in a negative equity position at the height of the crisis. Melzer (2013) estimates an additional 7.5 percent of owners had equity equal to less than 10 percent of the property's value. This would suggest that more than one in five homeowners would have had an incentive to forego investment.

Although Lambie-Hanson (2013) and Melzer (2013) show a relationship between financial and physical distress, they do not reveal a spillover effect other than the inconvenience encountered by Lambie-Hanson's complainants. Gerardi et al. (2012) find that foreclosures in poor physical condition have negative spillovers, although properties in good physical condition do not, suggesting that visual distress is responsible for the entire externality.

2.5 Studies of Neighborhood Stabilization Programs

As time passes and house prices rediscover equilibrium, researchers have begun to sift through a wide diversity of local housing dynamics. Relatively little research has been undertaken on any of the NSPs, likely because the implementation has only recently wound up. There is a well-established body of literature on the rationale for government intervention and a long history of such activities (for example, Schwartz, 2010). The Home Affordable Modification and Home Affordable Refinance programs have received the large majority of the attention on government activities responding to the foreclosure crisis. The vast majority of papers on the bubble and bust focus on outcomes and dynamics, but there are not yet any peer reviewed journals that have examined NSP2.There are some papers in progress (working papers) and reports produced for the U.S. Department of Housing and Urban Development, however. We discuss this literature in this section.

An early paper by Joice (2011) lays out the economic justification for and goals of NSP. Whereas some of the federal policies enacted early in the Great Recession—such as the first-time homebuyer tax credit, the Federal Reserve's monetary policies, and the government's support for government-sponsored enterprises—were aimed at general housing market stimulus, these were not geographically targeted at those areas most directly impacted by the foreclosure crisis. An increase in home purchase activity, reductions in inventory, and subsequent positive impacts on housing prices at the national or even metro area level would likely not be sufficient to mitigate neighborhood-level negative externalities among the hardest hit areas. NSP2 in particular was intended to encourage grantees to focus their investment in census tracts that had a high risk of future foreclosures and abandonment while retaining flexibility in deciding how to meet local needs through the choice of activities.

Perhaps most directly relevant to the current study, The Reinvestment Fund (TRF) has investigated the spatial concentration of NSP properties and changes in prices and vacancy rates in NSP neighborhoods (TRF, 2013). They define NSP Investment Clusters (NICs) as clusters of one to four census block groups that have at least two NSP properties (across all three rounds of NSP) in an area with at least 6 NSP properties within 0.25 mile. Overall, they identify 2,447 NICs containing 36,546 (61 percent of total) NSP properties. To determine whether NSP has impacted housing prices and vacancy rates, they match each NIC to three "comparable" block groups, defined as block groups at least 0.125 mile away from a NIC. Comparable markets are selected based on average housing price (2008); change in average housing price (2006 to 2008); homeownership rate (2010); NSP1 HUD risk score; and number of housing units (2010 census). Few details are provided on the matching methodology, so it is unclear how it was determined that block groups were comparable on these variables. Notably, the comparable markets could contain up to three NSP properties, so these may not be clean control groups. About 26 percent (627 or 2,447) NICs did not have enough observed sales data to be assessed on changes in housing prices. The outcome variables used are change in median home sale price, 2008 to 2012 (from Boxwood Means) and change in vacancy rate from the first half of 2008 to first half of 2012 (U.S. Postal Service).

After comparing each NIC to its three comparable block groups, TRF assigned each NIC a score based on how many comparable markets (comps) scored "worse" than NIC (it is not clear whether *worse* means any lower value or whether there was some margin of performance). NICs that scored "better" than all three comps received an A, better than two comps received a B, and so forth for C and D grades. On home prices, about 27 percent of NICs outscored all three comps, while about 29 percent were outscored by all three comps. For all the tables presented, about one-half of NICs scored in the top two categories (beat two to three comps), with one-half of NICs scoring in the bottom half. No tests of statistical

significance are presented. Essentially, these results are consistent with expectations of a random draw: if housing prices in NICs do not really differ from other neighborhoods, the probability that housing prices in a NIC fall in the upper half of the distribution would be 0.5. Thus, TRF's findings are also consistent with the results of the tract-level impact analysis conducted in Chapter 8 of this study, which finds no statistically significant effect of NSP2 on housing prices and vacancy rates.

In a working paper from the Federal Reserve Bank of Cleveland, Ergungor and Nelson (2012) examine the impact of NSP on vacancy rates in Cuyahoga County from 2006 to the end of 2010. They compare vacancy rates of former REO properties purchased with NSP funds to vacancy rates of comparable former REOs not funded by NSP. A key element in their analysis is to classify the buyers of former REOs into three categories: investors, nonprofit organizations, and individuals. This classification is implemented using the listed names of buyers (indicators or corporate status) and frequency of purchases (individuals who bought or sold four or more properties in a 5-year period). They find that NSP properties tend to have lower property values, to be older and smaller housing units, and to be located in more heavily minority neighborhoods. Of the three types of buyers, investors are the most common purchasers of former REO properties, both in NSP and in non-NSP blocks. Nonprofit organizations bought a small number of properties and typically in the worst neighborhoods. Vacancy rates of former REOs are higher in NSP-targeted areas for all three buyer types, likely because of the initially worse housing market conditions. Comparing vacancy rates of post-REO properties, they find that, in neighborhoods targeted by NSP1, properties purchased by individuals (that is, presumed owner-occupants) are less likely to be vacant. They find no significant difference in vacancy rates among NSP2-targeted areas, although during their study period, few NSP2 properties had completed rehabilitation. The authors conclude that "vacancy rates decline if the property was purchased out of REO by an individual" in an NSP1-targeted area.

Graves and Shuey (2013) offer a small-scale, mostly qualitative analysis of changes in social conditions around properties in Boston that were rehabbed using NSP funding (the authors do not specify which rounds of NSP funding were used). They selected eight NSP-rehabbed properties and eight non-NSP vacant former foreclosures in the same neighborhood. No information is provided about the selection process of either NSP or control properties, and it is unclear whether these properties and blocks are typical of NSP-treated areas in Boston more generally. The authors conducted visual inspections of the treatment and control blocks in 2011 and 2012 to assess the physical condition and conducted both in-person and mail surveys with approximately 300 residents in immediately nearby housing units (adjacent on either side and directly across the street). Roughly 25 percent of the eligible residents responded to the survey in each year, raising concerns about selection bias. Although descriptive statistics on the respondents are provided, there is no comparison of respondents with demographic or economic characteristics in the surrounding neighborhoods or NSP-treated areas within Boston. Respondents were primarily renters (75 percent), overwhelmingly non-White (80 percent African-American and 12 percent Hispanic), and report an average of 12 years in their current residence. The authors report an average score for "sense of community" as 3.28, but no interpretation of this value is given, and the scale of measurement is not indicated. Notably, the authors find that only one-half of the eight NSP properties were renovated or undergoing renovation as of the second year (2012), while seven of the eight control properties (also previously vacant REOs) had been rehabbed. The authors estimate a difference-in-differences equation on their reported score of "sense of community" and find no significant difference in the score between residents on NSP blocks and control blocks, either in the first or second year (technically, the coefficient is an intent to treat rather than treatment, because one-half the properties had not been rehabilitated). Through the qualitative interviews, the authors discovered than most residents on

both treatment and control blocks did not realize that the vacant homes had undergone foreclosure and did not list the presence of vacant homes as a substantial source of concern.

Several features of the Graves and Shuey study make it difficult to interpret their results. The small sample size of both properties and survey respondents and the lack of detail on selection criteria raise significant concerns about selection bias. The sample size makes it unlikely that they will observe statistically significant results. It is unclear what their main dependent variable, "sense of community," really captures and how this number should be interpreted. Perhaps the most interesting and important finding, though, is the neighbors' lack of awareness of proximity to a foreclosure. If neighbors do not perceive foreclosed or vacant properties as a problem, then rehabilitation of those properties is highly unlikely to change their perceptions of neighborhood quality. Boston is atypical of most cities targeted by NSP2, however, with lower foreclosure and vacancy rates. Boston's "worst" neighborhoods may not be good comparisons with NSP2-targeted areas in the current study.

3. Study Sample and Data

This chapter begins with a description of how the 19 Neighborhood Stabilization Program 2 counties were selected for the study sample, and then describes the data collected for the study and how we operationalized the definition of key variables used in multiple analyses, such as financially distressed housing, using the available data.

3.1 Selection of Counties for the Study Sample

This section describes the procedures for selecting the NSP2 counties for the study. The research team decided to use the county rather than the grantee as the primary sampling unit because the county is the most common level for obtaining property-level data from local governments and vendors. If we had used grantees as the primary sampling unit and selected 1 of the 13 NSP2 grantees operating in multiple counties, we would have had to conduct a second stage of selection to select a county associated with these grantees to ensure that the data-collection effort was consistent with the resources. We judged that it was more straightforward to use the ultimate analysis unit—the county—from the start. By selecting county as the sampling unit, we were also able to use local housing market conditions in our selection process.

The sample selection process proceeded as follows.

- *Create the sampling frame.* Beginning with the universe of all 133 counties targeted by NSP2, the study team applied two thresholds to pare down the list to counties with high NSP2 investments from which the most valuable information on the NSP2 program would be obtained.
- *Categorize counties by housing market.* The remaining counties were categorized based on the performance of the housing and labor markets during the housing boom and bust periods.
- *Select counties within housing markets.* The number of counties selected in each housing market was in proportion to the number of counties in that housing market in the sampling frame. The counties that had the highest expected NSP2 investment per census tract were selected until the number of counties reached the allocated amount. Manual substitutions were then made to ensure that the selected counties represented a large share of the NSP2 funding, were geographically diverse, and were representative of the type of grantee and planned grantee activities.

Each of these steps is discussed in more detail below. This section also compares the characteristics of the final study sample with the counties in the sampling frame and all 133 NSP2 counties.

3.1.1 Creating the Sampling Frame

Assuming that each grantee would invest the same amount in each census tract it targeted in NSP2, the estimated level of investment in a county ranged from less than $200,000 to more than $250 million. Judging that NSP2 would be most likely to have a detectable impact in counties where the investment was larger and consistent with the goal of ensuring that a large share of NSP2 investments were captured in the study, we reduced the sampling frame to counties that had the most substantial expected investments. Operationally, only counties with at least $10 million in expected investment or counties that were the primary county that a grantee was investing in (defined as the county with the most census tracts targeted by the grantee) were retained in the sampling universe. This step eliminated 78 of the 133 counties in which NSP2 investments are occurring, leaving 55 counties eligible for the study. More than one-half of the ineligible counties are from nonurban areas in Ohio and Colorado, where the expected NSP2 investment level was low.

3.1.2 Categorizing Counties by Housing Market

Although the housing crisis was national, the extent of the housing appreciation during the boom and extent of the housing market depreciation during the bust varied substantially across housing markets. The most extreme housing price fluctuations were in counties in states such as California, Nevada, and Florida, while counties in states such as Minnesota and Texas had pronounced but relatively more modest booms and busts, and counties in Rust Belt states like Ohio and Michigan had small boom and bust price changes. Although the national recovery was of unknown strength and timing at sample selection time, the research team expected the recovery to vary by the longer term trend of a state's economy and by how extreme the housing price boom-bust had been. Likewise, the research team judged that the implementation and impact of NSP2 might vary by housing market. Even though much of the analysis in this study is done at the county level because of the variation in housing markets even within the same category, the study team wanted to ensure that the sample had representation from diverse types of housing markets and to be able to identify patterns of findings by the conditions before and during the housing crisis.

After examining patterns in housing prices and unemployment rates before and during the housing market crisis, the research team identified four clear housing market patterns: Boom-Bust, Boom-Stable, Slow Growth, and Lagging/Declining (L/D) markets.[20] Based on geography and differences in how extreme the housing price changes were, the Boom-Bust housing-market category was divided into Boom-Bust Sand States (BBSS) and Boom-Bust East Coast (BBEC) markets. The result was the five housing market categories as defined below.

1. *Boom-Bust Sand States. Boom* was defined as being in a metropolitan statistical area in the top half of growth in price appreciation from the first quarter of 2000 to the second quarter of 2007, and the *postbubble bust* is defined as being in the top half of the decline in housing prices and increase in the unemployment rate from the third quarter of 2007 to the fourth quarter of 2009.[21] *Sand States* are used in the literature to refer to states with significant coastal beaches or deserts and substantial recent population growth. These states are usually referenced in the housing market literature as Arizona, California, Florida, and Nevada, but we also included the one Oregon county in the sampling frame in this list because both its geography and housing market cycle fit with the other Sand States.

2. *Boom-Bust East Coast States.* This category meets the same criteria as the BBSSs, except that the counties are not in a Sand State. All except one of the counties in this category are on the East Coast, in the New York-New Jersey area or elsewhere in the Mid-Atlantic area. The one non-East

[20] The study team originally planned to use population growth to define the housing market categories but subsequently dropped that plan because it resulted in categories with very disparate patterns of housing price change. Even without defining specific population growth criteria for the housing market categories, however, there are clear differences in the population growth patterns across the categories. The Boom-Bust Sand States clearly have the highest population growth rates and the L/D markets have very small or negative population growth rates during the boom. The population growth in the other three housing categories (Boom-Bust East Coast; BS; and SG) usually had small to moderate population growth rates during the period. Population growth rates from 2000 to 2006 are also shown in Appendix A–1.

[21] To be in the Boom-Bust category, a county had to be in an MSA with housing price appreciation of 49.6 percent or higher during the boom, a housing appreciation of −3.3 percent or lower during the bust, and an unemployment rate increase of 4 percentage points or higher in the bust period.

Coast county in this category is Cook County, Illinois. Cook County was put in this category because it fit the boom-bust patterns of the East Coast states better than the Sand States and did not meet the criteria for the other housing market categories. NSP2 counties in these boom-bust states did not see housing price appreciation or price depreciation rates as extreme as in the Sand State counties, but housing prices still increased by at least 65 percent in the boom. The counties in the East Coast also had modest to low levels of population growth in the first half of the 2000s, while the counties in the Sand States tended to have double-digit population growth rates during that period. The Sand States had correspondingly higher rates of housing growth, particularly in exurban locations. These differences in housing markets may affect housing market outcomes and the impact of NSP2, and thus the separation of the Boom-Bust group into two categories is warranted.

3. *Boom-Stable.* BS counties had above average housing price growth during the boom, but either did not have an above average decline in housing prices during the bust or did not have an above average increase in unemployment rates during the bust. These counties usually had housing price rate growth rates lower than the BBSSs but almost as high as the BBEC states. Their housing markets appear to have been more stable during the bust period than the BBEC states, as neither the housing price declines nor the unemployment rate increases tended to be as large.

4. *Slow Growth.* This category consists of counties in MSAs that are similar to the BS counties, except that housing prices did not increase as much during the boom period. Operationally, the counties in this category were in the bottom half of housing price growth during the boom period but on the lower half of unemployment rates at the end of the boom period.

5. *Lagging/Declining.* For this category, we identify counties that had housing markets that appear to be in a longer term decline than defined by just the national housing market bust period. Operationally, we placed counties in this category if the MSA was in the bottom half of price appreciation during the boom period and had an unemployment rate above the median at the end of the boom period in 2007.[22] The NSP2 counties in this category are almost exclusively in Ohio and Michigan. Most of these counties had declining population during the first half of the 2000s.

The housing price, unemployment, and population growth characteristics of the counties in the sampling frame are shown in Appendix A–1.

3.1.3 Selecting the Study Sample

The study sample is not intended to be statistically representative of all the NSP2 counties or even all the counties in the sampling frame; however, the sample is intended to represent the diverse counties receiving NSP2 investments and to oversample the counties that are expected to be most informative about the outcomes and impacts of NSP2—counties with the largest or most concentrated NSP2 investments. This section describes how the study sample was selected and the next section shows the characteristics of the study sample compared with the sampling frame and all NSP2 counties.

After placing all 55 counties in the sampling frame in the five housing market categories, slots in the study sample were allocated in proportion to the share of counties in each housing market. For example,

[22] To be in the L/D market category, a county had to be in an MSA that had housing price appreciation during the boom of 49.5 percent or lower and an unemployment rate of 4.7 percent or higher in 2007.

33 percent of the 55 counties in the sampling frame were located in BBSSs, thus 35 percent of the sample slots (7 of the 20 sample slots) were allocated to that category. The remaining proportions were BBEC (15 percent), BS (15 percent), SG (5 percent), and L/D (30 percent). In total, the planned study sample contained 20 counties.

To select the sample counties within the housing market categories, counties were ordered from the largest to smallest expected NSP2 investment per targeted census tract. Counties with the largest expected investment per census tract were selected until the planned number of counties allocated to the sample from that housing market category was reached. The reason for selecting the counties with the highest NSP2 dollars per census tract is the expectation that the potential impacts of NSP2 are more likely to be detected in neighborhoods with concentrated investments. The size of the NSP2 investment was not the only characteristic used to select the study sample, however. The sample was also selected to cover a large share of the NSP2 grant awards in total, provide geographic diversity in terms of states and urban/exurban areas, and represent the different types of grantees and the various activities allowable under NSP2. To achieve these other objectives, the study team manually replaced some of the initial sample counties, and 1 L/D county was dropped late in the study because of insufficient property-level information. The final sample from this selection process is shown in Exhibit 3–1. Based on information provided in the original applications, the 19-county sample:

- Includes counties in which 28 of the 56 NSP2 grantees are implementing NSP2.
- Covers 1,717 census tracts or 56 percent of the 3,068 census tracts targeted by NSP2.
- Has an expected investment level of $1.1 billion or 57 percent of the $1.93 billion in NSP2 grants.

3.1.4 Sample Characteristics Compared With Sampling Frame and All Neighborhood Stabilization Program

Exhibit 3–2 shows the characteristics of the 19 counties in the study sample compared with the 55 counties in the sampling frame and all 133 NSP2 counties. The primary difference between the sample counties and the other NSP2 counties is related to the focus on counties that have the largest and most concentrated NSP2 investments.

The sample counties had a higher price appreciation during the boom period (86.5 percent) than either the sampling-frame counties (78.4 percent) or the entire group of NSP2 counties (67.2 percent) and had a larger average decline during the bust period. The sample counties also have higher expected investments per county and per census tract than the other groups and are more likely to have more than one grantee implementing NSP2. The sample counties also tend to have larger central cities than the other groups. For example, none of the sample counties have a city of less than 200,000 as their largest city, whereas 9.1 percent of the sampling-frame counties and 33.1 percent of all NSP2 counties do. Related to the large city sizes, the sample counties are more likely to have a large share of minorities than the other NSP2 counties in the sampling frame. Aiming for a sample that more closely represented the sampling frame in the size of central cities and the share of minorities would require a tradeoff, with the goal of selecting counties that have the highest expected investments.

Exhibit 3–1: Characteristics of NSP2 Counties in the Study Sample by Housing Market Category

Sampled Counties	State	NSP2 Grantees Targeting County	Expected Grant Amount ($) To Be Invested in County	# of Targeted Census Tracts	Expected NSP2 Investment ($) per Targeted Tract
Boom-Bust market counties: Sand States (8)					
Washoe County	NV	Housing Authority of the City of Reno	$20,995,000	6	$3,499,167
Sarasota County	FL	City of Sarasota	$23,000,000	8	$2,875,000
Riverside County	CA	City of Indio	$8,310,000	3	$2,770,000
Palm Beach County	FL	Palm Beach County Lake Worth Community Redevelopment Agency	$73,237,500	35	$2,092,500
Miami-Dade County	FL	Habitat for Humanity International, Inc. Neighborhood Housing Services of South Florida, Inc.	$100,098,643	79	$1,267,071
Stanislaus County	CA	City of Modesto Center for Community Self-Help	$25,015,120	37	$676,084
Los Angeles County	CA	Habitat for Humanity International, Inc. Chicanos Por La Causa, Inc. City of Los Angeles Los Angeles Neighborhood Housing Services, Inc. City of Long Beach, California Center for Community Self-Help	$257,092,555	552	$465,747
Maricopa County	AZ	Chicanos Por La Causa, Inc. City of Phoenix	$111,621,662	280	$398,649
Boom-Bust market counties: East Coast states (3)					
Kings County	NY	Habitat for Humanity International, Inc. City of New York Department of Housing Preservation and Development	$34,930,950	46	$759,368
Cook County	IL	Chicanos Por La Causa, Inc. City of Chicago The Community Builders, Inc. City of Evanston Center for Community Self-Help	$133,323,227	386	$345,397
Washington DC	DC	Chicanos Por La Causa, Inc. (MiCasa) Washington, D.C., Department of Housing and Community Development National Housing Trust Community Development Fund	$29,743,867	23	$1,293,212
Boom-Stable counties (2)					
Ramsey County	MN	City of Saint Paul	$18,031,623	18	$1,001,757
Philadelphia County	PA	Chicanos Por La Causa, Inc.	$46,833,345	62	$755,377

Sampled Counties	State	NSP2 Grantees Targeting County	Expected Grant Amount ($) To Be Invested in County	# of Targeted Census Tracts	Expected NSP2 Investment ($) per Targeted Tract
		City of Philadelphia			
Slow Growth counties (2)					
Davidson County	TN	Metropolitan Development and Housing Agency	$30,470,000	17	$1,792,353
Denver	CO	Chicanos Por La Causa, Inc. (Del Norte) Denver Office of Economic Development	$29,257,884	35	$835,939.54
Lagging/Declining counties (4)					
Pulaski County	AR	City of Little Rock City of North Little Rock	$15,046,706	4	$3,761,677
Ingham County	MI	Michigan State Housing Department Authority	$40,923,460	17	$2,407,262
Wayne County	MI	Michigan State Housing Department Authority	$40,923,460	17	$2,407,262
Cuyahoga County	OH	Cuyahoga County Land Reutilization Corporation	$40,841,390	94	$434,483
19 counties	**14 states**	**28 grantees**	**$1,293,212**	**1,719**	**$1,570,437**

NSP2 = Neighborhood Stabilization Program 2.
Source**:** U.S. Department of Housing and Urban Development NSP2 data.

Notes**:** Counties were categorized in housing markets based on the conditions in the metropolitan statistical area in which they are located. For grantees that targeted more than one county, their expected investment per county was calculated as the same share of their grant amount as the share of their targeted census tracts that are in that county. For example, if a grantee targets 10 census tracts overall, including 3 in a particular county, that particular county's investment would be estimated as 30 percent of their NSP2 grantee award. The expected investment per census tract was calculated by summing the expected county investments for all grantees targeting that county divided by the number of unique census tracts targeted by any NSP2 grantee in that county.

Exhibit 3–2: Sample Characteristics Compared With Sampling Frame and All NSP2 Counties

Characteristic	Sampled Counties (*N* = 19)	Counties in Sampling Frame (*N* = 55)	All NSP2 Counties (*N* = 133)
Housing market category			
Boom-Bust market: Sand States	38.1%	32.7%	21.8%
Boom-Bust market: East Coast	14.2%	16.4%	10.5%
Boom-Stable markets	9.6%	16.4%	15.0%
Slow Growth markets	9.6%	5.5%	6.0%
Lagging/Declining markets	28.6%	29.0%	46.6%
Housing market indicators			
Average price appreciation rate in MSA: boom period	86.5%	78.4%	67.2%
Average price appreciation rate in MSA: bust period	– 21.5%	– 17.0%	– 11.6%
Change in unemployment rate in county: bust period	5.3 pp	5.1 pp	5.2 pp
Average population growth rate in county, 2000–2006	5.3%	3.3%	4.4%
NSP2 investment level in counties			
Average # of grantees per county	1.8	1.5	1.2
Counties targeted by more than one grantee	47.6%	34.5%	14.3%
Median $NSP2 per county	$30,470,000	$23,000,000	$3,331,529
Median $NSP2 per targeted census tract	$1,787,274	$917,614	$412,973
Census region			
Northeast	9.5%	14.5%	12.8%
Midwest	33.3%	34.5%	42.9%
South	33.3%	29.1%	20.3%
West	23.8%	21.8%	24.1%
Judicial states			
Number of states represented	14	23	28
In a judicial foreclosure state	38.1%	45.5%	53.4%
Population of largest city in county			
< 100,000	0.0%	0.0%	26.3%
100,000 to < 200,000	0.0%	9.1%	6.8%
200,000 to < 400,000	14.3%	10.9%	10.5%
≥ 400,000	85.7%	80.0%	56.4%
Minority concentration of county			
< 25% minority	9.5%	23.6%	46.6%
25% to < 50% minority	47.6%	43.6%	30.1%
≥ 50%	42.9%	32.7%	23.3%

MSA = metropolitan statistical area. NSP2 = Neighborhood Stabilization Program 2. pp = percentage points.
Sources: Price appreciation scores generated from Federal Housing Finance Agency Downloadable Housing Price Index Data (http://www.fhfa.gov/Default.aspx?Page=87); population figures downloaded from the Census Population Estimates Program at http://www.census.gov/popest/archives/2000s/vintage_2006/; unemployment rates calculated from the Bureau of Labor Statistics Local Area Unemployment Statistics Data at http://www.bls.gov/lau. State foreclosure laws are based on Cutts and Merrill (2008).

Notes**:** Characteristics of the county are based on the MSA in which they are located. The *boom period* is defined as first quarter of 2000 through the second quarter of 2007; the *bust period* is defined as the third quarter of 2007 through the fourth quarter of 2009. Average amounts targeted per county and per census tract are calculated by dividing grantee's total grant amount by the number of counties or census tracts targeted. This assumes that the grantee will spread its investments equally across targeted counties and census tracts. For categorizing the 35 NSP2 counties outside MSAs in housing market categories and for calculating housing market price trends, we used the information on the nearest MSA. These 35 counties are not in the sample or sampling frame. The District of Columbia is counted as a state in the count of states with counties that have NSP2 investments.

3.2 Data Sources and Measures

3.2.1 NSP2 Administrative Data Sources

The administrative data for the evaluation include information obtained from the U.S. Department of Housing and Urban Development and information collected directly from grantees.

U.S. Department of Housing and Urban Development Administrative Data

HUD provided the study team with access to the grant applications for all 56 NSP2 grantees as well as the data grantees reported in HUD's Disaster Recovery Grant Reporting (DRGR) system. This information was primarily used in sample selection, the implementation analysis, and in the description of production outputs for all 56 grantees.

The applications provided information on both the grantee and the grantee's initial plan. Key data obtained from the applications are:

- Grantee characteristics, including type (for example, nonprofit) previous experience, and size.
- Partners and partnership type (collaboration, subrecipients, none).
- List of targeted census tracts and location relative to each other.
- Planned leveraging.
- Expected activities and outcomes.

On average, grantees were awarded 70 percent of the amount they requested (although across grantee awards ranged from 15 percent to 100 percent). Because the amount awarded was usually less than the grantee requested, the activities carried out may vary considerably from the grantee's action plan. The action plans, reported in HUD's DRGR, reflect the actual grant amount and planned activities. Grantees also submitted quarterly performance reports throughout the grant period that are recorded in DRGR. Key data obtained from DRGR are:

- Actual award amount.
- Information on planned activities updated from what was in the application.
- Property-level information on NSP2 activities, including location and type of activity.
- Grant expenditures, including amount drawn down to date, amount obligated, amount expended, program income received, and amount spent per activity category.

Property-Level Data From Grantees

The data the grantees reported in DRGR are not as detailed as needed for the impact analysis. Specifically, the DRGR data do not have property-level information on the acquisition date, the start and end dates of each activity, and expenditures by activity. The acquisition and activity dates are needed to determine when to look at a property for impact of the NSP2 investment. Expenditure information by property is needed to determine whether it is the presence of an NSP2 investment or the size of the investment that makes a difference.

To obtain these data, the research team engaged grantees and their partners to compile property-level records for each NSP2 property. The data collection began in May 2013 and concluded in September 2013. The data account for the number of NSP2 properties and activities as of the date when grantees were able to provide the information; for most, this was July and August 2013. The undertaking

was challenging because the extent of the data request was comprehensive and the availability of property-level data was uneven. The data requested are:

- Property characteristics (25 data elements), including address information, NSP2 activity type, total amount of NSP2 funds expended, acquisition dates, structure type, number of units, lot size, and year built.
- Acquisition and rehabilitation activity data (9 data elements), including NSP2 and non-NSP2 funds expended on this activity, start and end dates, postrehabilitation sale or rental date, and buyer type.
- Financing activity data (5 data elements), including NSP2 funds and non-NSP2 funds expended on this activity, closing date, type of financing, and amount of financing.
- Redevelopment activity data (9 data elements), including NSP2 and non-NSP2 funds expended on this activity, start and end dates, sale or rental, postredevelopment sale or rental date, and buyer type.
- Demolition activity data (4 data elements), including NSP2 and non-NSP2 funds expended on this activity and start and end dates.
- Land banking activity data (4 data elements), including NSP2 and non-NSP2 funds expended on this activity and start and end dates.

The study team developed a data collection tool (based on Microsoft Excel) to capture the needed information. Grantees that maintain their records in hard copy entered their data in the Excel tool. Grantees that maintained their own Excel-based records or internal management information systems provided extracts that they either inputted into the data collection tool or submitted as exported files for research staff to input. Each grantee was assigned a data liaison to coordinate the data collection process.

During the data collection phase, the study team organized the data into two categories: priority data (or data that are critical to conducting the analysis) and secondary data (or data that enhance the robustness of the data but are not critical). Priority data are property address, NSP2 activity type, NSP2 and non-NSP2 funding amounts, and activity start and end dates. All other data, such as property characteristics, are secondary.

The comprehensiveness of the NSP2 property-level data collected from grantees and their partners varies considerably (see Exhibit 3–3). The comprehensiveness of the data from each organization is classified as follows:

- Complete: the organization provided the requested data.
- Partial: the organization provided the priority data points and provided some of the remaining data points.
- Minimum: the organization provided only the priority data points.

Exhibit 3–3: Comprehensiveness of Property-Level Data From Grantees by County

County	Organization[a]	Comprehensiveness
Cook County	Center for Community Self-Help	Complete
	Chicanos Por La Causa, Inc.	Minimum
	City of Chicago	Partial
	City of Evanston	Complete
	The Community Builders, Inc.	Complete
Cuyahoga County	Cuyahoga County Land Reutilization Corporation	Partial
Davidson County	Metropolitan Development and Housing Agency	Partial
Denver County	Chicanos Por La Causa, Inc.	Complete
	City & County of Denver Office of Economic Development	Complete
District of Columbia	Chicanos Por La Causa, Inc.	Complete
	Washington, D.C., Department of Housing and Community Development	Complete
	National Housing Trust Community Development Fund	Complete
Ingham County	Michigan State Housing Department Authority	Minimum
Kings County	City of New York Department of Housing Preservation and Development	Partial
	Habitat for Humanity International, Inc.	Partial
Los Angeles County	Center for Community Self-Help	Complete
	Chicanos Por La Causa, Inc.	Complete
	City of Long Beach, California	Complete
	City of Los Angeles	Complete
	Habitat for Humanity International, Inc.	Complete
	Los Angeles Neighborhood Housing Services, Inc.	Partial
Maricopa County	Chicanos Por La Causa, Inc.	Complete
	City of Phoenix	Partial
Miami-Dade County	Habitat for Humanity International, Inc.	Partial
	Neighborhood Housing Services of South Florida, Inc.	Partial
Palm Beach County	Lake Worth Community Redevelopment Agency	Complete
	Palm Beach County	Complete
Philadelphia County	Chicanos Por La Causa, Inc.	Partial
	City of Philadelphia	Minimum
	The Community Builders, Inc.	Complete
Pulaski County	City of Little Rock	Partial
	City of North Little Rock	Partial
Ramsey County	City of Saint Paul	Minimum
Riverside County	City of Indio	Complete
Sarasota County	City of Sarasota	Partial
Stanislaus County	City of Modesto	Complete
Washoe County	Housing Authority of the City of Reno	Partial
Wayne County	Michigan State Housing Department Authority	Minimum

[a] Organizations in the exhibit are entities within each county that stored Neighborhood Stabilization Program 2 (NSP2) property-level data. The list may not include every NSP2 grantee and partner in the county if the organization did not store property-level data.

3.2.2 Foreclosure and Transaction Data

The foreclosure and transactions data purchased from a private vendor (CoreLogic, Inc.) that collects county assessor data are used extensively in the census tract- and property-level impact analyses of housing outcomes and crime (hereafter referred to as *Foreclosure and Transaction Data*). It is also used in the descriptive analysis of vacancies and foreclosures. It is used to identify properties that were sold and their sale price, whether properties were purchased by an investor or owner, and properties in financial distress, including foreclosed homes. It also includes the address of the property and

characteristics of the property. The address is used to identify the location of the property relative to NSP2 properties and to all other financially distressed housing.

The Foreclosure and Transaction Data include all properties that had a property transaction between January 1, 2000, and the end of the analysis period on February 28, 2013. Exhibit 3–4 presents the total number of records by county and overall.

Exhibit 3–4: Number of Transaction Records by County, 2000–2013

County	Number of Records	County	Number of Records
1. Los Angeles, CA	1,531,845	11. Sarasota, FL	154,233
2. Maricopa, AZ	1,061,658	12. Denver, CO	142,962
3. Cook, IL	987,785	13. Davidson, TN	138,753
4. Miami, FL	563,026	14. Washoe, NV	119,231
5. Riverside, CA	535,597	15. Washington, D.C.	113,261
6. Wayne, MI	437,540	16. Stanislaus, CA	109,715
7. Palm Beach, FL	437,393	17. Pulaski, AR	85,331
8. Philadelphia, PA	324,101	18. Ramsey, MN	77,018
9. Cuyahoga, OH	272,941	19. Ingham, MI	52,885
10. Kings, NY	182,866	**Total**	**7,328,141**

Source: Property and transaction data.

The primary limitation of these data is that they exclude properties with no transactions in 2000 or later, meaning that the data are not exhaustive of all properties in each county. The data may also exclude properties that are missing from local county assessor records. Although the resulting datasets are not exhaustive of all properties in each county, they provide an extensive inventory of properties and property transactions.

The data include all recorded transactions for residential properties in each county, including single-family residences, condominium units, duplexes, townhouses, and multifamily properties. For these properties, the Foreclosure and Transaction Data include both arm's-length and non-arm's-length transactions.[23] We use the available information to remove duplicate transaction records and exclude a small number of observations with missing transaction dates.[24]

The rules below define the basic data filters and data cleaning steps. Several analyses apply further data filters as defined in the relevant chapter:

[23] The vendor categorizes transactions into multiple transaction types using a proprietary coding formula. The analysis data are limited to arm's-length transactions, non-arm's-length purchase transactions, and non-arm's-length nonpurchase transactions. It excludes other nonpurchase transactions, timeshare, assignment, release of mortgage/deed of trust, and homeowners' association transactions. Although the vendor's formula may not perfectly categorize transactions, it provides the most reliable source of information for identifying arm's-length transactions.

[24] The *transaction date* is defined as the sale date (or the recording date, when no sale date is observed). We avoid duplicate transactions by removing any transaction that identically matches another observation that has the same county, Assessor's Parcel Number, transaction date, and document type.

- *Property Types.* We limit the dataset to residential properties in the following categories: single-family residences, condominium units, townhouses/rowhouses, duplexes, triplexes, quadplexes, and multifamily properties. Properties are included if they are in any of these categories at any point after 2000 (for example, a vacant lot on which a duplex was built in 2006 is included).
- *Transaction Types.* We limit the set of transaction records to the following: arm's-length transactions, non-arm's-length transactions, non-arm's-length nonpurchase transactions, and notice of default/foreclosure transactions. This filter excludes the following property types: nonpurchase, timeshare, assignment, release of mortgage/deed, and homeowners' association records. Several analyses further limit the set of transactions to only include arm's-length transactions.
- *Duplicate Records.* We exclude any transaction record that identically matches another record with the same county, Assessor's Parcel Number, transaction date, and document type.
- *Transaction Date.* The date for each transaction is defined as the sale date if a sale date is observed and the recording date for records without a sale date. A small number of records without a recording date are excluded from the analysis dataset.

Creation of Foreclosure-Stage Measures

The information from the Foreclosures and Transaction Data is used to construct measures that define the presence of foreclosure actions and properties' progression through the stages of the foreclosure process: foreclosure filing, foreclosure sale, REO entry, and REO exit. These measures are defined below, followed by a description of the data processes used to create the corresponding variable. The foreclosure measures are constructed from the analysis dataset after the basic filters and data-cleaning steps are applied.

Although the vendor data provide large samples of property transactions and foreclosures in each county, analysis of this data is subject to several strengths and limitations. The measure of foreclosure sales relies on county assessor records for property transactions and therefore should be relatively comprehensive of all foreclosures in each county. The exception is that some foreclosures may be missing, to the extent that the county assessor records do not capture all foreclosure sales. The vendor's attention to foreclosures and precision in documenting foreclosure sales may also have increased in response to the foreclosure crisis. The analysis therefore focuses on foreclosures that occur in 2007 and later years.

A *foreclosure filing* is defined as any preforeclosure notice that is recorded under each county's foreclosure process. Counties that have judicial foreclosure processes typically record the lis pendens notice. Counties with nonjudicial foreclosure processes typically issue a notice of default or notice of foreclosure sale. The timing and recording procedures for foreclosure filings vary widely across counties, and multiple preforeclosure notices may be issued prior to a foreclosure. The foreclosure filings measure identifies any preforeclosure notice that is recorded by the vendor data. Operationally, we coded a property as having a foreclosure filing as follows:

- A foreclosure filing is created for any observed lis pendens or notice of default/foreclosure. Duplicates are removed by deleting any foreclosure filing where a previous filing exists for the same property on the same date. Because default occurs following a 90-day delinquency, we further remove any foreclosure filing that occurs within 90 days of a prior foreclosure filing.

The information on foreclosure filings was not collected systematically across counties by the vendor, and therefore the data are subject to gaps. The data vendor began collecting preforeclosure information in

each of the 19 counties between 2000 and 2006. As a result, these data are subject both to gaps in the availability of data from public records and to concerns about data quality as the vendor established procedures for collecting and standardizing this information. Consequently, the observed foreclosure filing information is likely to be reliable, but the overall coverage of foreclosure filings varies across counties.

A *foreclosure sale* is defined as the transaction in which the ownership of the property is transferred from the foreclosed property owner to the foreclosing party. The Foreclosures and Transaction Data include a separate transaction record to document the transfer of property ownership through each foreclosure sale. Operationally, we coded a transaction as a foreclosure sale as follows:

- The foreclosure sales measure identifies any property where the deed type provided in the data indicates a foreclosure sale. We also recode a small number of transactions where the deed type code is missing but the document type is one of the following: certificate of title (Florida), commissioner's deed (foreclosure), selling officer's deed (Illinois), trustee's deed (foreclosure), deed in lieu of foreclosure, foreclosure deed, and mortgage foreclosure deed. Nearly all of these document types have the foreclosure sale deed type code, so the recode affects a small number of properties. We drop a handful of records that contain foreclosure sales that occur within 180 days of a previous foreclosure sale. The time involved in completing the steps associated with 90-day delinquency, the preforeclosure notice, and completing a foreclosure sale is likely to exceed 180 days, so this step is taken to exclude duplicate records.

The *REO period* is defined as the period of ownership by the foreclosing party between the foreclosure sale (REO entry) and transfer to a new homeowner or investor owner (REO exit). Properties that have less than 30 days between the foreclosure sale and the transfer to a new owner are coded to not enter REO to allow for small discrepancies between the date of the property transfer and the recording date of the transaction record. For properties that enter REO, the *REO exit* is defined as the date that the property is transferred to a new homeowner or investor owner, ignoring transfers of ownership between mortgage investors (for example, from the lender to Fannie Mae).

The measures of REO entry and REO exit similarly rely on the information in property transaction records and should therefore be relatively comprehensive of all properties that experienced REO. The primary limitation of these measures is that the timing of REO entry and exit is subject to our ability to differentiate among transactions that transfer the property between financial institutions and the eventual resale to a new homeowner or investor buyer. The rules used to document REO exit draw on both the vendor's proprietary rules for identifying REO exit and the study team's extensive review of transaction records. As a result, the timing of REO exit may be imprecise to the extent that the vendor data are missing transaction records and the coding rules do not perfectly differentiate REO exits from transactions that reflect transfers of the property between financial institutions.

REO entries and exits are only coded for properties that have a foreclosure sale. The exception is that we also code REO periods for properties that have an observed foreclosure sale between 2000 and 2007, with a subsequent REO exit between January 1, 2007, and February 28, 2013. These properties are included to capture properties that begin the period in REO. Operationally, we defined REO entry and exit as follows:

- The vendor data include a deed category code on transaction records that reflects REO exits based on the vendor's proprietary formula. We adjust this measure in two ways. First, we recode the measure for properties where the flagged REO exit transfers the property to a government-sponsored

enterprise or other federal agency (for example, the owner name is Fannie Mae or HUD). These properties are recoded to remain in REO until a subsequent REO exit transaction or the end of the analysis period. Second, we supplement the vendor measure by coding additional REO exits among properties that do not have a vendor-coded REO exit. For these properties, we code an REO exit to occur on any (1) arm's-length sale or (2) non-arm's-length sale, with an observed sale price that appears after the foreclosure sale. The measure of REO entry identifies any foreclosure sale where at least 30 days elapse between the foreclosure sale and an REO exit. The REO exit measure identifies the REO exit transaction for foreclosure sales where the property enters REO.

After coding these foreclosure-stage variables, a small number of properties with outlier values that raise questions about the accuracy of the data for that property are excluded from the analysis data:

- Properties that have more than 10 foreclosure filings or 5 foreclosure sales between January 1, 2007, and February 28, 2013.
- Properties in judicial process states that have less than 180 days between their earliest foreclosure filing and a foreclosure sale and properties in nonjudicial process states that have less than 30 days between their earliest foreclosure filing and a foreclosure sale. These durations are less than the time necessary to complete each process and are therefore likely to indicate that one or both dates are incorrect.

Exhibit 3–5 shows the total number of foreclosure filings and sales in each county. The exhibit shows two measures that provide insight into the relative completeness of the observed information on foreclosure filings and sales. First, the ratio of foreclosures sales to the total number of properties in the Foreclosures and Transaction Data provides insight into whether the observed foreclosure sales are unexpectedly low in any counties. The results raise concerns about the completeness of the foreclosure sale information in Kings County and Philadelphia County. Because these counties are densely populated urban areas, the low foreclosure rates may be the result of differences in the structure types, demographics, or other attributes of these counties. Nonetheless, they also raise concerns about lower data coverage in these counties.

Exhibit 3–5: Property Transactions, Foreclosure Filings, and Foreclosure Sales by County

County	Total # of Transactions	Total # of Properties	Average # Transactions per Observed Property	Total # of Foreclosure Filings	Total # of Foreclosure Sales	Properties With Foreclosure Sale	Foreclosure Sales With Prior Filing
Boom-Bust Sand State market							
Los Angeles	4,811,479	1,422,936	3.4	666,021	146,276	10.4%	94.9%
Maricopa	3,494,910	1,019,271	3.4	378,613	225,505	22.6%	94.4%
Miami-Dade	1,590,354	530,746	3.0	224,286	62,590	11.7%	89.1%
Palm Beach	1,059,374	419,380	2.5	114,411	37,067	8.8%	89.1%
Riverside	1,925,709	480,594	4.0	373,501	113,806	23.3%	96.4%
Sarasota	374,791	140,652	2.7	30,589	10,747	7.6%	86.3%
Stanislaus	396,947	101,200	3.9	81,282	28,255	27.4%	98.0%
Washoe	365,705	106,737	3.4	54,263	14,713	13.7%	96.0%
Boom-Bust East Coast market							
Cook	1,809,562	847,179	2.1	214,616	73,865	8.7%	73.4%
Washington, D.C.	220,304	110,652	2.0	23,217	5,489	4.9%	92.7%
Kings	270,593	147,603	1.8	27,815	1,227	0.8%	35.4%
Boom-Stable market							
Philadelphia	463,441	282,016	1.6	11,337	24,321	8.6%	9.4%
Ramsey	143,423	72,445	2.0	14,602	10,615	14.6%	74.6%
Slow Growth market							
Davidson	289,292	126,904	2.3	13,030	8,221	6.4%	58.4%
Denver	392,863	135,362	2.9	42,174	16621	12.0%	90.2%
Lagging/Declining market							
Cuyahoga	574,741	264,872	2.2	53,385	34,977	12.9%	47.7%
Ingham	102,582	47,353	2.2	6,412	5,571	11.6%	54.3%
Pulaski	156,723	74,466	2.1	12,817	4,641	6.2%	79.2%
Wayne	979,933	369,336	2.7	124,097	73,824	19.8%	89.3%

Source: Foreclosure and transaction data, 2000–2013, quarter 1.

Second, the percentage of foreclosure sales with a previous filing provides insight into the completeness of the data on foreclosure filings. These figures suggest that the data coverage is approximately 90 percent or higher in each of the BBSS counties. By contrast, the coverage appears to be lower than 80 percent in six of the eight counties in other regions. In particular, the coverage rates for Davidson, Cuyahoga, and Ingham Counties all raise concerns about gaps in the data on foreclosure filings.

Creation of Housing Tenure Measure

The vendor transaction records also provide the information used to create the measure of tenure status used throughout the report. The *measure of tenure status* is defined as an indicator of whether a property is owned by an investor rather than a homeowner.

Investor ownership is identified by using the buyer name on recorded property transactions to determine the property's tenure status during the periods between transaction records. A property is coded to be investor owned if the buyer meets any of the following criteria:

- The buyer name suggests that the owner name is a corporate entity (for example, the name includes LLC, Inc., or similar terms).
- The buyer's mailing address is different from the property address, suggesting that the owner may be a rental landlord or absentee owner.

- The owner purchased four or more properties between January 2007 and February 2013.
- The owner purchased two or more properties in REO exit transactions between January 2007 and February 2013.
- The owner purchased a property in an REO exit transaction and resold the property within 12 months.

This definition is consistent with the measures used in other studies that use county assessor data to examine investor purchases during the foreclosure crisis (Ellen, Madar, and Weselcouch, 2013; Fisher and Lambie-Hanson, 2012; Immergluck, 2013b). Nonetheless, the tenure measure has several limitations relevant to analyses. First, the measure may understate investor ownership to the extent that individual investors are not identified by the criteria listed above. For example, a tenure change resulting from a homeowner moving and deciding to rent his or her property may not be identified by the criteria listed above. Conversely, the measure may overstate investor ownership if homeowners who have common names are coded as investors under the third and fourth criteria or if homeowners who use post office boxes are coded as investors under the second criterion.

A final consideration for our analysis of NSP2 properties is that the definition of *investor ownership* does not differentiate between properties that have an occupant and properties that have been vacant or abandoned. As a result, the measure may overstate investor ownership to the extent that abandoned properties are coded as having absentee owners under the second criterion. The measure is only able to capture a property's tenure status at the time of the most recent transaction record, however, so properties owned by homeowners who subsequently abandoned the property will continue to be coded as homeowners until a subsequent transaction is recorded. Consequently, the accuracy of the tenure status measure may be limited for abandoned or blighted properties targeted for NSP2 activities.

Producing County-Level Analysis Files

The NSP2 property-level data from grantees were merged with Foreclosure and Transaction Data from a vendor to produce county-level analysis files. Overall, the match rate was good (see Exhibit 3–6), with matches for about 5,000 NSP2 properties (or 79 percent of the 6,300 NSP2 properties). The match rates varied considerably across counties and were highest in Los Angeles (93.2 percent), Riverside (92.6 percent), Stanislaus (94.7 percent), and Washoe (100 percent) Counties and lowest in Ingham (50.2 percent), Kings (47.8 percent), Philadelphia (50.4 percent), and Ramsey (26.8 percent) Counties. Lower rates are expected in counties that never acquired a property to conduct their NSP2 activities (for example, nuisance demolitions) or where the property was acquired before 2000. The lower rates may also be attributable to incomplete data from county assessors.

The match rate does not affect most of the analyses presented in subsequent chapters, however, because the NSP2 property-level data from grantees and the Foreclosures and Transaction Data do not need to be matched for most of the impact analyses. All the properties with NSP2 investment are used in the analysis based on information provided by grantees. The lower match rates affect Chapter 7, "Impacts on Vacancy and Tenure," and Chapter 8, "Impacts on Crime Rates," however; those chapters describe how this issue is handled.

Exhibit 3–6: Match Rate Between NSP2 Properties and Transaction Data

County	State	Total NSP2 Grantee Properties	Matched to Property and Transaction Data From Vendor	Match Rate
Cook	IL	262	219	83.6%
Cuyahoga	OH	758	648	85.5%
Davidson	TN	116	98	84.5%
Denver	CO	119	104	87.4%
District of Columbia	DC	66	54	81.8%
Ingham	MI	215	108	50.2%
Kings	NY	46	22	47.8%
Los Angeles	CA	558	520	93.2%
Maricopa	AZ	494	425	86.0%
Miami-Dade	FL	296	170	57.4%
Palm Beach	FL	235	203	86.4%
Philadelphia	PA	492	248	50.4%
Pulaski	AR	236	176	74.6%
Ramsey	MN	149	40	26.8%
Riverside	CA	54	50	92.6%
Sarasota	FL	71	50	70.4%
Stanislaus	CA	94	89	94.7%
Washoe	NV	146	146	100.0%
Wayne	MI	1,947	1,651	84.8%
Total		6,354	5,021	79.0%

NSP2 = Neighborhood Stabilization Program 2.

3.2.3 U.S. Postal Service Vacancy Data

The measures of vacancy status are collected from U.S. Postal Service (USPS) data about properties' occupancy status. The study collected tract-level vacancy counts for each quarter during the analysis period. The study also collected property-level information about the vacancy status of all properties in the vendor transaction data in March 2013—shortly after the end of the NSP2 period. The implications of the availability of property-level data at only one point in time are discussed in more detail in Chapter 7.

Both the census tract- and property-level measures of vacancy depend on the USPS measures of vacancy. USPS data define a property as "Vacant" if mail for the property has not been collected for at least 90 days. USPS also identifies "No-Stat" properties, which are properties that are not collecting mail and are not active for mail delivery (for example, the property is a vacant lot or is abandoned and not likely to be occupied in the near term). The measure of vacancy considers a property to be vacant if it is flagged under either of these definitions:

- A property is considered *vacant* if it is coded as either Vacant or No-Stat in USPS data.

This measure focuses on longer term vacancies, capturing spells that last at least 90 days. The measure is not able to capture vacancies that last less than 90 days, which may be the case for foreclosed properties that are purchased quickly after the foreclosure occurs. The property-level measure is also limited by the lack of historical data on properties' vacancy status. Ideally, the analysis data might identify the start and end dates of vacancy spells throughout the analysis period. Instead, property-level information is available only for one point in time at the end of the analysis period. Indeed, the information is produced by postal workers for administrative purposes and is not meant to be a definitive indicator of vacancy.

The USPS Vacancy Data are used both for the descriptive analysis of NSP2 vacancy and tenure status and for the census tract-level impact estimates of NSP2 on the vacancy rate in a census tract.

3.2.4 Visual Tracking Data on External Property Conditions

The study analyzes the relationship between foreclosures and blight in two of the study counties. The information on the external conditions of the property is from the Visual Tracking Survey. The survey was designed to document the exterior conditions of a sample of properties in those counties. Trained observers were dispatched three times during an approximately 12-month period (March 2012 through May 2013) to the selected blockfaces to record their visual impressions of each property's exterior condition.

Observers were asked to record items along the following dimensions:

- Signs of foreclosure, such as a notice of foreclosure, notice of short sale, or notice of sale.
- Signs of occupancy, such as vehicles in the driveway, pets inside, or well-maintained landscaping.
- Damaged points of entry—the number of damaged windows, entry and side doors, locks, and garage doors.
- Signs of damage—the presence of no, some, or severe damage on roof, rain gutters, paint, exterior walls, foundation, railings, fences, and gates.
- Signs of disrepair, such as damaged shutters, cracked entry steps, or damaged exterior lighting.
- Signs of blight, such as litter or garbage in the yard, graffiti, or poor landscaping.
- Signs of investment, such as workers, construction materials, or service vans.

3.2.5 Indepth Interview With Program Operators

The implementation analysis is based on qualitative interviews with key stakeholders in the 19 counties in the study. Two site visits were conducted during the study period. The baseline site visit occurred in summer 2012, more than a year after the NSP2 grants had been awarded. The followup visit occurred 1 year later, during summer of 2013. Interviews were conducted with staff from the lead grantee; key partner organizations or subgrantees; and nonlead consortium members who played an important role in designing, implementing, or monitoring the program. Respondents included executive directors, NSP2 managers, property managers, data mangers, representatives from national intermediaries (that is, Chicanos Por La Causa, Community Builders, Habitat for Humanity, and Self Help), and staff from local public housing authorities.

The baseline site visits used interview protocols to covered a broad range of topics: the program's overall strategy; grantees' rationales for targeting census tracts for NSP2 assistance; the integration of NSP2 activities with other community-development efforts; the use of other funding sources to support NSP2 activities; the specific roles of consortium members or partner organizations as well as their experience and capacity to undertake these roles; the lessons learned from NSP1 and how these lessons informed plans, staff, and training for NSP2; and grantee and partner organizations' expectations regarding program outcomes and neighborhood impacts.

The followup site visits were designed to explore how program implementation occurred in practice, document changes in the plan since the initial site visit, gather views on what program outcomes and impacts have occurred, and investigate factors that facilitated or hindered the achievement of each grantee's program goals. These followup interviews were conducted with interviewees similar to those at

baseline, using modified interview protocols. Both the baseline and followup interview protocols are presented in Appendix A–2.

In addition to the implementation analysis, the information for indepth interviews is used to provide context for the findings in other analysis.

3.2.6 Secondary Data Sources

This study also used a variety of publicly available secondary data sources. For selecting the sample, these sources were used: price appreciation scores from Federal Housing Finance Agency Downloadable Housing Price Index (www.fhfa.gov/Default.aspx?Page-87); population figures from the Census Population Program (www.census.gov/popest/archives/2000s/vintage_2006); and unemployment rates from the Bureau of Labor Statistics Local Area Unemployment Statistics Data (www.bls.gov/lau).

Crime data from Chicago, Cleveland, and Denver were used to estimate the impact of foreclosures and NSP2 investment on crime. These data were provided separately for violent and property crimes and included the location of the crime.

Home Mortgage Disclosure Act (HMDA) data on the number and types of mortgages issued by census tract were used in the descriptive analysis of sales volume and high-cost loans.

American Community Survey data on the characteristics of the population from the pre-NSP2 baseline period (2005 to 2009) were used as control variables for the census tract-level analysis of the impact of NSP2 investments on housing outcomes and for the property-level impact analysis of NSP2 on crime.

4. Implementation Analysis

This chapter presents the results from the implementation analysis. The primary objective of the implementation analysis is to understand how grantees implemented Neighborhood Stabilization Program 2 based on two rounds of site visits with grantees and interviews with key stakeholders.[25] NSP2 provides grantees with considerable flexibility to select and implement program activities. The full slate of eligible NSP2 activities is not appropriate for all neighborhoods; thus, the implementation analysis seeks to understand why grantees selected and pursued specific activities. It also provides context for the impact analysis' evaluation of factors influencing grantees' success in achieving the outcomes presented in the next chapter. In answering the broad question of how grantees implemented NSP2, this analysis focuses on these aspects of implementation:

- How did grantees design their NSP2 programs? What factors influenced the tracts selected and the activities used? How did these change over time, and what were the reasons for changes?
- What approaches did grantees take to implementing specific NSP2 activities?
- Did grantees intend to geographically concentrate activities? If so, to what extent did they succeed?
- Are other funds being successfully leveraged by NSP2 funds? How was program income used to achieve NSP2 objectives?
- What challenges did grantees encounter in implementing NSP2? What factors aided their efforts? Specifically, how did preexisting staff capacity, training, technical assistance, use of innovative technology, and partnerships (with other government, nonprofit, and for-profit organizations) contribute to the likelihood of achieving intended outcomes?
- What lessons did grantees take away from their NSP2 implementation efforts? How do they suggest that this might inform future neighborhood stabilization programs? What are their perceptions of the local impact of NSP2?

Although there were 28 lead grantees in the sample counties, for the purposes of the implementation analysis the study team treats these as 34 grantees. The 2 lead national grantees—Chicanos por la Causa, Inc., and Habitat for Humanity—shown throughout Exhibit 4–1, partnered with subrecipients, who worked with a great deal of latitude in designing implementation strategies for the neighborhoods in which they worked. The lead national grantees provided these subrecipients with administrative support, but in most other regards these local subrecipients of national grantees were independently administering NSP2 grants. The Michigan state grantee, the Michigan State Housing Department Authority, also worked with subrecipients who implemented distinct NSP2 offerings in two separate counties (Ingham and Wayne), so these are also treated as 2 grantees.

[25] Appendix A–2 provides the interview instruments used during the site visits.

Exhibit 4–1: Counties and Grantees Included in Each Market Type

Market Type	County		Grantee
Boom-Bust Sand State	Los Angeles County, CA	1	Chicanos Por La Causa, Inc. (New Economics for Women)
		2	City of Long Beach, California
		3	City of Los Angeles
		4	Habitat for Humanity International, Inc.
		5	Los Angeles Neighborhood Housing Services, Inc.
	Maricopa County, AZ	6	Chicanos Por La Causa, Inc.
		7	City of Phoenix
	Miami-Dade County, FL	8	Habitat for Humanity International, Inc.
		9	Neighborhood Housing Services of South Florida
	Palm Beach County, FL	10	Lake Worth Community Redevelopment Agency
		11	Palm Beach County
	Riverside County, CA	12	City of Indio
	Sarasota County, FL	13	City of Sarasota
	Stanislaus County, CA	14	City of Modesto
	Washoe County, NV	15	Housing Authority of the City of Reno
Boom-Bust East Coast	Cook County, IL	16	Chicanos Por La Causa, Inc. (The Resurrection Project)
		17	City of Chicago
		18	City of Evanston
	District of Columbia	19	Chicanos Por La Causa, Inc. (MiCasa)
		20	Washington, D.C., Department of Housing and Community Development
		21	National Housing Trust Community Development Fund
	Kings County, NY	22	City of New York Department of Housing Preservation
		23	Habitat for Humanity International, Inc.
Boom-Stable	Philadelphia County, PA	24	Chicanos Por La Causa, Inc. (Norris Square Civic Association)
		25	City of Philadelphia
	Ramsey County, MN	26	City of Saint Paul
Slow Growth	Davidson County, TN	27	Metropolitan Development and Housing Agency
	Denver County, CO	28	Chicanos Por La Causa, Inc. (Del Norte)
		29	Denver Office of Economic Development
Lagging/ Declining	Cuyahoga County, OH	30	Cuyahoga County Land Reutilization Corporation
	Ingham County, MI	31	Michigan State Housing Department Authority
	Pulaski County, AR	32	City of Little Rock
		33	City of North Little Rock
	Wayne County, MI	34	Michigan State Housing Department Authority

Recall that this analysis is based on semistructured interviews with NSP2 staff members. Grantees were asked the same basic set of questions, though tailored for their specific set of activities. Respondents also had the opportunity to volunteer information. It is possible that the same issue mentioned by 1 grantee was also relevant for another who did not mention it in the interviews. Frequencies we report in this chapter should therefore be understood as a minimum estimate (see Section 3.2 for more detail).

The first section of this chapter reviews the environment in which grantees worked in implementing NSP2. The second section examines how these market contexts influenced the design of grantees' programs. The third section of the chapter discusses the strategies grantees used to address their local housing market problems. More specifically, the section provides detailed descriptions of how the grantees implemented each of the five eligible NSP2 activities, including any intentions the grantee had to

concentrate its activities. The third section also highlights common obstacles the grantees encountered when conducting each activity, the strategies grantees used to respond to these challenges, and the implications of these responses for grantees' outcomes and program beneficiaries. The fourth section describes grantees' ability to leverage other funds and program income.

The fifth section presents grantees' perceptions of their achievements, both in treating distressed properties and in achieving other program outcomes such as job creation and building community support.

The sixth section of the chapter provides an overview of the challenges grantees commonly faced in implementing NSP2. More specifically, the section reviews the activity-related challenges that were discussed throughout the previous sections as well as additional programmatic challenges. The next section presents key factors that facilitated program implementation. These factors include grantees' NSP1 experience, training and technical assistance, use of innovative technology, and partnerships.

The eighth section reviews grantees' reflections on the scale of the program relative to the problems it sought to address. It also presents grantees' suggestions for future neighborhood revitalization programs. The last section summarizes key findings.

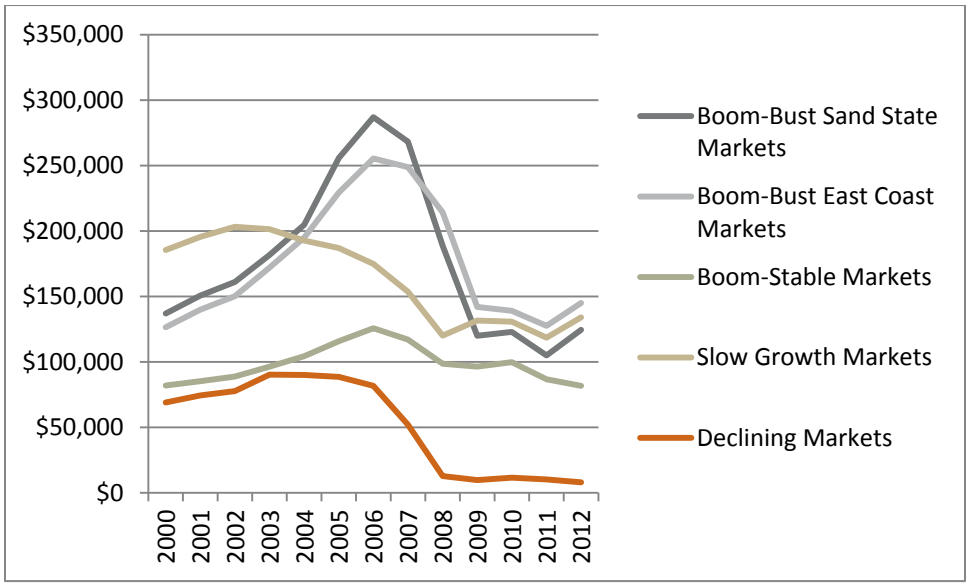
4.1 Market Context: Environment for Designing NSP2 Strategy

In designing their NSP2 strategy, virtually all grantees were addressing declining house prices and rising rates of foreclosure in their target areas. Private real estate markets were marked by declining home sales, and investors came to represent the majority of sales in all of these counties for a period of time. Aside from these broad trends, grantees faced quite different circumstances in each of their local housing markets, from longstanding population decline and need for revitalization to recently stable neighborhoods threatening to tip toward decline as a consequence of the foreclosure crisis.

As shown in Exhibit 4–2, prices peaked in the treated tracts in Slow-Growth and Lagging/Declining markets, which had previously seen only modest price increases in 2002 and 2003. The remaining markets saw house price peaks in 2006, and NSP2 was designed and implemented in the aftermath of the sharpest declines most markets had seen in decades. Peak-to-trough house prices declines were nearly unprecedented, ranging from 35 percent in SG markets to a 91 percent decline in L/D markets.

At the same time, the volume of home sales was also peaking and then declining sharply (Exhibit 4–3). Peak to trough, sales fell by more than one-half in all markets. In most markets, grantees were implementing NSP2 in an environment with little sales activity, so little that, as discussed below, in some places grantees felt that NSP2 sales helped restart the market by creating comparable sales. By 2012, sales activity had started to pick up again in all markets. Some grantees noticed this difference, finding it harder to acquire property later in the grant period because of increased competition.

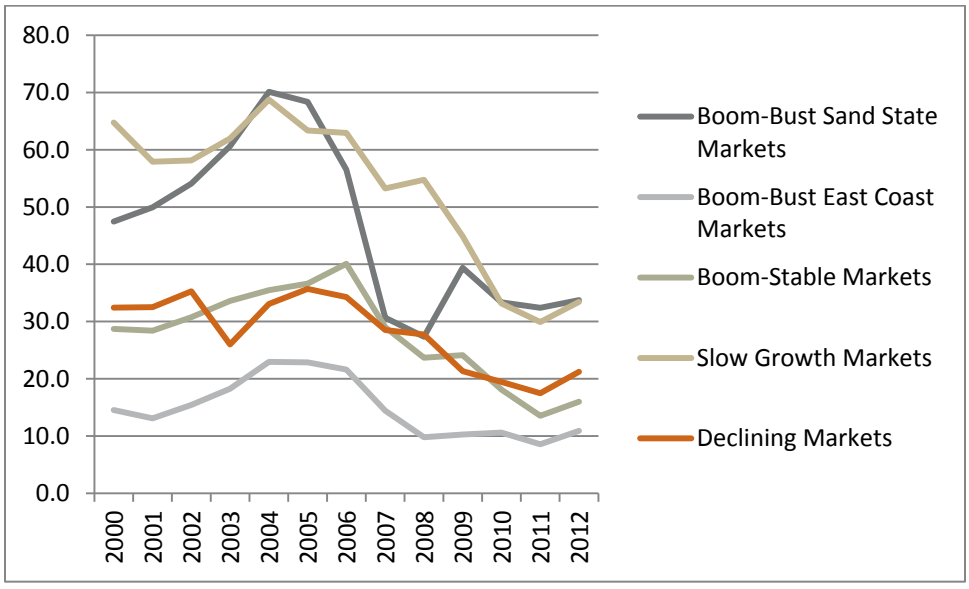
Exhibit 4–2: Median Sale Price in NSP2 Tracts by Market Type and Sale Year



NSP2 = Neighborhood Stabilization Program 2.

Source: Tabulations of vendor data. Non-arm's-length transactions were excluded, as were condominium sales over $1 million. Sales prices were adjusted by the number of units in the property (for duplexes and triplexes) and inflation using the Consumer Price Index. Outlying sales price transactions (top and bottom 1 percent) were also dropped, as were transactions occurring less than 3 months after a previous transaction.

Exhibit 4–3: Housing Sales Volume in NSP2 Tracts by Market Type and Sale Year



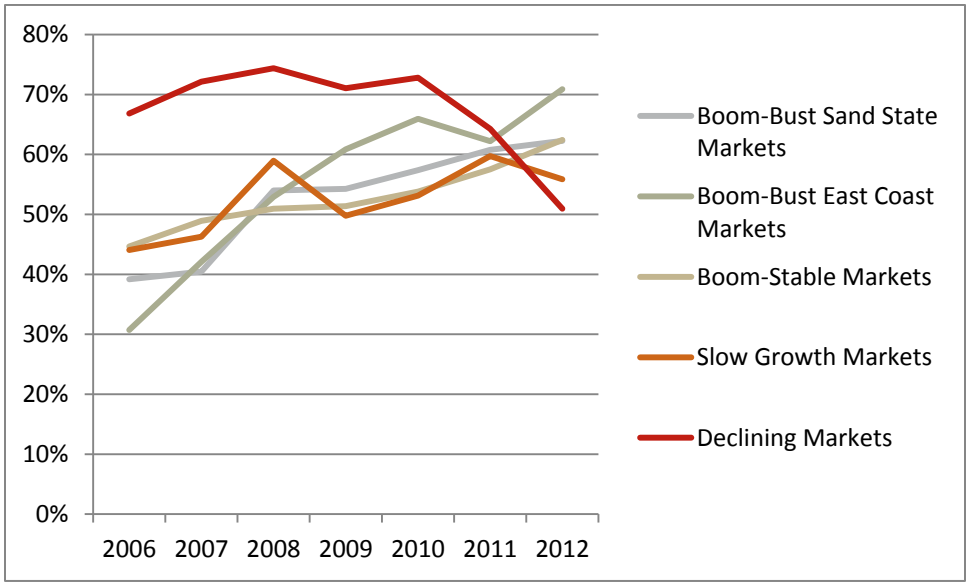
NSP2 = Neighborhood Stabilization Program 2.

Source: Tabulations of vendor data. Sales volume is per 1,000 housing units in the NSP2 tracts.

Even before the foreclosure crisis, NSP2 tracts appear to have been primarily rental and not homeownership neighborhoods, with investors accounting for a significant share of single-family home purchases (Exhibit 4–4). Investor activity in NSP2 tracts increased over the course of the foreclosure crisis in all market types except L/D, where the share of investor purchases began to drop in 2011.[26] Nevertheless, investors made the bulk of purchases in the NSP2 tracts in L/D markets over the entire period, ranging from more than two-thirds (67 percent) of single-family home sales in 2006 and eventually dropping to just over one-half (51 percent) in 2012. Investors may have been particularly attracted to L/D markets because extremely low property values in those areas opened the way for investors to acquire significant numbers of properties. At the same time property values declined and investor activity increased, population continued to decline in these markets, further contributing to the deterioration of housing prices.

By 2008, investors dominated what sales activity there was in the tracts treated by NSP2 in all market types. In 2006, investors were least active in the NSP2 tracts in Boom-Bust East Coast markets, accounting for about 3 in 10 homes (31 percent) in 2006. These markets experienced the largest growth in investor purchases—almost 71 percent in 2012. Likewise, investor purchases climbed as prices declined in NSP2 tracts in other markets. Investor purchases in NSP2 tracts in Boom-Bust Sand State and Boom-Stable markets eventually reached about 62 percent of all purchases. In comparison, investors' share of existing home purchases nationwide reached a peak of 27 percent in 2011.

Exhibit 4–4: Investor Share of Single-Family Home Purchases in NSP2 Tracts

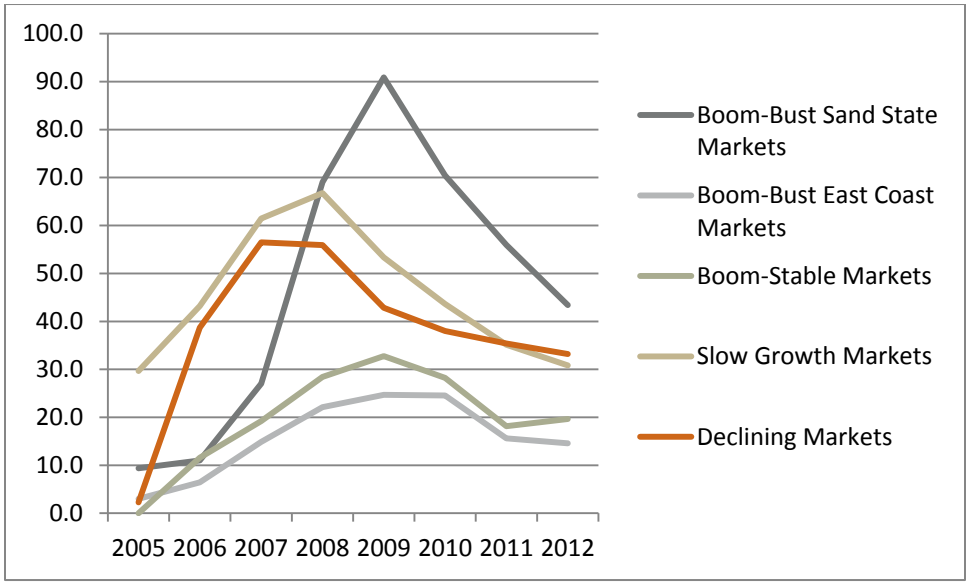


NSP2 = Neighborhood Stabilization Program 2.
Source: Tabulations of vendor data.

[26] For the purposes of this report, we define *investors* as nonoccupant property owners. Although this definition necessarily includes all owners of multifamily properties, in this context it is more commonly used to indicate purchases of single-family homes that owners rent to tenants.

NSP2 grantees designed and began implementing their programs in 2009, which was also the height of housing market distress in many markets, as shown in Exhibit 4–5. Even in the strongest market type, BBEC, about 25 properties per 1,000 in NSP2 tracts (2.5 percent) were in some state of mortgage distress—that is, had at least one default, foreclosure sale, or REO entry or sale during the year. In the BBSSs, though, 91 properties per 1,000—9 percent—were in distress. As NSP2 wound down, the number of distressed properties had decreased across the board. The average number of distressed properties in NSP2 tracts in 2012 was 36 per 1,000, returning near a level not seen since 2007 (34 properties per 1,000). As discussed further below, in some sites, grantees attributed that improvement to their NSP work; others credited it to a secular trend of the private housing market rebounding on its own.

Exhibit 4–5: Distressed Properties per 1,000 Housing Units



Source: *Properties in distress* are those with at least one default, foreclosure sale, or REO (Real Estate Owned) entry or sale in the year, tabulated from vendor data. *Total number of housing units* is from either the American Community Survey (2005–2009) or decennial census for years 2010–2012.

As described in the remainder of the chapter, NSP2 grantees responded to this economic environment as well as other factors in designing and implementing their NSP2 programs.

4.2 NSP2 Program Design and Target Areas

The primary purpose of NSP2, like other rounds of NSP funding, was to stabilize neighborhoods whose "viability has been and continues to be damaged by the economic effects of properties that have been foreclosed upon and abandoned."[27] Programmatically, NSP2 built on the Community Development Block Grant (CDBG) program and thus also had to meet CDBG goals to create decent, affordable housing. Although CDBG limits participation to low- and moderate-income households (up to 50 percent and 80 percent of area median income [AMI], respectively), NSP2 expanded eligibility to middle-income

[27] Notice of Funding Availability, p. 2.

households earning between 80 percent and 120 percent of AMI. The goals of NSP2 included both immediate stabilization and work that would preserve affordable housing in vibrant neighborhoods over the long term.

The U.S. Department of Housing and Urban Development designed NSP2 to be highly a decentralized program, allowing local grantees discretion to choose target neighborhoods and tailor their implementation strategies to fit local market conditions. It was not, as a grantee noted, "a prepackaged product from Washington." This gave grantees the autonomy and flexibility to design programs that may have more of an effect than a uniform program operated in different markets. The variation in these locally specific programs, though, poses some difficulty for the purposes of comparison and evaluation. The 34 grantees in our sample all operated under the umbrella of NSP2, but as at least 34 unique programs—the true number may be higher to the degree some subrecipients operated differently. These myriad program designs, implementation experiences, and varied market conditions make it difficult to directly compare one NSP2 program with another using a single standard. Further, grantees were charged with purchasing foreclosures and abandoned properties as quickly as possible in the worst housing market conditions in decades, working with lenders that were unsure, unable, or unwilling to dispose of properties in their portfolios, and in some cases with public entities that had suffered major blows to staff capacity or operating budgets during the recession. In the remainder of this chapter, we discuss these issues from the perspectives of our 34 sample grantees.

4.2.1 Tract Selection

As described in Chapter 1, NSP2 required applicants to identify eligible target areas where program activities could stabilize neighborhoods that were highly distressed by the housing and economic crisis of 2007 to 2009. Target areas could either have been stable up until the foreclosure crisis or could have had existing needs that were made worse during the recession. Grantees were to target their activities to census tracts that had foreclosure and vacancy scores of an average of at least 18 out of 20, where 20 is the highest level of distress defined by HUD. Within eligible areas, grantees were able to selectively target tracts, neighborhoods, or properties they deemed to have the greatest potential impact on the neighborhood rather than evenly distributing work across an area.

Grantees used multiple factors, including HUD criteria and local market assessments, to select the diverse range of neighborhoods initially targeted for NSP2 work. Factors included the total number of eligible tracts in the jurisdiction weighed against the size of the grant they were requesting, federal and practical mandates to coordinate their efforts with other programs, measures beyond the HUD risk score, the local political climate, and their local knowledge of conditions in potential neighborhoods. Neighborhood considerations included signs of vitality, such as neighborhood pride and community organizations, and grantees' familiarity with a neighborhood that would help them with practical matters of getting the work done. The selection process was influenced by all of these factors, but for subsets of grantees, multiple other considerations were also taken into account. Some of these other considerations are discussed below.

Grantees coordinated NSP2 with other community development activities. Aside from selecting tracts that qualified for NSP2 assistance, a prevailing consideration for most grantees (32 out of 34) was to coordinate their NSP2 investments with other community development activities, from other rounds of NSP funding, other federal programs, local initiatives, or where the grantee had other active projects. In part, this emphasis on coordinating resources responded to HUD's requirement specified in the Notice of Funding Availability (NOFA). In addition, some grantees wanted NSP2 to support a local master plan,

transportation improvements, or local community development programs. Some grantees wanted to continue working in areas where they had worked to stabilize neighborhoods now threatened by the foreclosure crisis. A grantee in Los Angeles County, California, framed NSP2 as "shoring up" prior investments in revitalizing a community.

Some grantees used measures of decline and distress in addition to those that HUD required. One-fourth of grantees (9 of 34) used targeting metrics beyond the HUD foreclosure and vacancy risk score, such as contracted local market studies and Geographic Information Systems (GISs), including PolicyMap. A Washoe County grantee established a partnership with local researchers who obtained, scrubbed, and mapped real estate data from several sources, and used their experience with parcel-level microanalysis to rigorously geocode housing distress. Using this to identify the neighborhoods with that had the highest concentration of housing distress, they then backed out their associated census tracts, constructing the tract list ultimately used for the application.

The political landscape sometimes played some role in defining the target area. This was true for 9 grantees. For example, 1 grantee needed to build a coalition of support among city council members that who represented different wards within the city. The grantee reported that it originally wanted to have a smaller target area to better concentrate its NSP2 efforts, but it felt pressure to widen its scope to an additional 18 census tracts to garner city council members' support. Interestingly, the competitive application process for NSP2 was helpful for 2 grantees in resisting political pressure to widen their target areas. Of these 2 grantees, 1 told us that it was able to resist political pressure by explaining that a diffuse, politically motivated target area would weaken the application and thus chances of winning an award.

Many grantees targeted areas with existing needs prior to the foreclosure crisis. More than one-third of grantees (13) worked in areas with longstanding abandonment or that were targeted for redevelopment before the housing crisis. This tendency to work in redevelopment areas may, again, have been a response to the instruction to coordinate NSP2 with other community development funds. These neighborhoods included areas with older housing stock, significant substandard housing, crime, and deterioration that, as one grantee put it, "predate 2008" but were made worse by the housing crisis and recession.

One-fourth of all grantees (9) purposefully chose to work in the most troubled areas in their cities, marked by the worst housing stock and most serious problems, including violent crime, little to no presence of neighborhood organizations or private development, and generally (but not always) low levels of neighbor involvement. An L/D market grantee, for example, felt that some causes of the neighborhood's problems were that a few "slumlords" had bought up so many properties that dilapidated rentals outnumber owner-occupied homes two to one. The grantee believed that increasing the community's homeownership rate would reduce transiency and create "momentum for positive change."

Just as many grantees targeted neighborhoods with some underlying strength. More than one-third of grantees (13) avoided the most troubled areas in their cities, looking instead for features like anchor institutions or proximity to healthy neighborhoods. In some cases, grantees said this strategy was used to select target areas because these were places where an NSP2 investment could catalyze the additional private investment, both residential and commercial, that would be needed to stabilize the neighborhood. Grantees used indicators of neighborhood strength, including anchor institutions such as hospitals, colleges, other employment centers, and major entertainment and tourist attractions; proximity to the downtown; and access to transportation. Other signs of neighborhood health were also considered, such as partial stability (not being "too far gone") and the presence of strong community organizations such as community development corporations. One case highlights that these were sometimes the same areas: A

Pulaski County grantee targeted an area with longstanding property abandonment but where efforts to revitalize the waterfront were beginning.

A few grantees strategically balanced a mix of neighborhoods.[28] Some grantees did not exclusively work in either the worst neighborhoods or those with underlying strength, but purposefully worked in a mix of neighborhoods, including grantees in both Slow-Growth counties where there was more private market activity occurring alongside NSP2. Specifically, 1 grantee in Denver County targeted both newer and older neighborhoods in order to balance costs: Homes in newer neighborhoods needed less rehabilitation and helped to offset the more intensive rehabilitation work needed for homes in older neighborhoods. In newer neighborhoods, foreclosures were more likely to have been a result of boom-bust dynamics associated with subprime lending. Older neighborhoods had larger populations of lower income residents and homeowners, some of whom struggle to maintain their properties.

Grantees rarely focused exclusively on newer neighborhoods. Few grantees worked in the neighborhoods that came to symbolize the foreclosure crisis in the news media—new developments where houses were sold to people who could not afford them and eventually stood half empty. These neighborhoods were targeted almost exclusively by 2 grantees. Both these grantees were in BBSS markets that had undergone exponential population growth in the early 2000s, fueling a surge of new building, especially of single-family homes. In 2 other cases, grantees would have liked to target these types of neighborhoods but chose not to because of expenses such as homeowners' association fees that reduced the affordability of the housing for low- and middle-income households targeted by NSP2.

Neighborhood conditions targeted varied by market type. Grantees in the five market types reported some consistency in their targeted neighborhoods. Grantees in both types of Boom-Bust markets reported that they chose to work in a variety of submarkets; most often, however, these grantees chose to work in heavily distressed neighborhoods, sometimes focusing their efforts on improving the quality of life for existing residents or protecting housing affordability in gentrifying areas. Although addressing neighborhood crime, including gang activity, was a factor mentioned by one-half of grantees in all market types (17 grantees), it appears to have been a larger focus for grantees in Boom-Bust markets (11 out of 15 BBSS grantees). The most commonly shared goal of Boom-Bust grantees was to protect affordability in gentrifying neighborhoods, perhaps made possible by the leveling off of prices after 2008. SG counties were the only ones where grantees proactively sought to work in a mix of older and newer, working- and middle-class neighborhoods.

Not surprisingly, grantees in L/D markets were most often responding to longstanding issues of abandonment and blight. Grantees in Detroit (Wayne County) and Cleveland (Cuyahoga County) focused heavily on blight elimination, garnering exemptions from HUD's 15.5-percent limit on spending for demolition in NSP because of the severity of blight in their communities. In addition to removing blight, L/D market grantees as a whole were also interested in improving property values, both for neighboring owners and to shore up the city's tax base. Not all neighborhoods were equally troubled, however; in at least 2 cases, grantees were working in areas with high homeownership rates and a sense of neighborhood identity that encouraged homeowners to band together. These effects were related to goals of improving

[28] Here, we refer only to grantees balancing neighborhood types as a program design choice. This does not count those grantees that ended up working in a variety of neighborhoods as a result of opportunistically buying properties wherever they were available. We examine that experience in Section 4.3.

quality of life for existing residents, creating momentum for positive change, and attracting new residents to the neighborhoods.

These consistencies across market types are not meant to obscure the multiple kinds of submarkets and goals that grantees pursued under NSP2. For example, long-term distressed areas in Boom-Bust markets or L/D market neighborhoods that could absorb high-quality rehabilitations or draw new residents into quality construction in keeping with an older neighborhood's character.

Ultimately, the neighborhoods initially targeted for NSP2 were certainly affected by the foreclosure crisis, but the neighborhood conditions were not solely the product of recent mortgage foreclosures. There were important differences by market type both in the types of tracts targeted and in the approaches used to address housing market problems. Some of these differences were driven by differences in local markets, but others had more to do with grantee preferences, such as preferences for working in more heavily distressed neighborhoods and for maintaining affordability in gentrifying neighborhoods rather than focusing more strictly on neighborhoods in decline.

4.2.2 Changes in Tract Selection Over Time

Many grantees changed the tracts they targeted for NSP2 investment considerably over the course of the program. A detailed accounting of how the targeted tracts changed and the implications of these changes is presented in the neighborhood-level impacts discussion (Chapter 8). The reasons for changes to targeted tracts included significant changes in program design, difficulty acquiring properties in the originally targeted tracts, and difficulty attracting buyers to the originally targeted areas. In other cases, tracts were targeted after specific properties had been identified for rehabilitation or redevelopment.

Most grantees (31) said they faced challenges acquiring properties in the originally targeted tracts because of (1) finding fewer foreclosures available than expected; (2) competition with investors; or (3) in one case, finding the area targeted was primarily industrial. Grantees who faced this challenge responded in multiple ways. Of these grantees, 7 expanded their target area to improve opportunities to find properties. For example, 1 L/D market grantee originally expected to use NSP2 funding to create a large mixed-use project in one city. The project was eventually rejected, and the grantee changed its strategy to focus on demolition to reduce blight and eliminate dangerous properties and expanded the target area to fit this new strategy. Conversely, 4 grantees that struggled to find properties in the original target tracts began identifying particular properties to target, adding the tract to the target area to accommodate the properties. An additional 2 grantees originally targeted areas where they found that buyers were reluctant to purchase homes, so they expanded their target areas to include neighborhoods that were more attractive to buyers. In these cases, grantees were still able to serve NSP-eligible areas but were not successful in their effort to revitalize the most distressed neighborhoods.

4.3 NSP2 Activities Pursued and Achieved

As discussed in Chapter 1, NSP2 offered grantees five activities to choose from to improve their local housing markets: (1) financing, (2) acquisition and rehabilitation, (3) land banking, (4) demolition, and (5) redevelopment. The next five subsections describe each of the five activities available to NSP2 grantees and how the 34 grantees in our sample implemented each activity. Grantees' activities were not static; they often changed from one activity to another in response to changing market conditions or unanticipated obstacles in implementation. Indeed, as described below, the flexibility of the NSP2 program in allowing grantees to deviate from their original plans was important to grantees' ability to invest all the NSP2 funds. These shifts between activities are described in the next subsection. In the last

subsection, grantee efforts to concentrate activities are described. We allude to challenges grantees encountered with activities throughout this section and describe them more fully in Section 5.6.

In this section, we report activities following the HUD definitions to the extent possible. Note that the distinction between activities as reported by grantees was not always clear, especially between Acquisition and Rehabilitation (Activity B) and Redevelopment (Activity E). As discussed in Chapter 1, grantees completed rehabilitation and construction activities under Activities B and E. The difference between these activities is based on the status of the property at the time of acquisition, not the amount of repairs required. For example, some grantees acquired foreclosures under Activity B to rehabilitate but discovered that it was too expensive to rehabilitate the existing home and ended up tearing down the house to build new construction. Because of its status as a foreclosure acquisition, this construction was classified as Activity B, "Acquisition and Rehabilitation." Furthermore, each property treated by a grantee was only to be reported under one activity in the Disaster Recovery Grant Reporting system grantees used to track their progress. Some grantees found this requirement confusing and did not always report activities accordingly. Financing was the activity most commonly combined with another activity, usually acquisition and rehabilitation or redevelopment. HUD issued guidance to grantees to combine their homebuyer assistance loans for rehabilitated or redeveloped homes to the corresponding activities but did not require all prior activities to be reclassified.[29]

4.3.1 Activity A: Financing

Grantees used a wide range of financing vehicles to support the purchase or improvement of single-family or multifamily properties. Financing reported under Activity A was usually standalone financing, where there was no other NSP intervention in a property—that is, the activity typically did not include second mortgages offered to buyers of homes rehabilitated by a grantee. To implement this activity successfully, grantees needed to identify the credit needs in their communities, either for homebuyers or developers, and match those needs to financing structures the grantee could operate. One-half the grantees in our sample (17 of 34) in 12 counties pursued standalone financing; additional grantees offered financing in combination with other activities. Once they began NSP2 activities, grantees learned more about the financing needs in their communities and how they could structure NSP2 to respond to emerging needs; accordingly, there was significant movement both within and away from the financing activity.

Most commonly, grantees offered second mortgages or downpayment assistance, often as loans forgivable over 15 to 30 years, to buyers who qualified for first mortgages in the private market. The homebuyer assistance process of 1 grantee offers an example of how a few NSP2 grantees facilitated these transactions.

This BBSS grantee offered packages of financial assistance that included a second mortgage, downpayment assistance, and a grant to rehabilitate the property up to code. Homebuyers began the process by finding a house through a city-approved lender and realtor and qualifying for a mortgage while the city confirmed their NSP eligibility. Both the city and homebuyer obtained a home inspection and agreed on the necessary repairs, which averaged $30,000. If the work was too expensive, the city denied the purchase and the buyer had to identify another property. After the buyer and city agreed on a property

[29] "Guidance for Reporting Projected and Actual NSP Grantee Accomplishments in DRGR." *Community Planning & Development.* October 2012.

and scope of repairs, the buyer obtained a first mortgage on his or her own, receiving up to $10,000 in closing cost assistance and a second mortgage of up to $30,000 for repairs. The second mortgage is a 30-year, equity-sharing loan.

At least 5 grantees linked their financial assistance with requirements for rehabilitation, for example, to ensure that the property was up to code. Grantees found that homebuyers often encountered difficulties rehabilitating the properties they purchased. One of their concerns was that they did not want to put homeowners with limited means in the position of taking on a home that required more repairs than they could afford, even with assistance. In Philadelphia County, for example, a grantee initially planned to offer $25,000 rehabilitation grants to buyers of homes in the target area. It soon learned that a first level mitigation (such as removing lead-based paint) in the area's old housing stock would often cost $75,000—a level it deemed "too much to ask of homebuyers with limited resources." In Kings County, New York, a grantee tried to overcome these steep costs by pairing NSP2 with other rehabilitation programs. With some difficulty coordinating the program guidelines and only limited success, a grantee in Kings County helped NSP homebuyers use the Federal Housing Administration's 203(k) purchase and rehabilitation mortgage product. This activity was so challenging, however, that 3 of these grantees ultimately shut down their financing and rehabilitation programs.

Even when grantees providing second mortgages found qualified homebuyers, some grantees (5) found lenders difficult to deal with, either because of tight underwriting standards or because lenders were unfamiliar or unwilling to participate in a new federal program with its associated regulations. When programmatic issues were a problem, some grantees were able to form relationships with lenders to which they proactively referred borrowers.

Of grantees, 4 originated first mortgages. The borrowers' credit profiles—such as credit scores under 600 or only alternative sources of credit—made the underwriting challenging, though grantees did find ways to approve homebuyers. In general, grantees found that borrowers needed financing that was not available in the private market. A BBSS grantee in Florida added first mortgages when it found homebuyers had trouble obtaining credit in the private market.

Another mortgage-originating grantee encountered difficulties with the long timeline for buyers to find a home, complete counseling, and close the loan—all told, 8 to 9 months. In part, this might have been more difficult because buyers found a lower inventory of foreclosed properties than the grantee expected. Shared-equity programs were used by 2 of the grantees originating first mortgages. In an SG market, however, 1 grantee found there was little familiarity with and low demand for the shared equity product.

The financing activity posed challenges to grantees, both because of programmatic requirements and because of the conditions in the financial markets, especially in the early years of the program. Grantees had to identify qualified homebuyers who earned below the 120 percent AMI threshold while still having enough personal resources and credit history to meet downpayment and underwriting requirements. This proved challenging for one-half of the grantees that engaged in the financing activity (16 of 32) and for grantees providing financing within the rehabilitation and redevelopment activities as well. Borrowers also had to complete 8 hours of HUD-approved prepurchase housing counseling, an NSP requirement.

Grantees had to make specific efforts to advertise the availability of NSP2 properties and find eligible homebuyers. Strategies to find eligible homeowners included working with community partners, such as churches, cities, and nonprofit organizations; attending affordable housing groups; creating a Web site; giving trolley tours in NSP2 neighborhoods; advertising with signs on the properties; and promoting word

of mouth. In addition, some grantees offered homebuyer counseling or had a partner that did, so they had a pool of ready buyers available. A few grantees (3) said it was initially difficult to find homebuyers but that it became easier later in the grant period, and 1 grantee in Miami that targeted a neighborhood that had long been distressed found that buyers did not want to purchase in its initial target area and so had to expand to the surrounding neighborhood that homebuyers found more desirable.

Instead of working with homebuyers, 2 grantees chose to provide bridge financing to developers to rehabilitate foreclosed properties. In Los Angeles County, 1 grantee strategically shifted funds into multifamily financing because it faced mounting investor competition and rising prices for single-family homes. The grantee saw this financing as beneficial in that it would both help move low-income individuals and families into affordable rental units and generate monthly income for the grantee.

4.3.2 Activity B: Acquisition and Rehabilitation

The large majority of the grantees in our sample (30) engaged in acquisition and rehabilitation, making this the heart of NSP2 interventions. Grantees often used NSP2 as an opportunity to renovate troubled properties to very high standards without the projects having to meet a rigid cost-benefit analysis. Specifically, being able to subsidize the sale to a low- or moderate-income homebuyer with a forgivable soft second mortgage allowed grantees to conduct higher quality rehabilitation than what these buyers could have afforded on their own. The soft second loans also placed deed restrictions on the property so that it would remain owner occupied and affordable for up to 40 years. In fact, 1 grantee explicitly planned for being able to sell properties for less than its costs. Some grantees were enthusiastic about the ability to do all the necessary rehabilitation work to some of the "worst of the worst" properties without a concern for the return on their investment. Without being able to do the work under NSP, some grantees felt rehabilitated properties would be ignored by the private market and remain sources of blight. The perceived benefits of doing the work included stabilizing neighborhood property values, reducing crime, increasing the local tax base, and, more generally, sending a signal to the community that the city was committed to a broader revitalization effort.

Acquisition

Grantees were acquiring properties in the worst housing market conditions in decades and had to do so quickly enough to meet the NSP2 expenditure deadline, so grantees pursued many channels to acquire properties. In spite of these serious constraints, grantees managed to acquire needed properties, but for one-half of grantees, this meant buying opportunistically or "taking anything we can get."

Grantees engaged a wide range of strategies to acquire properties: REOs (24), short sales (7), tax foreclosures (6), publicly owned properties (6), the National Community Stabilization Trust (NCST; 15), and Fannie Mae's First Look program (13). The latter two programs offer government entities and qualified nonprofit organizations the opportunity to purchase foreclosed properties before they are made available for sale to the general public. Of grantees using NCST, 60 percent (9 out of 15) were in the Sand States, where grantees perceived a "mini-bubble" in housing prices taking hold during NSP2, brought on investors "appearing from everywhere—Australia, New York" to begin purchasing houses in the metropolitan area. This wave of investors was paying cash and often above asking price, driving a handful of grantees in BBSSs to rely heavily on NCST for their acquisitions.

Some communities found it advantageous to work on properties they already owned. The Michigan state consortium, for example, established partnerships between local municipalities and land banks, which control tax-foreclosed and other forfeited properties. Land bank inventories sometimes proved ample to

allow grantees to choose properties strategically within their target areas and avoid the complexities of acquiring REO properties. Overall, 6 grantees in our sample worked on publicly owned properties that had been turned over to the city or previously purchased for rehabilitation or redevelopment.

When grantees could be selective, the feasibility of rehabilitation was a paramount consideration. They made a preliminary assessment about their interest in pursuing the property and what strategy might be necessary. A grantee's team members had strategic planning sessions about each potential property, "a long process but it's core to what we do." In these discussions, the team members talked about the external condition of the property to come up with a plan to demolish, redevelop, or rehabilitate. After a property was acquired, the NSP2 partners brought in an expert in rehabilitation to confirm that rehabilitation was possible or that demolition and building from scratch was necessary.

One-half of the grantees were not as fortunate and had to become more opportunistic in their acquisitions (17 of 34), loosening property-selection criteria and buying anything they could—often properties in need of the most rehabilitation. The effects of this opportunistic buying were multiple: grantees expended significant time and effort to acquire properties, delaying the start of rehabilitation work. When grantees ended up with properties that needed more rehabilitation work, that increased per-property costs and placed grantees in the position of choosing to do work on fewer properties, to loosen their rehabilitation standards (such as for energy efficiency), or find other compensating strategies. We discuss these further in sections 5 and 6. In general, grantees often faced multiple challenges to acquiring properties and used multiple acquisition strategies to respond to these challenges.

Rehabilitation

After properties were acquired, grantees estimated a scope of work for the required repairs. Depending on the condition of the property, its location, and the grantee's capacity, grantees reported that a property might be converted to a demolition, land banking, or redevelopment. Upon deciding to rehabilitate, grantees either used an architect or inhouse rehabilitation expert to write up a scope of work that would be presented to contractors for quotes. Some grantees found it most efficient to bid out several projects at once. Staff members reviewed the bids, selected a developer, and entered into a contract with the developer or contractor. Depending on the scope of rehabilitation, grantees reported that the work could take anywhere from 3 to 24 months.

Homeownership Opportunities

Most grantees offered their buyers financial assistance under this activity in the form of downpayment assistance, closing costs, or a soft second mortgage to close the gap between what a buyer could afford and the appraised value of a home. These loans are usually forgiven over time as long as the borrower retains the home as his or her primary residence. Grantees noted that, in addition to making the homes affordable to low-, moderate-, and middle-income buyers, they kept the sales price at market value, thereby stabilizing or raising prices in the target area. Grantees informed us that selling the homes for whatever amount an approved homeowner could afford—under its market value—would have artificially lowered the price closer to foreclosure auction prices, negating NSP's potential to stabilize real estate values.

A handful of grantees (6) reported difficulty selling their rehabbed units. One-half of these grantees reported that because they worked in the most distressed neighborhoods in their cities, prospective buyers were wary of moving into the area.

4.3.3 Activity C: Land Banking

As discussed in Chapter 1, NSP allowed registered public or nonprofit land banks to acquire and hold properties for future redevelopment that will serve a CDBG National Objective. Land banking was the least used NSP2 activity, with 10 grantees land banking 379 properties in nine counties. A prerequisite to the success of land banking was to have a certified land bank already operating at the time of the grant, a barrier that prevented at least 1 grantee from adding the activity. Of our sample grantees, 2 belonged to the Michigan state consortium, a feature of which was partnering municipalities with local land banks to pursue coordinated regional development goals. Grantees land banked several types of properties, including vacant lots on which a property was demolished, properties acquired but deemed unsuitable for rehabilitation, unfinished condominium projects, and a commercial development.

Grantees noted three reasons for conducting land banking. In the first case, grantees held properties for specific development plans at a later date. Plans include the development of single-family infill development and multifamily rental housing and the conversion of a large property to a new public library and commercial spaces.

In the second case, grantees conducted land banking to hold properties with no clear disposition or development plans in place. In some cases, this means properties will remain vacant lots for the foreseeable future until a disposition plan can be put in place, until market conditions improve to the extent that the land becomes viable for redevelopment, or until the land bank can assemble adjacent lots for a larger redevelopment project.

A third reason for land banking was simply that delays in the process meant that the property could not be redeveloped within NSP2's 3-year timeframe. For example, two properties in Denver County that had unresolved zoning issues and seven homes in Cuyahoga County that had not yet attracted a developer who would rehabilitate them up to NSP2 standards were land banked.

4.3.4 Activity D: Demolition

Overall, 15 grantees in 13 of the 19 counties in the study sample undertook demolition as a part of their NSP2 strategy. Within those counties, 3,100 properties were demolished, making this the most cost-effective activity both in dollars and in number of units. Grantees that demolished properties tended to do so for two distinct reasons. For some grantees, such as in Cuyahoga and Wayne Counties, demolition was an intentional strategy of blight removal in response to an overabundance of abandoned properties. Grantees used this strategy both to remove blight as a standalone goal and to remove blight surrounding rehabilitated properties to make them more attractive to potential buyers. A grantee using demolition this way also noted that the existing neighbors "love seeing the blight come down." For others, demolition was not an intentional strategy but rather an alternative when a property was deemed too expensive to rehabilitate.

Grantees that had intentional demolition strategies often did not acquire the properties being demolished but rather conducted the demolition under a nuisance ordinance. Beyond determining that properties were eligible for demolition under NSP2 guidelines, steps in demolition included ensuring that properties were vacant, not historic, and that the grantee was legally entitled to conduct a demolition. Wayne County, for example, maintains a list of dangerous buildings deemed to pose threats to public safety and can be torn down without the consent of a (usually absentee) owner. A grantee in the county was able to gain approval from the city council for batches of properties from the dangerous buildings list in the NSP2 target area through an expedited approval process.

After a property had been cleared for demolition, grantees followed a fairly typical process to complete the demolition. A contractor was hired to conduct the demolition, and a permit was then secured to initiate the process. Any environmental mitigation necessary, such as the removal of asbestos, would be completed, and then the actual teardown could begin. From start to finish, a demolition took approximately 2 to 4 months and cost approximately $11,700 (see Chapter 5).

After a property had been demolished, NSP2 guidelines mandated that the property be cleared and seeded with grass. Then, grantees typically followed one of three steps for the property. For properties not acquired by the grantee, a lien was typically placed on the property by a local jurisdiction in an attempt to recover the cost of demolition and other outstanding bills, such as unpaid code violation fines and back taxes, which many of these abandoned properties had amassed. After a set period of time, typically 3 years, the jurisdiction will claim title to the property if the taxes are not paid. In cases where the grantee acquired the property, cleared lots were either sold to adjacent landowners for a nominal fee (which freed grantees from having to maintain the lot) or transferred to a land bank for future affordable housing strategies.

4.3.5 Activity E: Redevelopment

Following HUD guidelines, redevelopment projects were completed on properties that were vacant or had structures that were demolished. More than 600 properties were redeveloped by 20 grantees in 16 counties. Grantees undertook redevelopment to construct large, affordable multifamily housing units or to create high-quality single-family housing units for purchase by low-income buyers. Grantees built a variety of property types, including single-family ownership housing, multifamily rental buildings, multiunit senior housing, shared-equity housing, and housing as part of larger mixed-use development. Multifamily projects ranged in size from 12 to more than 100 units. Based on their size, redevelopment projects took from 3 months to 2 years to complete.

Grantees additionally regarded redevelopment as a means of quickly expending NSP2 funds before the spending deadline; in the case of Cuyahoga County, the grantee switched from a single-family acquisition and rehabilitation strategy to a multifamily redevelopment strategy when it became clear that the grantee would not be able to meet the spending requirements with acquisition and rehabilitation alone.

In several cities, multiple vacant lots were merged to make larger redevelopment possible. In Philadelphia, for example, 25 small lots were assembled and converted to 10 larger lots with new homes and yards (each new home sits on what had previously been 2 to 3 adjacent lots). Other targeted properties included a partially completed condominium project, where the grantee stepped in to complete the development, and a former church annex building that was redeveloped as several homes. In Davidson County, redevelopment was targeted in a gentrifying area to maintain long-term affordable housing.

Because redevelopment projects often included large multifamily development, grantees often leveraged NSP2 funds to complete projects. In Cleveland, the city leveraged nearly $2 million from Cuyahoga County to redevelop a 20-unit multifamily rental project. In Evanston, a mixed-use development project combined NSP2 funding with CDBG and HOME Investment Partnerships program funds as well as tax increment financing. In Denver, a grantee used tax credits and grants and merged its NSP2 funds with that of the city to complete an unfinished condominium development project.

Redevelopment activities benefited a range of residents, both in single-family and multifamily properties, both renters and homeowners. Many grantees used the redevelopment activity to create rental units for

households earning less than 50 percent AMI as part of NSP's mandated low-income setaside that 25 percent of the program benefit this population. The general perception was that homeownership would be difficult for this population to sustain. In some cases, grantees (3 out of 20) proactively sought to use redevelopment to purchase large "problem" rental properties that were sources of blight and crime. Other grantees sought to use redevelopment of rental housing to serve broader social goals. A handful of grantees (5 out of 20) chose to rehabilitate multifamily properties to serve tenants who had special needs, including youth aging out of foster care, battered women, formerly homeless individuals, and people with disabilities.

4.3.6 Shifts in NSP2 Activities

The majority of grantees (27) across all market types changed their initial strategies at some point during the grant period. The three most common changes that grantees adopted were eliminating the financing activity, shifting their acquisition focus from single-family properties to multifamily properties and shifting their acquisition focus away from foreclosed properties.

Reducing Financing Activity

Almost one-half of the grantees (16) in all markets except BBEC changed the ways they provided financial assistance relative to their original plans. Two key market changes contributed to this common shift. First, 11 of the 17 grantees providing standalone financing reallocated funds from financing (Activity A) to rehabilitation (Activity B) or redevelopment (Activity E) because they had difficulty providing financial assistance to individuals purchasing properties in the private market as opposed to from the grantee. As described above, some grantees found that lenders were reluctant to work with a new federal program and its associated regulations. Even when financing was available, 4 of these grantees found little demand for homebuyer loans for non-NSP2 properties, and 3 of these grantees thought the lack of demand was related to the poor quality of the affordable housing stock available in the target area.

For example, 1 BBEC grantee provided assistance with the goal of helping 176 homebuyers. In practice, buyers faced more difficulty than expected in both identifying properties that would qualify for financing and competing for these properties with cash buyers, and ultimately only 45 buyers received downpayment assistance. About half of the funds intended for the financing activity were reallocated for redevelopment.

Another trend that drove the shift in grantees' financing strategies was that 4 grantees among the entire study sample were able to reduce the level of mortgage assistance provided to individuals purchasing properties rehabilitated or redeveloped using NSP2 funds, because these homebuyers required less assistance than originally anticipated. A few grantees noted that buyers required less NSP2 assistance because they already had access to other sources of mortgage assistance within the community, such as existing programs providing soft second mortgages to qualified homebuyers. Other grantees, particularly within Los Angeles County, explained that there was a higher demand for NSP2 properties than expected, and grantees were able to attract buyers who required less assistance. A further factor, discussed above, is that initially some grantees were separately reporting rehabilitation activities and homebuyer assistance on the same property. Following HUD guidance issued in October 2012, grantees were to only count such assistance under the property activity.

This shift away from financing illustrates that NSP2 was flexible enough to allow grantees to redirect resources away from activities that proved unproductive or not as necessary as other interventions.

Shift to Multifamily Acquisition

One of the most common ways grantees redesigned their programs was changing their acquisition focus from single-family to multifamily properties (10 grantees). This happened for several reasons. Some grantees did this because they had more difficulty selling single-family properties in the target areas than originally anticipated. More commonly, grantees reported shifting their acquisition focus toward multifamily properties because they needed to quickly spend program funds to meet spending deadlines. For example, with the explicit purpose of speeding up expenditures, one consortium's lead grantee recaptured funds originally intended for single-family rehabilitations to provide financing for a multifamily project in the same city.

In BBEC and BBSS markets, 5 grantees reported shifting their focus toward multifamily property acquisition because they had difficulty acquiring single-family properties, especially as private investors reentered their markets. Among them, 2 grantees' experiences illustrate how shifting from single-family to multifamily properties impacted their programs. In Cook and Los Angeles Counties, investor competition made it challenging to acquire single-family properties. Both of these grantees then shifted from programs focusing on owner-occupied single-family homes to multifamily rental properties. Instead of assisting households to become owners, these grantees filled a previously unmet need for affordable rental housing, though for a population that was potentially lower income than homebuyers might have been.

This shift away from single-family properties illustrates that grantees adapted their programs based on the availability of properties. This change in strategy may mean that NSP2 created more rental and fewer homeownership opportunities than originally anticipated.

Shift Toward Redevelopment

The third most common shift among all the grantees (7 grantees) was reallocating funds from acquisition and rehabilitation (Activity B) to redevelopment (Activity E). Grantees interpreted the difference between the acquisition and rehabilitation and redevelopment activities as the status of the property: foreclosed properties are eligible for rehabilitation, while demolished or vacant properties are eligible for redevelopment.

The main reason for this shift was that grantees found fewer foreclosed properties available than expected, and it was easier for grantees to acquire demolished or vacant properties. In two judicial foreclosure states, grantees found that the HUD risk scores were based on lis pendens filings, which are one of the first steps in the judicial foreclosure process. Properties actually took much longer than anticipated to move from the lis pendens stage through foreclosure—and some never did—so the pool of expected foreclosures simply did not materialize.

A grantee in Pulaski County provides one example of this shift, where support from local policies was crucial to advancing the program. Although the grantee's initial strategy included acquiring foreclosed and vacant properties, the grantee eventually primarily focused on addressing vacant properties within the redevelopment activity, because vacant properties were more widely available in strategic areas, and the acquisition process took less time. To make it possible to obtain vacant and abandoned properties in a timely fashion, the State of Arkansas had to pass legislation on abandoned housing that was similar to the NSP definition. This allowed the grantee to acquire these properties under state law using NSP funds. A possible outcome is that although NSP2 was designed to respond to the foreclosure crisis, in counties that faced difficulty acquiring foreclosures, grantees may have addressed fewer foreclosures than originally planned.

In sum, grantees altered their mix of activities and their number of expected units. Grantees found that some activities were more difficult to implement than expected or that there was less need for them than anticipated, so resources were shifted from one activity to another, resulting in changes to numerical goals for each activity. Most grantees reported that they met their numerical unit or property count goals, although these were often revised from the original action plan. Among grantees, 31 said they met or exceeded their goals; only 3 said they did not. One important reason for not meeting goals was higher than anticipated costs. In addition to unanticipated high rehabilitation costs discussed above, some properties required more gap financing than expected to serve a low-income population, and the cost of providing first mortgage financing was higher than expected. As we discuss further in Section 5.6, tight timelines may have affected costs and achievements, as well. A grantee said that with more time to make strategic decisions about acquisitions and less focus on meeting expenditure deadlines, it could have made more cost-effective decisions and met their numeric goals.

4.3.7 Grantee Efforts To Concentrate NSP2 Activity

One way NSP2 differed from NSP1 was tighter requirements for targeting, making NSP2 target areas on the whole smaller than NSP1 areas. Although target areas as a whole were smaller, grantees were not specifically instructed to concentrate their activities further—that is, cluster their properties—within their selected target areas. Still, a number of grantees believed that concentrating NSP2 activities would maximize the impact of their work, and about two-thirds of them intended to concentrate their NSP2 investments (23 out of 34 grantees).[30] A grantee explained that the benefit of concentrating the organization's efforts—NSP and non-NSP—was "the density, it's the accumulation, it's the repetition, reinforcing that hope is what happens when you do more."

Each of the five market types included grantees that intended to concentrate; in SG and BS markets, all grantees did. Only 11 grantees did not intend to concentrate activities, all but 1 of which were located in BBEC markets (3 out of 11) or BBSS markets (7 out of 11). An additional grantee that did not intend to concentrate was located in an L/D market; 1 grantee's intention to concentrate was not clear.

Among grantees that did not intend to concentrate, reasons noted included political pressure to disperse NSP2 investment, working in geographically large and sprawling areas not conducive to concentration, or a desire to conduct NSP2 activities in all qualifying tracts.

Although 23 grantees intended to concentrate activities, less than one-third of those (7 grantees) reported that they were able to concentrate as much as they wanted to. Those 7 grantees were located in six counties, representing each market type except for SG (Cook, Ingham, Miami-Dade, Philadelphia, Riverside, and Wayne). The 16 grantees that intended to concentrate but were not able to do so at the level they desired were located in each of the five market types, indicating that challenges to concentrating activities were not unique to a particular market type.

The 16 grantees that were unable to concentrate to the extent they desired gave several explanations for this. The most commonly cited hindrances to concentration were improving market conditions that

[30] Note that grantees did not all mean the same thing when they discussed their intention either to concentrate activities or not. Some considered a focus on multifamily properties to be concentration of activities, for example. Grantees generally meant focusing on multiple properties in close proximity to one another but may have had different ideas about what was "close."

resulted in increased competition for homes and higher purchase prices (11 grantees). Another 6 grantees noted the specific effect of investor competition on limiting the availability of properties, especially in later stages of NSP2 implementation. As discussed above, increased competition for properties led grantees to be more opportunistic than strategic in acquiring properties, as did timing constraints imposed by the program spending deadline, which 3 grantees noted as a hindrance to concentration. Additional factors noted by grantees as hindering concentration were NSP2 guidelines and regulations (5 grantees) and that the areas in which they were working were so large as to make concentration difficult (2 grantees). An additional grantee noted that NSP2 investment was dispersed because of political pressure to have NSP2 broaden its reach; another grantee explained that a large investment in one multifamily property in one area of town diverted funds that otherwise would have been used for a concentration of single-family acquisition and rehabilitation in another area.

In general, the consequence of these factors—competition for properties, timing constraints, and political pressure—was typically to loosen property selection criteria, including less geographic concentration. For the same reasons, grantees were sometimes not able to target properties they thought would have the greatest impact, instead acquiring properties that were relatively easily accessible.

4.4 Use of Leveraging and Program Income To Extend NSP2 Activities

NSP2 was designed to expand the potential impact of the total funding amount of $1.93 billion through two primary mechanisms: leverage funding and program income. Applicants were encouraged to find additional sources of nonfederal funding to use in proposed NSP2 activities, and they were required to use income generated from program activities to conduct additional eligible activities.

4.4.1 Leveraging

Grantees' plans to use their NSP2 grant to leverage other funds were a rating factor in the NSP2 application. Leveraged resources that "counted" toward this requirement were from state, local, private nonprofit, or private for-profit sources and could include loans, grants, in-kind contributions, donated land and construction materials, and donated services. Federal resources such as CDBG and other NSP funds were not considered leveraging. Applicants documented commitments to provide resources in written agreements that were included in their applications.

The 34 sample grantees proposed leveraging an average of $20.4 million compared with an average grant size of $49.8 million. Of these grantees, 3 included no leveraging at all in their applications: the State of Michigan; the City of Modesto; and the Washington, D.C., Department of Housing and Community Development. Denver and Habitat for Humanity applied with the most leveraging—$64.7 million and $63.6 million, respectively.

Leverage funding did not always materialize in the amounts expected; 5 grantees specifically said they leveraged resources in about the amounts planned in their application, and 6 said they received less leverage funding than planned. Other grantees were not specific about this but in most cases appear to have leveraged fewer resources than planned.

Sometimes, leveraging did not materialize because it was not needed. For example, 1 grantee received a commitment for a loan that it ultimately could not use. In other cases, planned partners who were slated to contribute leverage funding dropped out of the NSP2 team. Perhaps the most important factor is that almost one-half of the lead grantees (13 out of 28) did not receive the amount of grant funding they applied for, so the scale of the work done—and perhaps therefore the leveraging needed—was less than originally planned.

Grantees seemed to place varying degrees of emphasis on achieving specific leveraging targets. The three Habitat affiliates described leveraging as being important, citing specific leveraging ratios they were required to meet and describing sources of leveraged funds in detail, including contributions from the grantee itself, which were not common. In contrast, many other grantees had difficulty providing specific information about either leveraging sources or amounts during our site visits, suggesting that they placed less focus on achieving specific leverage funding targets. The most commonly mentioned type of leveraging was Low Income Housing Tax Credits (12 grantees). Loans or a line of credit were also common sources (9 grantees); grants were mentioned much less frequently (2 grantees). Developer investments or equity was another source of leveraging (4 grantees). Others mentioned included donated land (3 grantees), donated appliances or other in-kind contributions (3 grantees), homebuyer counseling services (2 grantees), and downpayment assistance for borrowers (2 grantees).

Several grantees mentioned federal funding as sources of leveraging, including HOME funds (6 grantees), CDBG (2 grantees), and NSP1 and NSP3 funds (2 grantees). These sources did not qualify as leveraging in the application process, so it may be that grantees were conflating the leveraging requirement with the instruction to coordinate NSP2 funds with funding from other federal sources.

4.4.2 Program Income

The grantees in the sample earned NSP2 income through several means. Most immediately, grantees that sold rehabilitated or redeveloped properties recovered some of the investment of NSP2 funds they had made. Other program income is related to repayment of loans that typically will be received over a long period of time. Less significant sources include interest on program income pending use, repayments of liens placed on privately owned property demolished using NSP funds, and net operating income on rental properties. Program income helped grantees increase the number of properties they were able to treat under the program and provided opportunities for similar work in the future.

In general, grantees were not able to provide site visitors with precise amounts of program income, but their estimates ranged from very little to quite substantial. Program income was highest for Phoenix, with a gross income of $26 million on an award of $60 million (43 percent). Other grantees reporting significant program income were Los Angeles, with $34 million on an award of about $100 million (34 percent), and Chicanos Por La Causa, with income of $20 million on an award of about $137 million (15 percent).[31]

The amount of program income earned varied based on the type of activity and the grantee's approach to the activity. Acquisition and rehabilitation or redevelopment tended to produce the greatest amount of program income, but within those activities, grantees reported that program income was lower on rental properties than on for-sale properties, and 2 grantees told us that they balanced the share of homeownership and rental properties in part to manage program income. Likewise, properties requiring extensive rehabilitation or that were rehabbed to a high quality standard tended to earn less program income than less extensively rehabbed properties. Similarly, within the financing activity, some grantees provided interest-free loans to borrowers and will receive no program income; other grantees charged interest.

[31] This leverage amount applies to the consortium's national grant, not only the six affiliates working in our sample counties.

Grantees reported that they are using program income primarily to complete or extend their NSP2 work. It was "really a good thing—it kept us going and gave us flexibility when we had spending deadlines. We could meet our spending deadline even though we didn't have enough grant money left to do it because we knew you were going to get program income." Several grantees said their program income either had already been spent acquiring and rehabilitating NSP2 properties or soon would be (13 grantees). Of the others, 1 grantee said that program income would be used to leverage NSP3 funding, and 2 grantees said it would be used to redevelop or rehabilitate properties land banked using NSP2 or otherwise already in inventory.

Perhaps the most innovative use is a consortium grantee that plans to competitively award the NSP2 program income to applicants. At the end of the grant period, all subrecipients returned their program income to a collective pool of funds that will be awarded competitively to support regional development priorities. They plan to extend NSP2 activities and add options for mixed-use and commercial projects in downtown areas or near anchor institutions to support comprehensive community revitalization.

For 1 BBEC grantee, program income has had an important financial impact. The staff described program income as allowing the organization to become "financially healthy," because program income from loan repayments is providing a greater financial cushion and therefore more flexibility in the future to continue the grantee's work of acquiring and rehabbing homes. The staff consider this to be particularly important because the inventory of free or very low-cost properties they could previously acquire from state agencies has been absorbed by NSP, and they anticipate having to compete with other buyers for properties they will acquire in the future.

4.5 Grantee Achievements

The specific numbers of units, dollars spent per tract and by activity, and other outcome measures are presented in Chapter 4. Although most grantees met their numeric goals for the number of units created and all grantees met the spending deadlines, grantees also achieved a range of other outcomes and provided site visitors with self-assessments about less tangible effects of NSP2 in their communities. This section describes grantees' perceptions about their achievements over the course of the NSP2 grant in terms of job creation, changes in grantee staff capacity, local economic development, blight removal, and creation of sustainable homeownership opportunities. Grantees on the whole believed that NSP2 was a successful program that spurred the local real estate market to improve. The grant management and construction experiences built capacity at grantees and among participating developers. In addition, although NSP2 was not large enough to alleviate all the challenges in targeted neighborhoods, many grantees believed that their efforts helped to reduce blight and crime and build goodwill among residents and other community stakeholders.

4.5.1 Grantees' Perceptions of Neighborhood Stabilization Program 2 Successes

None of the grantees in our sample believed that they would have been able to accomplish what they did without the NSP2 grant. The majority of grantees (21) believed that without NSP2, their revitalization efforts would have taken years longer to achieve and would have been on a much smaller scale. Moreover, about a third of the grantees (11) stated that without NSP2, their projects would not have occurred at all. These properties would have remained blighted, vacant, abandoned, or foreclosed, because these organizations and local governments did not have the funding to take on these projects alone. For example, 1 California grantee explained that its NSP2 activities would most likely not have been financed because other funding sources were scarce, especially because the state faced extreme

budget cuts during the recession. A nonprofit grantee in a BBEC market held that it is unlikely that its projects would have occurred without NSP2 funding, because the organization could not take on the level of debt to implement the rehabilitation needed, and no other sources of substantial funding were available.

In addition, about one-fourth (8) of the grantees stated that NSP2 enabled them to address the housing needs of the low-income populations that the reemerging private market ignored. Of these grantees, 3 specifically mentioned that NSP2 enabled them to provide low-income residents rental units, which were projects that the private market would not have pursued. A Boom-Bust grantee in Chicago explained that it is unlikely that the market would have supported the large-scale multifamily redevelopment projects the grantee created for low-income households. On the other end, 5 grantees were proud to provide low-income families homeownership opportunities that were not available in the private market. An SG market grantee explained that, although private investors may have started to reenter the market without NSP2, the grantee believed that these investors would not have addressed properties in the lower income areas and would have produced much lower quality housing than the grantee created under NSP2.

4.5.2 Other Program Outcomes

Fundamentally, the goal of NSP was to stabilize communities that have suffered from foreclosures and abandonment. In the NOFA for NSP2, HUD also specified that grantees should use their NSP2 opportunities to, among other things, create or retain jobs and otherwise support the local economy; provide at least 8 hours of housing counseling to purchasers; rehabilitate homes to meet energy efficiency standards; and coordinate their NSP2 grants with other federal programs. This section describes grantees' accomplishments in these areas and grantees' perceptions of the impacts of NSP2 in their communities. Depending on the grantees' NSP strategy and the needs of the community overall, grantees placed different degrees of emphasis on the importance of the programmatic requirements for their target neighborhoods. As we discuss further in this section, some grantees felt that the most important additional benefit of NSP was supporting the local economy, while for others it was providing homeowners the education they needed to maintain their homes and sustain long-term ownership.

Grantees' Perception of NSP2 on Market Activity

More than one-half of the grantees in our sample (21) believed that NSP2 stabilized or raised home prices in their target areas.[32] Of those grantees, more than one-third (8) noted that NSP2 did this specifically by creating comparable sales (comps) at full market value when an NSP2 property is resold rather than foreclosures or distressed sales. In some places, NSP2 properties were the main—or only—nondistressed sales activity in the market, and early NSP2 homes became comps for later NSP2 sales. A grantee described a dramatic increase in appraised values occurring in a highly distressed declining market where, prior to NSP2, only very low-end properties were being sold in the target area, appraising for as little as $1,000 to $4,000. The grantee reported that by the end of the grant, new NSP2 homes were appraising at $50,000. As the director of community development noted, property values are a tremendous struggle for existing homeowners in the community and a deterrent for potential homeowners, so "any little bit" they could raise assessed values was helpful.

[32] This counts the four Wayne County cities separately, because subgrantees ran distinct programs in different market conditions in the county.

As another example, NSP2 was instrumental in helping 1 BBSS grantee to stabilize some neighborhoods and buy properties. At the time the program began, people were "skittish" and did not trust the banks, and the banks were "skittish," too. By providing a finance mechanism and government stamp of approval, this grantee felt that NSP2 encouraged people to consider buying again.

When 11 grantees stated that NSP2 led the market to improve, the primary evidence they cited was that private developers resumed building in the cities. In four cities, NSP2 sparked new commercial developments in the target areas. Notably, these are instances where grantees felt that NSP2 drove the changes, not places where investors were coincidentally returning to the market anyway. These improvements were not limited to any particular market but were reported in L/D markets (3 grantees), SG (1 grantee), BBSS (6 grantees), and BBEC markets (1 grantee). Grantees reported that these improvements restored confidence in the market among both real estate professionals and local residents.

Nonetheless, 2 grantees expressed reservations about market changes: 1 L/D market grantee felt that although its work would last, it might not be enough funding to reach a point where the private market will take over on sales and rehabilitation. Conversely, 1 BBSS grantee felt that its work had created the impetus for investors to purchase and rent out properties that otherwise might have become owner occupied. Several additional grantees felt that, although it was too early to see, change related to NSP2 would become evident over time.

Job Creation and Capacity Building

Nearly two-thirds of the grantees in our sample (22) claimed that their programs kept contractors in business during the recession or created new jobs. Most grantees did not provide specific numbers of jobs created or maintained by NSP2 but were confident the work kept businesses operating. For those grantees that did estimate a number, the number of jobs created or maintained by NSP2 depended in large part on the size of the grant. Estimates ranged from 24 jobs created for a new venture for deconstruction instead of demolition to about 2,400 jobs in a large urban area. A BS grantee noted that NSP2 was particularly important to small businesses, which were able to roll out the NSP2 work quickly. NSP2 has kept many of them and their subcontractors in business when they otherwise would have gone under, something the grantee did not fully appreciate when it applied for the grant.

Several grantees (9) reported that contractors gained new skills, capacity, or certification by virtue of participating in NSP2. These experiences included gaining capacity through hiring new workers that received on-the-job training, adding a new area of work to the contractor's portfolio or gaining their first experience with federal contracting. Others contractors became bonded and certified, which will allow them to obtain future local government work. Finally, a few grantees purposefully worked to help contractors gain Section 3 certification as local low- or very low-income contractors. Contractors completed their work using green building principles (19 grantees), as required by NOFA. A subset of these grantees (4) also noted that NSP2 positively affected the broader environment, not only the buildings themselves. It did so by removing environmental toxins such as asbestos and by introducing more environmentally appropriate, drought-resistant landscaping in a western environment.

More than one-half of grantees (19) reported that they gained capacity as a benefit of NSP2. The benefits to grantees ranged from increasing the number of staff or forming new partnerships to gaining experience efficiently administering grants, which were sometimes the largest they had received. Several grantees noted that the NSP2 experience transformed the way they thought about housing programs and would continue to influence their program designs in the future. For 1 BBSS grantee, for example, NSP2 allowed it to focus on all aspects of the housing process with a comprehensive approach, not just one area.

The grantee felt that before the program, it "theoretically knew the housing concept of redevelopment but NSP2 helped to materialize the concept." Several grantees also noted that NSP2 increased their reputation in the broader community, making them believe they will have similar opportunities in the future.

A few grantees raised cautionary notes, however. Specifically, many grantees were able to build capacity for program implementation but with temporary positions. As a grantee described, "We really pushed hard on the Section 3 and our contractors stepped up to that plate. And when you are surging the market and then starving it—the guys got hired, got work for a month or two, and then we would have to send them home again. And that is not helping at all." In sum, NSP2 certainly raised the skill level of developers to perform high-quality rehabilitations and construction for low- and moderate-income residents. What remains to be seen in the future is if and how they can continue using those skills.

Local Economic Development

Related to economic improvement, a handful of grantees (5) noted the salutary effects of NSP2 on public revenues. This may have happened incidentally in other places, but it was a specific outcome these 5 grantees worked for and considered a positive effect of NSP2. These were 3 L/D market grantees, where public revenues are particularly low, and 2 BBSS grantees where the housing market had made up an especially large part of the local economy before the foreclosure crisis. In L/D markets, the grantees had been deeded many tax-delinquent and abandoned properties: Not only were owners not paying property taxes on them, but cities were also paying to maintain them. When new owners occupied these homes, the cities shed the maintenance burdens and began receiving tax revenue anew. For BBSS grantees, NSP supported the local economy by injecting money into the homebuilding industry.

Grantees nearly unanimously (32) responded to HUD's mandate to coordinate NSP2 with other federal resources. For more than one-fourth of grantees (9), this coordination helped them advance a longstanding vision or stalled project that was a major achievement from the grantees' perspective. At least 2 grantees were using the funds to advance the city's master plan; another was using the funding to finish a HOPE VI development. In one notable case, the grantee used the funds to create housing for plaintiffs in a class action civil rights suit that had been unresolved for decades.

Blight Removal

More than one-half of the grantees in our sample (20) felt that their work had positive visible impacts on their target areas primarily by removing blight. By this, grantees meant demolition of abandoned structures as well as improvements such as tending to browned lawns in desert climates; 2 BBSS grantees created notable visual impacts by replacing lawns with drought-resistant plants, a style of landscaping picked up by neighbors of NSP properties and other developers. In total, more than one-third of grantees (12) reported that neighboring property owners visibly improved their properties after grantees made NSP2 investments, such as making façade or landscaping improvements. This varied by neighborhood even within cities, depending on neighbors' prior sense of neighborhood pride and their ability to afford improvements if they wanted to make them. In a handful of cities (five), grantees noted increased code enforcement as an additional outcome of their work. In at least two of these cases, neighbors increased their demands for code enforcement as the neighborhood improved, not because the grantee incorporated it into the NSP strategy.

More than one-third of grantees (13) believed that crime decreased in their target areas, a claim examined in more detail for three counties in Chapter 9. Grantees most often reported this benefit when they rehabilitated historically troubled multifamily properties.

Community Benefits

All grantees doing homeownership had to provide homebuyer education classes, but a sizeable share of them (13) mentioned homebuyer education as one of the enduring benefits of the program. With homebuyer education, grantees felt that NSP2 homeowners felt pride in their homes and were actively participating in their neighborhoods' revitalization. An additional 5 grantees emphasized that through their NSP2 work, they were able to create sustainable homeownership opportunities for families that otherwise could not have afforded a home, especially where investor activity was increasing again.

Relatedly, many grantees (10) noted that their NSP2 involvement in neighborhoods helped them build relationships with and capacity within target neighborhoods. Evidence of this kind of change includes the formation of block clubs after NSP investment began (2 grantees), NSP homebuyers participating in leadership classes (2 grantees), grantee outreach to neighbors (1 grantee), and police outreach in heavily distressed areas that had previously had negative relationships with police (2 grantees).

Unprompted, more than a third of grantees (12) reported that NSP2 helped them positively change attitudes within neighborhoods or in their community at large. NSP2 improved public perceptions of troubled neighborhoods through a combination of the volume of investment and the care grantees took to produce quality work serving neighborhood needs; 2 L/D market grantees and 1 BBSS grantee reported that NSP2 created a feeling that "someone actually cares this time." Other grantees, too, noted that they saw their programs generating hope and optimism in hard-hit communities. Finally, 3 grantees were pleased to report that their implementation overcame negative perceptions of the program. In one case, a grantee used publicity about a low-income homebuyer to challenge *not in my back yard* attitudes. In another, the grantee gained significant community approval compared with past times when, the grantee believed, the local public did not approve of government programs at all. They received strong praise from the community for the attractiveness of the homes they produced under NSP2 and earned a lot of public goodwill and a reputation for good stewardship of federal dollars.

4.6 Challenges to NSP2 Implementation

As suggested throughout this chapter, grantees faced a number of challenges implementing NSP2. The most commonly cited and perhaps the most important was difficulty in acquiring foreclosures. Most grantees also saw the tight timeframe of NSP2 activities as a challenge. Activity-related challenges, as reported by grantees during the second site visit, are summarized in Exhibit 4–6. As shown, grantees faced the greatest challenges with implementing construction-related activities, acquisition and rehabilitation, and redevelopment—namely, most grantees found higher rehabilitation costs than they expected for reasons ranging from being forced to acquire the most dilapidated properties to having their projects become magnets for theft. Some grantees also faced challenges with some of the programmatic requirements, their own partnerships, and the ability of their staff to respond to the program workload.

Exhibit 4–6: Grantee Obstacles With Activities

Activity	Grantees *N* = 37	Percentage
Financing		
Difficulty finding qualified buyers	16	24%
Relationships with lenders	5	14%
Low demand for financing (Activity A)	2	5%
Other challenge with financing?	7	19%
Property acquisition		
Competition from investors	24	65%
Low inventory/few properties to choose from in target area	23	62%
Acquisition costs higher than expected	15	41%
Mortgage foreclosures were difficult to acquire for some other reason	15	41%
Clouded titles	11	30%
Relationships with private developers or lenders	5	14%
Other market conditions (specify)	7	19%
Other challenge with acquisition?	6	16%
Rehabilitation or redevelopment		
Properties needing more rehabilitation than expected, making them cost prohibitive or infeasible or driving up rehabilitation costs after acquisition	28	76%
Historic designation/state historic preservation office	13	35%
Environmental review requirement	12	32%
Davis-Bacon prevailing wage requirements	6	16%
Section 3	5	14%
Other challenge with rehabilitation or redevelopment?	14	38%
Land banking		
Disposition plan	3	8%
Other challenge with land banking?	5	14%
Demolition		
Long timeline to demolition	4	11%
Obtaining permits	3	8%
Other challenge with demolition?	5	14%
Other		
Did you encounter other obstacles in implementing your NSP2 plan? (Specify.)	13	35%

NSP2 = Neighborhood Stabilization Program 2.

4.6.1 Challenges to Acquiring Foreclosures

NSP2 was designed to respond to the foreclosure crisis, but grantees encountered important barriers to addressing mortgage foreclosures. They faced multiple unanticipated obstacles to acquiring foreclosures,

either as preforeclosure short sales[33] or from bank inventories (REOs), and employed a large arsenal of strategies to help them obtain properties for NSP2.

Acquiring short sales, foreclosures, or abandoned properties presents unique difficulties compared with nondistressed transactions. Short sales often have long timelines to closing because a homeowner, bank, and prospective buyer must negotiate a price together. To avert a foreclosure, a bank may agree to a short sale of property where it accepts a price lower than the outstanding mortgage balance. Banks calculate for each property what price reduction they will accept, because a short sale is less costly than carrying out a foreclosure. A minority of grantees (7) pursued short sales with varying degrees of success. Between the additional time banks took to evaluate short sale offers and the time added by NSP environmental reviews and appraisals, the timeline to purchasing short sales was prohibitive for the spending deadline-driven NSP2.

Delays were especially notable at the beginning of the grant period, with 1 grantee estimating that banks in its Florida market took 45 to 60 days to accept or reject short sale offers. Other difficulties were the delays on the grantee's side. For example, nonprofit organizations reported that they had to obtain environmental reviews through HUD and that this process was lengthy. In addition, short sales may be occupied by homeowners or tenants that have legal rights to remain in the property for 90 days, which delayed the potential start of rehabilitation. A few grantees had more positive outlooks on short sales. A grantee in Los Angeles County found that later in the grant, the attorneys general settlement had the effect of encouraging banks to do short sales rather than foreclosures or vacant properties. In Cook County, a grantee felt that acquiring short sales would reduce its rehabilitation costs: "Working with banks on short sales in an attempt to get properties earlier in the process. The longer it takes to get possession of a property, usually, the higher the rehabilitation costs."

Foreclosed properties have to reach the conclusion of the foreclosure process, which varies by state from a few months to more than 2 years, with longer timelines in judicial foreclosure states that require all foreclosures to be approved by a judge. The properties also have to have clear titles, which can be complicated if the title has been transferred multiple times among mortgage servicers or not conveyed back to the bank that foreclosed. At the time NSP2 began, banks and servicers were acquiring or holding record numbers of foreclosures and were sometimes unable or unwilling to negotiate with grantees. Some grantees perceived that banks favored certain investors to the detriment of NSP grantees (3), had unrealistically high appraisal values (1 grantee), withheld properties from the market (2 grantees), were generally slow to respond (1 grantee), or were not willing to work with nonprofit organizations (1 grantee). The latter point on nonprofit organizations may again be referencing the additional processing time nonprofit grantees needed to obtain environmental reviews through HUD.

A BBSS grantee from California explained well the complex back and forth required to negotiate a foreclosure acquisition. Most banks prefer to close in 25 to 30 days, but if the appraisal is returned and the price has changed to 1 percent below the accepted price, the bank may delay the negotiations or stop altogether. For example, if a property has an accepted price of $100,000 and the appraised value is $99,000, the bank must decide whether it will adjust the price downward to meet the NSP discount

[33] In April 2010, HUD changed the definitions of foreclosed and abandoned properties so that short sales were eligible transactions. See "NSP Policy Alert! Guidance on the Impact of New Definitions for NSP-Eligible Properties." April 2, 2010. https://www.onecpd.info/resources/documents/ImpactOfNewDefinitions.pdf.

requirement, which is not guaranteed. Alternatively, if the appraised value is $50,000, the bank may decide to hold onto the property rather than take a loss on it. Other properties were approved for purchase but lost by the grantee because the seller selected a cash investor. In sum, this grantee estimated that about 5 percent of properties it approved did not close escrow because the process took too long.

Further, abandoned properties may have clouded titles with multiple entities—for example, a previous owner and one or more lien holders—laying claim to the property. These issues, which are not common in standard real estate transactions, sometimes meant that grantees learned that properties were not actually available after spending resources pursuing their acquisition.

Accordingly, property acquisition was one of the most challenging tasks grantees faced, reported by 31 of 34 grantees. The acquisition and rehabilitation activity was designed to allow grantees to purchase properties from what was expected to be an ample supply of foreclosed or abandoned properties, given the high foreclosure risk scores of the tracts where grantees worked. Nearly one-half of grantees (16) found there was simply less inventory than anticipated. On one hand, some grantees were in judicial foreclosure states with long timelines to complete the foreclosure process, which slows the pace at which properties become part of the inventory for potential NSP2 acquisition. Others believed that banks and federal entities were holding foreclosures off the market to avoid flooding the market and further depressing prices. Finally, as the robosigning scandal broke in late 2010—just as grantees were starting to acquire properties—some banks halted foreclosure proceedings, further restricting the supply for NSP2 grantees.[34]

Most commonly, grantees (21) found they had trouble acquiring foreclosures because of the competition they faced investors when investors returned to the market in the large shares documented in Section 4.1. All NSP2 grantees were required to obtain at least a 1-percent discount on a property's asking price, which put them at a disadvantage in markets where investors had returned, often paying in cash and sometimes paying over asking price.[35] This problem was acute in BBSS markets, where 14 out of 15 grantees cited this difficulty. This was not cited as frequently by grantees in L/D markets, perhaps because despite high shares of investor activity, overall sales were low, leaving a large inventory of properties available.

Grantees had different perspectives about investor activity. Some wanted to concentrate their efforts only where private buyers were not interested in investing, noting that the market was already "stable" if it had this level of private market activity. Others focused on the practical difficulty of acquiring properties for NSP2 in an environment with a lot of investor interest. Still other grantees viewed investors negatively, believing that investors were taking opportunities from potential owner-occupants, especially in high-cost BBSS areas. They thought investor-owned properties would not contribute to neighborhood stabilization to the same extent that owner occupant purchases would.

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[34] In October 2010, it was revealed that several mortgage servicers had been approving foreclosures en masse without reviews to ensure the facts of the foreclosure filing were correct. The federal and state attorneys general of 49 states settled a class action suit with Ally/GMAC, Bank of America, Citi, JPMorgan Chase, and Wells Fargo for $25 billion for fraudulent and abusive foreclosure practices.

[35] The 1 percent discount rule was an early change HUD made, down from an original required discount of 15 percent. *Federal Register*, June 19, 2009, vol. 74, no. 117, p. 29225.

Nearly one-third of our sample of grantees (11) had difficulty with acquisitions, because desired properties had clouded titles, which could have resulted from poor recordkeeping or fraudulent foreclosure practices or, in the case of tax-foreclosed properties, multiple parties having claim to a property. The effects of clouded titles usually meant a grantee backed out of acquiring a desired property or had to delay the project for up to up to 6 months while the grantee and sellers resolved title issues.

Nearly one-half of grantees (16) felt that other NSP and federal regulations, such as the prepurchase environmental review and general long timeline for approval, also put them at a competitive disadvantage compared with investors who could close sales more quickly.

For most of these grantees (15), including one-half of the BBSS grantees, grantees believed these challenges resulted in having to pay more than they anticipated to acquire available properties.

4.6.2 Timing of Neighborhood Stabilization Program 2 Activities

In site visits from June to August 2013—after the NSP2 deadline—we asked grantees about their experience working within the NSP2's grant timelines. The majority of grantees (22) reported that the grant timeline was challenging to meet, especially the expenditure deadlines. This experience spanned market types; within each market type except for SG, more than 60 percent of the grantees reported timeline-related obstacles. Despite this, the large majority of grantees were generally able to meet expenditure deadlines, using strategies such as obtaining technical assistance, revising their mix of activities, and changing their property acquisition strategies.

Grantees provided several reasons for difficulty meeting the NSP2 expenditure deadlines. For one thing, 5 grantees reported that they were unable to start implementing the grant until they received further guidance from HUD or their lead organization regarding changing NSP2 property eligibility guidelines or until they gained access to the DRGR system that grantees must use to report activities and draw down funds. For example, a grantee in Washington, D.C., claimed that it had to delay its property acquisitions during the first year of the grant because it was waiting for clarifications regarding acquisition requirements, especially with multifamily properties. The grantee attributed having to push back its acquisition timeline to problems meeting its grant deadlines. A grantee in Los Angeles County reported that it could not access its NSP2 funds through DRGR for up to 6 months in the first year of the grant. Obstacles like these delayed some grantees for up 8 months in the first year of the grant.

Noted in previous sections, some grantees pursued more new construction and multifamily projects under the redevelopment activity than originally planned, because the larger project sizes allowed them to spend money more quickly than when they pursued mostly single-family rehabilitation projects.

As discussed earlier, most grantees had difficulty acquiring properties, which delayed expenditures and made it more challenging than originally expected for some grantees to implement their programs within the NSP2 timelines. The most common strategy grantees used in response to this housing market-related obstacle was to prioritize activities they could complete in a timely manner. This involved identifying properties that were available for an eligible activity or adding census tracts that had available, eligible properties. For example, some grantees targeted properties that were already in their inventory or invested in ongoing projects. A Palm Beach County grantee explained that an important property criterion was the likelihood that a project would contribute to the grantee meeting its 50-percent spending goal, so it specifically identified projects that were far along in the revitalization process. Similarly, a Pulaski County grantee avoided historic homes within the target area because of the additional time required to acquire and rehabilitate these properties. The cumulative effect of these deadline-driven decisions may

have been to direct NSP2 efforts toward feasible projects over higher need ones. A grantee powerfully summarized the broad-reaching effect of the spending deadline: "Because of the deadline, the cities had to pick the low hanging fruit and were forced to . . . not focus on the really, really hard to serve, because we wouldn't have had enough time."

As a counterpoint, at least 8 grantees appreciated the necessity and benefits of the timelines. These grantees believed that the tight timelines encouraged them to choose effective partners that had the capacity to implement the program quickly and motivated grantees to move quickly to spend stimulus funds in communities of need.

4.6.3 Higher Rehabilitation Costs Than Expected

Most grantees (28) faced challenges with properties needing more rehabilitation than anticipated. In many cases (for 13 grantees), this led to higher costs than expected. In some cases, grantees were able to identify the extent of required repairs before acquiring properties and avoid those that would be cost prohibitive or infeasible. Other grantees, though, faced unexpected rehabilitation costs after they had acquired properties, including all BS and SG grantees, nearly three-fourths of BBSS grantees (11 of 15), most L/D market grantees (7 of 8), and one-half of the BBEC grantees (4 of 8). Sometimes, this was a widespread problem in their program, such as unexpectedly being forced by investor competition to acquire only properties requiring gut rehabilitation. Other grantees realized that they would have higher costs only after they opened up walls on specific properties or found, after environmental review, that asbestos and lead were much more prevalent than they expected. A grantee rehabilitating historic homes noted that, "*Every* surface was lead paint because it was the best of the best at the time. That delayed us at least 30 days [per property]." Requirements to pay prevailing wages—either Davis-Bacon or local standards—were identified by 6 grantees as adding to the costs of rehabilitation.

Many (16) grantees found that NSP2 properties became the targets of theft and vandalism. This often-unanticipated problem sometimes increased costs of the acquisition and rehabilitation activity, as well. Theft of pipes, appliances, air conditioners, and more drove developers to add sometimes costly security measures they had not planned for in addition to having to replace stolen items. Grantees used a number of strategies to deal with security of NSP2 properties, including delaying installation of appliances; cabinetry; and heating, ventilation, and air conditioning until sale; putting cages on air conditioning units; installing alarm systems and metal doors; using bars on windows; using guards and overnight sleepers; boarding up doors and windows; using electronic key fobs instead of manual keys; using guard dogs; using community watch groups; and increasing police patrols. Several grantees felt they could not publicize their NSP2 properties because doing so would simply advertise to vandals and thieves.

Grantees used a number of coping strategies to respond to higher than expected costs for rehabilitations. In at least 3 cases, grantees simply completed fewer units than anticipated. Other grantees had to use program income that they thought would be available for other uses to reach their unit targets. Among BBSS grantees, 2 scaled back their ambitious rehabilitation standards to more modest ones. Similarly, 2 grantees initially planned to meet standards of energy efficiency but decided that these costs were too high. Only 1 grantee reported having developers that overestimated rehabilitation costs to insure against running into budget problems if they had cost overruns. In two of the SG markets, grantees purposefully sought a mix of gut and light rehabilitation, so that the light-rehabilitation properties could even out the costs of the gut-rehabilitation projects.

4.6.4 Other Activity-Related Challenges

A few grantees reported having difficulty obtaining necessary permits from local offices or with state historic preservation office (SHPO) requirements (5 and 6 grantees, respectively), although grantees found these challenging in other ways, as well. Historic designations/SHPOs were challenging for less than one-half of grantees (13), including those in BBSSs (6), BS (2), L/D (4), and SG (1) markets. Interestingly, historical reviews were not a problem in the BBEC market, which is generally characterized by older housing stock. Among the 13 grantees that faced challenges with SHPOs, the types of difficulties included delays in being able to close on properties, sometimes leading grantees to lose out to investors (2 grantees). At least 4 grantees avoided working with historic properties because of the concern that the timeline for obtaining approval for rehabilitation was too long. Almost one-third of grantees overall (12) encountered challenges with the environmental review process. Nonprofit grantees, however, much more frequently reported difficulties. Two-thirds of the nonprofit grantees in our sample faced barriers with environmental reviews, while only one of every five public agencies reported this review as a barrier. Nonprofit grantees were required to obtain environmental reviews through HUD, while public agencies were able to coordinate the reviews themselves, perhaps explaining the delays and additional challenges nonprofit organizations reported with this phase of work. Although experienced by a minority of grantees, these obstacles were challenging for grantees that faced them. The effect of each one was to delay the timeline for each project at the risk of lowering the total number of projects a grantee could complete.

Grantees also encountered a range of difficulties providing financing, whether as standalone financing (Activity A) or as homebuyer assistance on their NSP properties. These included challenges finding qualified homebuyers and getting them approved under the strict underwriting conditions at the time and homeowners only being able to qualify for mortgages on non-NSP2 properties requiring significant repairs. Other responses to challenges to finding qualified homebuyers included changing activities, renting NSP2 properties instead of selling them, and directly offering first mortgage financing to borrowers.

By comparison, fewer grantees reported difficulties with the land banking and demolition activities, perhaps in part because the fewest grantees pursued them. Grantees engaged in land banking reported difficulty with HUD's guidance on definitions for land banking and for creating a disposition plan that complied with the required 10-year time horizon to conclude activities. Grantees ultimately reported overcoming the definitional problems by working with HUD. One challenge that remained, however, was for grantees unsure of how to pay for ongoing maintenance of land banked properties after all NSP2 funds were expended. Few grantees reported challenges with demolition; of those that did so, the majority (80 percent) were in L/D markets, where this was a more common activity.

4.6.5 Challenges Related to Grantee Capacity

Although most grantees reported positive experiences with gaining capacity because of NSP2, a significant number of grantees (13), both public and nonprofit, reported NSP2 straining their capacity in some way. One grantee summarized this common situation as being adequately staffed with sufficient *skills* to carry out all NSP2 tasks but not for the *amount of work* required to fully implement NSP2. Under those conditions, the grantee's success required dedicated people working extra hours to ensure that everything was done.

Of the 24 grantees administering more than one round of NSP funding, 6 attributed the strain specifically to the difficulty of administering multiple rounds of NSP funding simultaneously. For example, a grantee in the BBSS market felt that overlapping NSP1, NSP2, and NSP3 deadlines made administering the

grants extremely challenging. The grantee found the amount of documentation and reporting each grant required burdensome, especially for its limited number of staff members. Having to complete these administrative tasks for three overlapping but slightly different grants compounded the obstacle. For a second BBSS market grantee, staffing challenges that caused delays in implementing NSP1 carried over to delays in implementing NSP2.

Another 5 grantees were working in municipalities under severe budget constraints and were not able to increase their staff sufficiently even with NSP2 grant funds. Many recipient cities, having been hard hit by the foreclosure and economic crisis, were under hiring freezes or had laid off large numbers of city employees, including in departments implementing NSP2. Most often, grantees relied on technical assistance to supplement their internal capacity (5 grantees). In the case of one consortium, the lead grantee was able to provide its understaffed consortium members with technical assistance providers as temporary staff for the duration of NSP2. Some grantees, however, did not feel that the layoffs made before or during NSP2 negatively affected their ability to conduct the program. Reports came from 3 grantees that staff turnover—albeit not layoffs—improved their NSP2 performance by bringing in staff members who were more adept at federal compliance or with meeting an organization's affordable housing mission.

4.6.6 Challenges Related to Partnerships

Although most grantees believed that partnerships were successful, slightly over 40 percent (14) of the grantees that had partnerships also encountered several challenges when working with other organizations. The most common obstacle that lead organizations faced was discovering that a partner organization did not have the capacity to fulfill originally delegated responsibilities. For example, a BBSS grantee reported that a partner organization that was allocated a significant amount of leveraged funds closed. Grantees overcame this challenge by having other partner organizations take on more responsibility than originally planned to compensate for the underperforming partner organization.

Another challenge that some partner organizations reported was that lead organizations' stringent monitoring policies hindered progress and created tension between partners. For example, a Los Angeles County partner organization explained that the lead grantee's rigid purchasing approval process slowed down implementation. Later, the lead grantee gave partner organizations greater freedom to make unilateral purchasing decisions, which reduced inefficiencies and signaled greater trust of the partner organizations. Similar to this grantee's experience, most relationships and implementation processes improved after lead grantees adopted a more streamlined approval and monitoring structure that gave partner organizations a level of decisionmaking power.

New partnerships sometimes faced the additional burden of having to develop new processes and communication channels as well as trust between partners. A Miami-Dade County grantee revealed that its implementation process had been slower than anticipated because the partners had to start from scratch; there was no infrastructure or trust in place for the organizations to leverage at the beginning of the grant period. Although new grantees eventually developed the communication, support, and monitoring structures necessary to successfully implement NSP2 with new partners, this process was sometimes an additional obstacle hindering the first stages of implementation.

Grantees encountered obstacles from myriad directions in implementing their NSP2 programs. Conditions in the real estate market and of the properties themselves increased costs and timelines for most grantees in our sample. Program regulations, such as the spending deadline, discount requirement, and prepurchase reviews, presented further challenges. Internally, grantees faced challenges with the competing demands

on their staff time and with establishing smooth partnerships. Grantees did find compensating strategies to work with and usually overcome these challenges. The next section explores grantees' experiences, tools, and strategies that helped them succeed.

4.7 Factors That Facilitated Implementation

Although grantees faced a number of challenges in implementing NSP2, there were also factors that facilitated their success. These included experience with NSP1, preexisting staff capacity, training and technical assistance, use of innovative technology tools, partnerships, and the flexibility of NSP2.

4.7.1 Neighborhood Stabilization Program 1 Experience

Of the NSP2 grantees in our sample, 22 (65 percent) had received NSP1 grants. All but 1 reported that their implementation of NSP2 was influenced by their NSP1 experience in some way; in some cases, the influences were both positive and negative. Lack of staff capacity to administer both NSP1 and NSP2 sometimes posed challenges, but grantees' capacity was sometimes built by their NSP1 work, as well. NSP2 strategy, partnerships, and implementation of specific activities were also aided in some ways by grantees' NSP1 work.

Of the 22 grantees that had NSP1 grants, 6 reported that the overlapping NSP grants created strains on staff capacity. These grantees reported that the tight timelines for NSP2 were exacerbated when grantees were also doing NSP1 work. A grantee said one of its challenges was "getting programs up and running when all three partners were busy with NSP1." In one case, a grantee experienced delays in implementing NSP1, and this delay carried over to the implementation of its NSP2 grant. Another grantee with NSP1, 2, and 3 grants said that administering the overlapping grants were challenging, and part of the reason for this was the differences between the programs. This grantee felt that greater consistency between the programs would have benefited grantees.

Most of these grantees also said that their NSP1 grant influenced their NSP2 implementation in some positive way, however; 5 grantees reported that NSP1 built their capacity in some way that was useful for NSP2. For example, 2 grantees established a new organization entirely dedicated to implementing NSP1 and used the same organization to implement NSP2. These grantees said this new organization was able to establish processes that allowed them to implement both programs more efficiently than the grantee could have.

Among other benefits, grantees reported that they learned from their NSP1 experience and sometimes built on their NSP1 work in carrying out NSP2. For example, some grantees had created a partnership during their NSP1 work that was useful in their NSP2 implementation or had gained familiarity with NSP1 guidelines and reporting requirements that was helpful for NSP2. For example, a grantee reported that its NSP1 experience allowed it to "hit the ground running" on NSP2.

In some cases, benefits of NSP1 experience that carried over to NSP2 were fairly limited. Some grantees (4) stated that with more time between the implementation of NSP1 and NSP2, they would have learned more from their NSP1 experience and been able to apply more lessons to NSP2.

4.7.2 Training and Technical Assistance

HUD provided a high level of technical assistance for NSP2 grantees, including webinars, the NSP2 Web site, and $50 million in contract technical assistance through independent firms. Technical assistance providers were available to assist grantees with overall program design, meeting expenditure deadlines,

and compliance with regulations such as Section 3, Davis-Bacon laws on prevailing wages, environmental reviews, income certification, and eligible activities. Most grantees (33) received some form of training or technical assistance directly from HUD or its contracted technical assistance providers. Overall, grantees enthusiastically praised HUD for its webinars, for direct assistance from HUD staff, and for features on the NSP2 Web site (22 grantees). Several grantees that had worked with HUD extensively in the past noted that the technical assistance and webinars were, as one put it, "excellent and more expansive than any other assistance provided before by HUD." Grantees were particularly pleased with the "awesome" online resources, which in some cases provided information that allowed grantees to move forward on their programs without requiring formal technical assistance.

In other cases, HUD referred grantees to technical assistance to prevent trouble with a grant, even when a grantee did not perceive a need for a technical assistance provider's intervention. For example, HUD urged one grantee to use the funded technical assistance in fall 2011 as the grantee approached its 50-percent expenditure deadline. What began as crisis management to help the grantee meet the expenditure deadline evolved into more long-term and systematic changes and planning. This grantee, along with at least 5 others, stated that technical assistance by HUD's contracted providers was absolutely critical to its success in refining its program.

Grantees were cognizant of differences between training provided directly by HUD staff and technical assistance through third party organizations. When there was a discrepancy between a grantee's experiences with the two groups, it was more likely to report positive experiences with HUD staff and more difficulty obtaining what it perceived to be correct information from third party providers, although that may reflect grantees' preference to receive information directly from the source. In one region, however, the technical assistance providers were instrumental in helping grantees improve their relationship with HUD field staff.

For the remaining grantees, trainings and technical assistance were somewhat helpful (9), unhelpful, or irrelevant (6).[36] Among their concerns were that they occasionally perceived a technical assistance provider to be giving inaccurate information or, more often, that the information arrived too late: "It's not like HUD had the answers to our questions [early on] when we were asking them. . . . They got much, much better over the course of the grant of having answers and telling us things. That One CPD resource and Ask a Question regional and state resources, the webinars—all that stuff is terrific, but we needed it sooner."

Members of consortiums also relied on technical assistance from their lead grantees (18), which was almost universally praised. Training and technical assistance by lead grantees was apparently able to be well tailored to the specific needs of consortium members, for example, by focusing on relevant state or local law, on databases in use across the consortium, or on rehabilitation strategies most appropriate to local market conditions. In several large consortiums, lead grantees brought all the organizations together for peer-to-peer learning about common challenges, best practices in the local market, data systems, or regulations. One nonprofit was able to connect this way to another nonprofit developing cooperative housing. Another lead grantee provided extensive ongoing technical assistance to its subrecipients, including embedding technical assistance providers in the subrecipient's offices to significantly increase

[36] A few grantees reported their support to be both very and not at all helpful. Sometimes it varied by issue, and at other times it was a distinction between HUD-provided trainings and technical assistance providers' guidance.

capacity in the most shorthanded and underresourced organizations of the consortium. In those instances, the permanent staff were extremely grateful to have "very informed, autonomous staff that can follow through" with administering NSP2.

4.7.3 Use of Innovative Technology

On the whole, grantees did not report that extensive use of innovative technological tools was crucial for their programs' design or success. One-fifth of grantees (7) reported that GIS (including PolicyMap) was useful or critical to their programs, most often in the early stages of the program, from application to selection of target areas. Some grantees continued to monitor target areas with GIS throughout implementation to track progress in target tracts and overall city trends. For example, 1 grantee was able to partner with a local university that had experts in GIS develop extensive spatial statistics on the target areas. Other grantees had inhouse capability that enabled them to "visualize impacts and determine where the most effective improvements can be made." Another grantee used its GIS maps to make a case to HUD that market conditions had changed since the last census data, making it necessary to expand the target area. Grantees that did not use these tools relied on other resources and knowledge to identify target areas and properties, such as extensive local knowledge of neighborhoods, driving areas with high foreclosures, and the multiple listing service.

Several grantees (4) used tax assessor databases to see tax-assessed values, property characteristics, and tax foreclosure status. A few grantees (3) noted that they would not have been able to carry out their projects without acquiring or creating project management software, including the Community Central database and spec-writing software. It seems likely that more grantees made use of GIS, spec-writing software, databases, and other technology for their programs but did not consider them transformational or above and beyond their normal procedures.

4.7.4 Successful Partnerships

Grantees overwhelmingly reported that working with partner organizations facilitated their implementation of NSP2. More specifically, partnerships expanded grantees' staff, expertise, and financial resources, which enabled grantees to take on larger scale projects and increased grantees' likelihood of achieving intended outcomes. For example, a BBSS grantee explained that working with partners helped it complete its projects on time because its partners were already established in the targeted neighborhoods, which greatly helped with marketing NSP2 to community members. This section highlights key traits commonly found in successful NSP2 partnerships.

Early on, the partnership established clearly defined roles, responsibilities, and expectations. This step built mutual trust that each organization was committed to the agreed-upon implementation processes and outcome goals and provided a clear roadmap for the lead organization to gauge the grantees' progress. A Los Angeles County grantee applauded the consortium agreement that clarified roles and responsibilities. The organization explained that the agreement removed potential conflicts in assigning properties to different partner organizations. This step also fostered shared goals for NSP2 implementation and organizations' intended impacts. An L/D market grantee noted that a close working relationship and shared vision among partner organizations was the biggest strength of the county's implementation.

Collaborative relationships drew on the strengths of each partner organization, including prior experience with completing NSP1 activities and working within communities. As discussed above, one of the benefits of the NSP2 partnerships was the added expertise and experience contributed by each partner. An SG market grantee's formal relationships assigned organizations NSP2-eligible activities and target

neighborhoods based on organizations' expertise and strengths. Several partner organizations believed that this delineation contributed to the productivity of the grantee.

The lead organizations' monitoring and approval processes balanced effective oversight and efficiency. Partners reported that it was helpful when lead organizations actively monitored partner organizations' overall progress and made proactive adjustments to ensure the grantee accomplished its NSP2 goals and intended neighborhood impacts. For example, staff of a Pulaski County grantee believed that monitoring was one of its primary strengths because the lead organization recognized when to make program adjustments such as reallocating units and undertaking new NSP2 activities to ensure the grantee met its NSP2 goals and objectives. At the same time, as discussed previously, it was equally important that the monitoring process was not so stringent or complicated that it added burden to the partner grantees or slowed down the implementation process. This took the form of either setting up an efficient approval process or giving partner organizations enough autonomy to make necessary implementation decisions internally.

The lead organization was a resource for program-related information and served as the liaison to HUD. Many grantees praised lead organizations help navigating the complexities of NSP2 guidelines. For example, 1 SG market grantee cited its NSP2 coordinator's resourcefulness as the primary reason for not requiring technical assistance.

Large consortiums facilitated the "cross-pollination of knowledge" across participating organizations. Many local organizations greatly benefited from learning from the experiences of other organizations working throughout the country. Grantees supported peer learning through regularly scheduled consortium meetings that allowed members to provide support and technical assistance to each other. Other strategies included arranging conferences and conference calls on specific program-related topics, such as pricing and bidding.

Organizations had previous experience working together on NSP1 or other community development efforts and had confidence in each other's capabilities. Grantees that previously worked with partner organizations were able to "hit the ground running" because they were already familiar with the operational processes, key staff, nuances, and strengths of each organization.

4.7.5 Program Flexibility

Grantees' implementation benefited from flexibility at four levels. First, the NSP framework offers a broad set of tools that grantees could use to autonomously design programs that fit their local community's needs. Second, as discussed in Section 5.2, most grantees shifted their program designs. One of the most important lessons for a Maricopa County grantee was that "local needs" were not stable throughout the program, so their NSP2 response had to adapt, as well: "What worked at 6 months did not work at 12 months, and what worked at 12 months does not work now." An important reason this worked was, third, that grantees found that HUD staff were responsive when grantees needed to alter their programs or amend their goals. Finally, grantees found that because program guidelines continued to be updated and market conditions changed dramatically in some places, it was a major asset to have adaptable staff members willing to change their approaches.

4.8 Grantees' Reflections on NSP2 As a Neighborhood Stabilization Program

Like other rounds of NSP funding, NSP2 served as a stimulus program for the post-2008 recession, seeking to address the immediate effects of the foreclosure crisis and assuage further neighborhood

decline. Grantees also understood NSP2 in relation to HUD's longstanding goals and programs for community development. This section, therefore, presents grantees' high-level reflections on the scale of NSP2 relative to the problems it sought to address and lessons learned from NSP2 that may positively influence future programs.

4.8.1 Grantees' Perceptions About the Scale of the NSP2 Intervention

Despite the small number of properties that could be treated using the NSP2 grant, most grantees saw the funding as making a real impact. Many also said they believed that more investment was necessary to truly stabilize neighborhoods. The most common response was that the grant made an impact, but they could have used more funding (19 grantees). A grantee said, "20 million dollars . . . there was a volume there that you could get really excited about it because you knew that it wasn't going to be spitting in the ocean, so to speak."

Only 3 grantees thought their grant was the right amount for the desired neighborhood impacts, whereas 11 grantees said the award was too small relative to the size of the problem. A grantee said, "A $169 million grant is not the cure all, not the silver bullet to solve all the problems. The neighborhoods still have unemployment, crime, and school closures keeping them unstable." Grantees working in the same county did not necessarily agree about whether the grant amount was sufficient to stabilize the neighborhoods where they were working. It may be that they were targeting different neighborhoods with different levels of need or that some individuals were simply more optimistic in their response about the impact of NSP2.

As discussed previously, most grantees targeted neighborhoods that had some underlying strength to build on instead of the worst neighborhoods. In fact, 1 grantee explicitly said it took this approach because stabilizing the worst neighborhoods required a bigger investment than it could make with the NSP2 funds available.

4.8.2 Grantees' Suggestions for Future Neighborhood Stabilization Programs

Grantees almost unanimously felt that NSP2 was a success, and most grantees wished for more NSP2 funds to increase the program's effect on stabilizing targeted neighborhoods. Many grantees noted that the program was designed well overall because of such factors as its narrow focus on foreclosed and abandoned properties, the range of tools it offered, and its ability to support residents earning 80 percent to 120 percent of AMI, an income range not usually reached by federal housing programs. Grantees suggested minor changes to the federal program as it existed and larger changes for future interventions.

Grantees suggested several modifications related to the grant timeline they believed could have improved their programs' effectiveness. These included an additional year for the overall grant period (seven grantees), dedicated time for strategic planning (4 grantees), and measuring progress by units completed or funds obligated rather than funds spent (4 grantees). Other programmatic suggestions based on the NSP2 experience were to have consistent policies in place for the duration of the grant to avoid the experience more than a grantee described as "building the plane while we fly it."

Although grantees as a whole were pleased with NPS2, when site visitors asked what additional interventions are necessary for neighborhood stabilization, a large majority of grantees (27) generated ideas they believed would increase the effectiveness of future initiatives.

As discussed in Section 5.2, grantees mainly worked in neighborhoods with multifaceted problems—unemployment, crime, isolation from services, and poor schools—in addition to housing market

instability. Accordingly, most grantees suggested interventions that expanded the scope beyond existing NSP2 tools. One set of recommendations focused on additional physical investments, while another set of proposals centered on holistic community development. The most common suggestion for physical investments, made by 13 grantees, was to *allow development of commercial properties* that would expand residents' commerce and employment opportunities. A grantee endorsing this strategy noted that "a neighborhood is comprised not just of rooftops. A lot of what is dilapidated now are those corner stores."

A few grantees discussed the importance of working with *existing homeowners* to support them with home repair (3 grantees)—like an expanded HOME program—and with foreclosure prevention (1 grantee). Many grantees (10) also suggested that minor *infrastructure improvements* would increase the appeal of NSP2-treated properties and improve quality of life for neighborhood residents. Examples of such improvements include sidewalks, curbs, and gutters outside NSP homes; street repair; additional streetlights; and cleanups and other improvements to neighborhood parks.

Building on the desire for more commercial development, many grantees (12) believed that adding economic development components to spur local jobs and private investment and to support local businesses would help create neighborhoodwide change. Among the projected benefits were increased retail options, including healthy grocery stores, access to mainstream financial institutions, and improved access to health care. A notable number of grantees (9) felt that improving local schools was important for solidifying neighborhood stabilization. A few grantees noted that adult education and community access to resources, including books and high-speed Internet access, are important interventions for the community as a whole. The broad set of suggestions proffered by NSP2 grantees illustrates their sensitivity to the social and economic context of their programs and dedication to work that serves their communities as a whole.

4.9 Conclusion

With the objective of answering the broad question, "How did grantees implement NSP2?" this analysis sought to explain why grantees selected and pursued specific activities and to examine the factors that influenced grantees' ability to achieve their desired outcomes. This concluding section highlights the key lessons that were presented throughout the previous sections of this chapter.

4.9.1 NSP2 Program Design

NSP2 was implemented in very different market environments using very different approaches. Although all grantees had access to the same five activities, they were used in different combinations, with diverse organizational and partnership structures and with varying degrees of success according to local market conditions and other factors. There were few features of NSP2 implementation that were universal across grantees. Instead, key features of grantees' program design related to the neighborhoods they targeted, their specific approaches to conducting NSP2 activities and the mix of these activities, the tenure of the housing they intended to produce (homeownership versus rental), and challenges they encountered implementing their original plans. Leveraging and program income also had some role in grantees' program design and execution.

The prevailing consideration for grantees was to coordinate their NSP2 investments with other community development activities (Section 4.2). Neighborhood conditions in NSP2 target areas were distressed but varied. Grantees as often reported that they were working in areas with longstanding revitalization needs as in neighborhoods with underlying strengths.

Grantees initially chose a mix of activities based on expected neighborhood and real estate market conditions (Section 4.3). Grantees felt more comfortable and had greater success providing homeownership opportunities by purchasing, rehabilitating, and selling properties than simply by providing standalone financing for properties in need of rehabilitation. Grantees did not feel comfortable burdening buyers with homes that might have high-cost needs in the near future. Many grantees used the redevelopment activity to create rental units for households earning less than 50 percent AMI as part of NSP2's mandate that 25 percent of the program benefit this population. A handful of grantees chose to rehabilitate multifamily properties to serve tenants with special needs.

Grantees' activities were not static, however—they often changed from one activity to another in response to changing market conditions or unanticipated obstacles in implementation. The three most common changes that grantees adopted were eliminating the financing activity, shifting their acquisition focus from single-family properties to multifamily properties, and shifting their acquisition focus away from foreclosed properties.

Grantees also managed the financial aspects of their grants differently. They seemed to place varying degrees of emphasis on achieving specific leveraging targets. Leverage funding did not always materialize in the amounts expected. The amount of program income earned varied based on the type of activity and the grantee's approach to the activity. Acquisition and rehabilitation or redevelopment tended to produce the most program income, but within those activities, grantees reported that program income is lower on rental properties than for-sale properties. Grantees reported that they are using program income primarily to complete or extend their NSP2 work.

4.9.2 NSP2 Implementation

The two most significant challenges grantees faced in implementing NSP2 were acquiring foreclosures and working within the NSP2 timeline. Nearly all grantees said they faced challenges acquiring properties in the originally targeted tracts, because there were fewer than expected foreclosures available, because of competition with investors, or in one case because the area targeted was primarily industrial. The majority of grantees reported that the grant timeline, especially the expenditure deadlines, was challenging to meet.

Challenges to acquiring foreclosures had several consequences. First, most grantees reported higher rehabilitation costs than they expected. A key reason for this was that competition from investors for foreclosures forced them to acquire the most dilapidated properties. Second, although most grantees intended to concentrate activities within their target neighborhoods, the majority of these grantees across the five market types were not able to concentrate activities at the level they desired. As a consequence of these challenges, one-half of the grantees became more opportunistic in their acquisitions, loosening property selection criteria and buying anything they could. As discussed, another response to challenges was to shift the mix of activities or property types—for example, from a single-family to a multifamily focus.

In addition to these obstacles, grantees also encountered challenges related to their own or their partners' capacity. A significant number of grantees reported that they were not adequately staffed for the amount of work required to fully implement NSP2. Similarly, the most common obstacle that lead organizations faced in working with partners was discovering that a partner organization did not have the capacity to fulfill originally delegated responsibilities.

Although grantees faced these challenges in their NSP2 work, grantees reported that a number of factors facilitated their work, as well. These included the dedication, flexibility, and skill of their own staff; their

partnerships; the technical assistance provided by HUD; and the flexibility of NSP2. Specifically, partnerships expanded grantees' staff, expertise, and financial resources, which enabled grantees to take on larger scale projects and increased grantees' likelihood of achieving intended outcomes. Overall, grantees enthusiastically praised HUD for its webinars, direct assistance from HUD staff, and features on the NSP2 Web site; members of consortia also benefited from technical assistance by their lead grantees.

Despite the small number of properties that could be treated using the NSP2 grant, most grantees saw the funding as making a real impact. Many also said they believed that more investment was necessary to truly stabilize neighborhoods.

5. NSP2 Investments

This chapter starts with a brief descriptive analysis of all 56 Neighborhood Stabilization Program 2 grantees and a comparison of how the grantees included in the study sample differ from NSP2 grantees as a whole. The remainder of the chapter describes the accomplishments of NSP2 grantees in the study's sample sites. We focus on the NSP2-supported activities completed over the duration of the program as well as the timing and costs of those accomplishments. This section of the chapter begins by detailing the number of properties treated with NSP2 activities by activity type. The types of activities implemented by grantees varied greatly depending on local housing market conditions, making NSP2 unique in each location as opposed to a program implemented uniformly in markets around the country.

The chapter then provides information about the timing of NSP2 activities, focusing mostly on the timing of property acquisitions. Timing of property acquisition is highlighted in particular for two reasons. First, acquiring properties was the critical first step in executing the subsequent rehabilitation and redevelopment activities, the two activities grantees were most likely to do. Second, as discussed in Chapter 4, some grantees faced unexpected difficulties in acquiring foreclosed properties, which stalled and prolonged their NSP2 implementations. Section 3 provides information describing the cost of NSP2 activities by market and activity type. Appendices B–1 through B–19 provide NSP2 data summaries for each county, including maps that show both where NSP2 activities occurred relative to the financial distress of each tract and the level of NSP2 investments.

5.1 Descriptive Analysis

Of the 482 applicants for the $1.93 billion in NSP2 funding, 56 were eventually selected through a competitive process that considered six rating factors, including need and market conditions, the applicants' demonstrated capacity, soundness of the grantees' described approach to using NSP2 funds, applicants' use of other funds as leverage and removal of substantial negative effects, inclusion of energy efficiency and sustainability in NSP2 plans, and expected neighborhood transformation and economic opportunity resulting from NSP2 activities.

Of these grantees, 28 worked in the 19 counties included in the study sample. This section describes some of the characteristics of all 56 grantees and compares them with the sample grantees to provide context for understanding the findings. Grantees working in sample counties were similar to all grantees in terms of the distribution of types of organization and partnership types. Sample grantees had larger NSP2 awards on average than other grantees, however, and intended to more highly concentrate NSP2 funds. Grantees were also selected for inclusion in the study in part based on their ability to provide the study team with property-level data. For these reasons, the NSP2 grantees included in the sample may have greater capacity than grantees generally and have been more likely to achieve intended outcomes.

5.1.1 Grantee Partnerships

Most grantees—roughly two-thirds—were led by a government organization and roughly one-third by a nonprofit organization. These proportions were similar for both sample grantees and all grantees. Only 1 grantee, not included in the study sample, was a joint venture. Most grantees were partnerships—89 percent of all grantees and 86 percent of sample grantees. Most of these were hierarchical in nature, in the form of a lead grantee with subrecipients. Collaborations, which still required one organization to act as lead grantee with ultimate responsibility for the NSP2 grant, were slightly more common among sample grantees than among grantees generally (39 percent compared with 32 percent; see Exhibit 5–1).

Exhibit 5–1: NSP2 Lead Grantee and Partner Organization Types

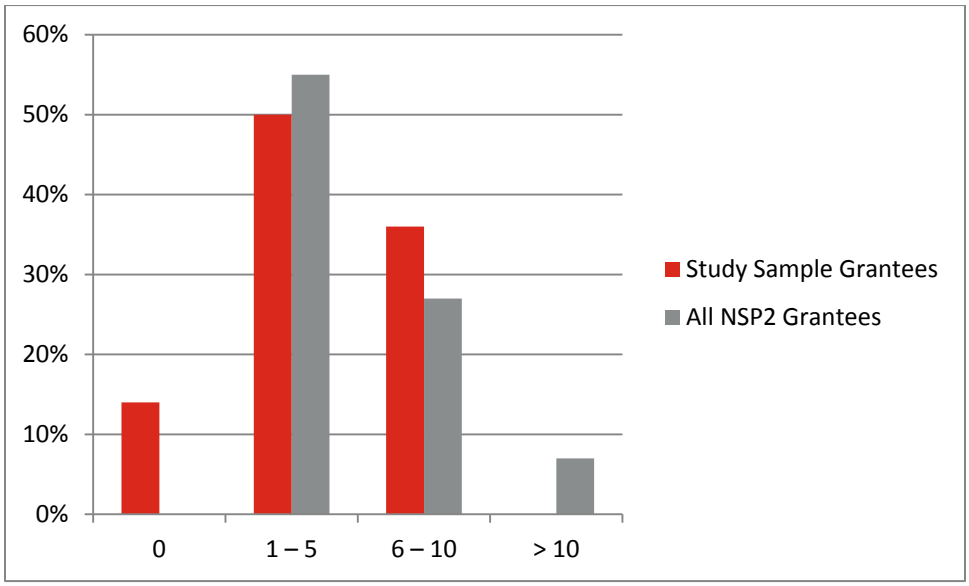
Grantee Characteristic	Study Sample Grantees (*N* = 28)	All NSP2 Grantees (*N* = 56)
Lead grantee organization type		
Government	68%	68%
Nonprofit	32%	30%
Joint venture	0%	2%
Partnership structure		
Collaboration	39%	32%
Subrecipients	46%	57%
No partners	14%	11%
Partner organization type		
Government	11%	16%
Nonprofit	18%	16%
For profit	4%	4%
N/A (no partners)	14%	11%
Multiple types	54%	54%

NSP2 = Neighborhood Stabilization Program 2.
Source: NSP2 applications.

Most grantees had multiple types of partners, most often a combination of nonprofit and government partners. Only 4 percent of both all grantees and sample grantees had only for-profit partners; having only government or only nonprofit partners was equally common.

Among grantees that had partners, grantees most commonly had from 1 to 5 partners (Exhibit 5–2). A sizeable share of grantees had 6 to 10 partners, and a few had more than 10 partners. Applicants had incentives to form partnerships, because they could help meet the U.S. Department of Housing and Urban Development's requirement that the grantee and its partners collectively have the capacity and experience to carry out the proposed NSP2 activities in the target geography. Partnerships allowed lead grantees without a history of work in specific activities to demonstrate the needed capacity and experience. In practice, it may be that grantees ultimately worked with fewer partners than were identified in their NSP2 grant applications. Several grantees reported during site visits that partners that had been intended to participate dropped out for some reason, perhaps because of a change in the activities being conducted or because the grant size was smaller than requested, resulting in a change of scope of the activities being conducted.

Exhibit 5–2: Number of Partner Organizations

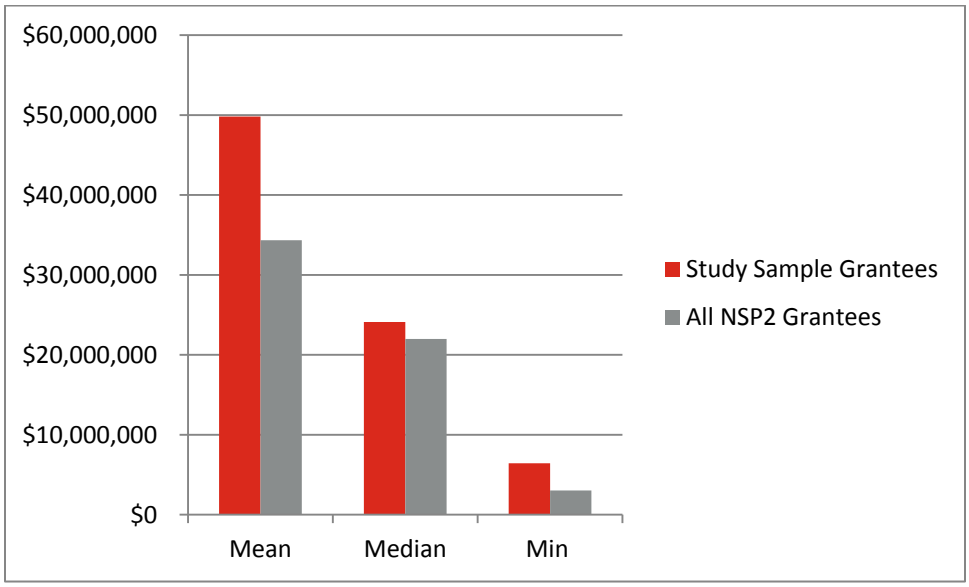


NSP2 = Neighborhood Stabilization Program 2.

5.1.2 NSP2 Awards

Sample grantees had larger NSP2 grants on average than all NSP2 grantees, with a mean grant size of roughly $50 million compared with $34 million (Exhibit 5–3). All nine of the grantees that had grants more than $50 million were included in the study sample. Similarly, as shown in Exhibit 5–4, sample grantees requested larger grants on average than all grantees, at about $65 million compared with $51 million. In total, sample grantees were awarded 72 percent of total NSP2 funds.

Exhibit 5–3: NSP2 Award Sizes



NSP2 = Neighborhood Stabilization Program 2.

Sample grantees were more successful than grantees generally in that they were somewhat more likely to get the amount of NSP2 funding requested in their application. On average, sample grantees received 78 percent of the amount requested compared with 70 percent of the amount requested for all grantees. Only one-fourth of sample grantees received less than half of the requested amount compared with more than one-third (36 percent) of all grantees. Assuming that the amount of the award granted reflected HUD's evaluation of grantees' ability to implement the NSP2 grant, this may indicate that sample grantees are not entirely representative of grantees as a whole but were judged to be somewhat more capable of implementing NSP2 and particularly larger and more complex programs.

Exhibit 5–4: Share of NSP2 Funding Request Awarded

	Study Sample Grantees (*N* = 28)	All NSP2 Grantees (*N* = 56)
Share of funding request awarded		
Mean	78%	70%
Median	99%	75%
Min.	15%	15%
Max.	100%	100%
Percentage of grantees by share of NSP2 funding request awarded		
< 50%	25%	36%
51% to 99%	29%	23%
100%	46%	41%

Max. = maximum. Min. = minimum. NSP2 = Neighborhood Stabilization Program 2.

Source: NSP2 applications, NSP2 data.

Sample grantees also expected to invest slightly larger shares of the NSP2 grant in each targeted tract, spending 17 percent of the total grant amount in each tract on average compared with 11 percent for all grantees on average (Exhibit 5–5). In the case of 1 grantee, it intended to spend the entire NSP2 grant in one census tract.

Exhibit 5–5: Expected NSP2 Investment per Targeted Tract

	Study Sample Grantees (*N* = 28)		All NSP2 Grantees (*N* = 56)	
	$ per Targeted Tract	% of Total Grant Amount per Targeted Tract	$ per Targeted Tract	% of Total Grant Amount per Targeted Tract
Mean	$2,478,257	17%	$1,680,099	11%
Median	$1,612,903	3%	$917,614	3%
Min.	$211,152	0%	$58,140	0%
Max.	$10,632,000	100%	$10,632,000	100%

Max. = maximum. Min. = minimum. NSP2 = Neighborhood Stabilization Program 2.

Source: NSP2 data, Disaster Recovery Grant Reporting, grantee data.

5.2 NSP2 Volume and Types of Activities

NSP2 grantees working in the sample counties treated a total of 6,354 properties through the spring of 2013[37] (Exhibit 5–6). About one-half of these were located in Lagging/Declining markets, and almost a third were in Boom-Bust Sand State markets. The majority of the sample properties were one-unit properties, but many were multifamily properties, particularly in Boom-Bust East Coast markets. In general, however, this chapter presents property-level tabulations, because the unit counts per property were often missing from the grantee data.

Exhibit 5–6: NSP2 Properties Completed by Market Type

Market Type	County	Number	Percent
Boom-Bust Sand State	Los Angeles County	558	8.8
	Maricopa County	494	7.8
	Miami-Dade County	296	4.7
	Palm Beach County	235	3.7
	Riverside County	54	0.9
	Sarasota County	71	1.1
	Stanislaus County	94	1.5
	Washoe County	146	2.3
Total		**1,948**	**30.7**
Boom-Bust East Coast	Cook County	262	4.1
	District of Columbia County	66	1.0
	Kings County	46	0.7
Total		**374**	**5.9**
Boom-Stable	Philadelphia County	492	7.7
	Ramsey County	149	2.3
Total		**641**	**10.1**
Slow Growth	Davidson County	116	1.8
	Denver County	119	1.9
Total		**235**	**3.7**
Lagging/Declining	Cuyahoga County	758	11.9
	Ingham County	215	3.4
	Pulaski County	236	3.7
	Wayne County	1,947	30.6
Total		**3,156**	**49.7**
Total		**6,354**	**100.0**

NSP2 = Neighborhood Stabilization Program 2.

[37] Data were collected on a rolling basis from grantees from May through July 2013; data were current as of the date that grantees submitted the data.

As discussed in Chapter 1, NSP2 offered grantees five activities to choose from to improve their local housing markets: (1) financing, (2) acquisition and rehabilitation, (3) land banking, (4) demolition, and (5) redevelopment; multiple activities were sometimes undertaken for the same property. Only 3 grantees, all in BBEC markets, used only one activity: 1 did only financing, 1 did only redevelopment, and 1 did only acquisition and rehabilitation. The remaining 31 grantees used a combination of activities to implement NSP2, and 4 grantees used all five activities. More grantees in the study sample engaged in acquisition and rehabilitation than any other activity (30 of 34), making this the cornerstone of NSP2 interventions. Fully one-half of expenditures on NSP2 properties (both NSP2 funds and other sources of funding) were on acquisition and rehabilitation (Exhibit 5–7).

NSP2–Eligible Activities

- *Activity A.* Financing mechanisms for the purchase or redevelopment of foreclosed homes, including soft seconds, loan loss reserves, and shared-equity mortgages (12 counties/17 grantees).
- *Activity B.* Acquisition and rehabilitation of foreclosed or abandoned properties (19 counties/33 grantees).
- *Activity C.* Land banking (9 counties/10 grantees).
- *Activity D.* Demolition of blighted structures (13 counties/15 grantees).
- *Activity E.* Redevelopment of demolished or vacant properties (16 counties/20 grantees).

As seen in Exhibit 5–8, BBSS and Slow Growth grantees relied on acquisition/rehabilitation significantly more than grantees in other market types; it was 50 percent of all activities in BBSS markets and 85 percent of all activities in SG markets. The specific activities grantees undertook in the acquisition and rehabilitation category were diverse, as it included the rehabilitation of both single-family and multifamily properties, homeownership, and rentals. Of grantees, 2 only conducted rehabilitation or redevelopment on single-family properties, 3 worked only on multifamily properties, and the remainder combined single-family and multifamily properties. Single-family properties were typically targeted for homeownership, while multifamily properties were more likely to be rental properties. Rentals, in turn, were typically targeted to lower income beneficiaries.

Exhibit 5–7: Total Expenditures on NSP2 Properties

Total Expenditures on NSP2 Properties	Number of Properties	Properties Missing Expenditure Data	$	%
Financing	917	0	$203,063,625	11%
Acquisition/rehabilitation	2,386	1	$935,892,013	50%
Land banking	379	0	$9,818,939	1%
Demolition	3,098	2	$36,173,115	2%
Redevelopment	612	1	$703,403,026	37%
Total	**6,350**	**4**	**$1,888,350,718**	**100%**

NSP2 = Neighborhood Stabilization Program 2.

Note: Some properties were treated with more than one activity; thus, the total *N* does not sum to the number of NSP2 properties with expenditure data.

Across all of the counties in the sample, more NSP2 properties were treated with demolition than with any other activity, but use of this activity was isolated to a few geographies. Unsurprisingly, all of the grantees in the L/D markets focused mostly on demolition, but this was generally not a widely used activity within the other markets. Overall, 15 grantees in 13 of the 19 counties in the study sample undertook some demolition (either demolition only or demolition and land banking) as a part of their NSP2 strategy. In total, 3,004 properties were demolished (47 percent of all NSP2 properties), but this accounted for only 2 percent of all spending (Exhibit 5–7). A table of total expenditures on NSP2 properties by market type and activity is in Appendix B–20.

Exhibit 5–8: NSP2 Properties by Activity and Market Type

NSP2 Activities	Market Type										
	Boom-Bust Sand State		Boom-Bust East Coast		Boom-Stable		Slow Growth		Lagging/Declining		Total
Acquisition/rehabilitation only	962	49%	104	28%	175	27%	199	85%	240	8%	1,680
Financing only	146	7%	81	22%	0	0%	21	9%	11	0%	259
Land banking only	3	0%	0	0%	6	1%	3	1%	101	3%	113
Demolition only	8	0%	83	22%	280	44%	0	0%	2,429	77%	2,800
Redevelopment only	207	11%	23	6%	128	20%	12	5%	117	4%	487
Land banking and demolition	24	1%	12	3%	19	3%	0	0%	149	5%	204
Rehabilitation and financing	519	27%	70	19%	0	0%	0	0%	13	0%	602
Other activity combos	79	4%	1	0%	33	5%	0	0%	96	3%	209
Total	**1,948**	**100%**	**374**	**100%**	**641**	**100%**	**235**	**100%**	**3,156**	**100%**	**6,354**

NSP2 = Neighborhood Stabilization Program 2.

Financing as a standalone activity (not used in combination with acquisition and rehabilitation or redevelopment) was a key activity in both BBEC and BBSS markets but scarcely pursued in the other markets. Most commonly, this financing took the form of second mortgages or downpayment assistance to aid low- and moderate-income buyers in purchasing foreclosures. Some grantees coupled their financial assistance with requirements for rehabilitation, and a few grantees provided first mortgage financing. Among activities, grantees were least likely to use NSP2 funds for land banking, with 10 grantees land banking (either alone or with demolition) 379 properties in nine counties. For a few grantees, such as those in Ingham and Wayne Counties, where the grantee's partnerships included longstanding land banks, land banking was a major activity, but the majority of grantees did not use land banking as part of their NSP2 strategy.

Almost 500 properties were redeveloped by 20 grantees in 16 counties. Redevelopment was most heavily used as a strategy in Boom-Stable markets, where 20 percent of NSP2 properties were redeveloped. A few grantees in the BBEC and BBSS markets also relied heavily on redevelopment, including grantees in Kings, Miami-Dade, and Sarasota Counties.

As shown in Exhibit 5–8, some properties were treated with two or occasionally even three NSP2 activities. These figures probably underestimate the number of properties with multiple activities, because grantees often reported financing or demolition as part of another activity. Multiple reported activities were most common in BBSS markets, where almost 32 percent of properties had two or three NSP2 activities. It was least common in SG markets, where all NSP2 properties were reported as having only one activity. The most commonly reported combinations of activities on the same property were acquisition/rehabilitation and financing, which accounted for almost 10 percent of all treated NSP2 properties. Other reported combinations of activities accounted for another 6.5 percent of NSP2 properties.

Exhibit 5–9 shows that grantees in a few counties treated significant numbers of multifamily properties, but the majority of grantees focused on single-family properties. In three counties, one-fourth or more of grantees' properties were multifamily: Cook, Kings, and Sarasota Counties. Kings County had the largest share of multifamily properties at 43 percent. Grantees in Pulaski, Riverside, and Washoe Counties worked exclusively on single-family properties.

5.3 Timing of NSP2 Activities

This section examines the timing of grantees' implementation of NSP2 over the 3-year grant period. Not all properties receiving NSP2 investments were acquired (such as most demolitions), and 14 percent of properties were missing acquisition dates, so this analysis focuses on the 2,802 properties acquired by grantees with a known acquisition date. Acquiring properties was the first step in both rehabilitation and redevelopment activities, and the bulk of NSP2 properties (44 percent) were acquired during 2011, the second year of the grant (Exhibit 5–10). Acquisitions were often not needed for grantees' demolition activities, because they typically conducted the demolition under a nuisance ordinance or demolished properties already in local land bank or government inventories that may have been acquired well before the start of the NSP2 grant.

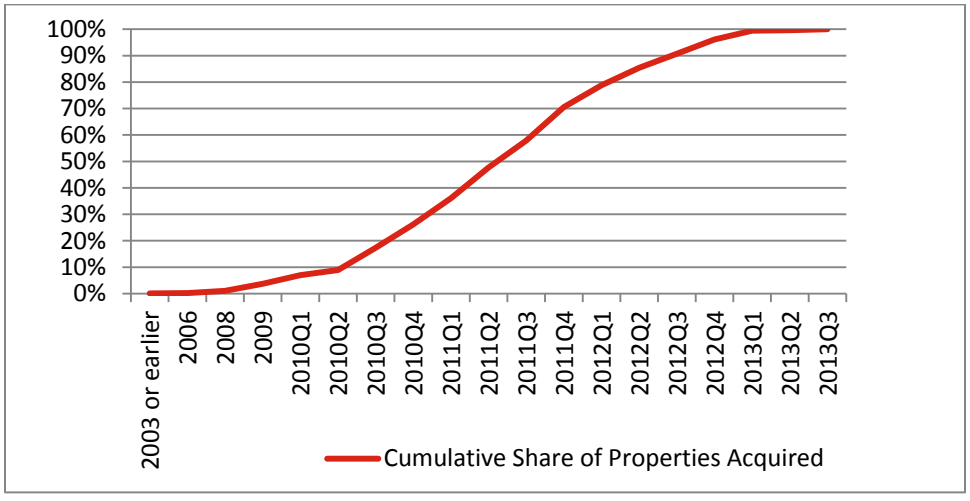
Exhibit 5–9: NSP2 Investments by Property Type

County	Property Type					Percent Multifamily
	Missing Property Type	Single Family (Four or Fewer Units)	Condo/ Co-op	Multifamily Rental (5+ Units)	Total	
Cook County	30	80	21	48	179	27%
Cuyahoga County	0	107	0	3	110	3%
Davidson County	0	106	0	10	116	9%
Denver County	2	104	5	8	119	7%
District of Columbia	0	46	10	10	66	15%
Ingham County	194	0	0	0	194	0%
Kings County	0	15	11	20	46	43%
Los Angeles County	0	536	4	18	558	3%
Maricopa County	2	472	9	11	494	2%
Miami-Dade County	6	267	0	22	295	7%
Palm Beach County	14	212	1	8	235	3%
Philadelphia County	12	188	0	12	212	6%
Pulaski County	0	147	0	0	147	0%
Ramsey County	149	0	0	0	149	0%
Riverside County	0	50	0	0	50	0%
Sarasota County	1	42	0	25	68	37%
Stanislaus County	0	76	12	6	94	6%
Washoe County	0	145	1	0	146	0%
Wayne County	147	114	14	1	276	0%
Total	557	2,707	88	202	3,554	6%

Condo = condominium. Co-op = cooperative. NSP2 = Neighborhood Stabilization Program 2.

Note: Properties that were demolished are excluded. These are invariably missing an indicator for property type.

Exhibit 5–10: Timing of NSP2 Property Acquisitions



NSP2 = Neighborhood Stabilization Program 2.

Notes: Properties that were demolished, which were typically not acquired by grantees, are excluded. About 14 percent of properties with other activities were missing property acquisition dates.

The most active year for property acquisition across all markets was 2011 (Exhibit 5–11). More than two-thirds of properties acquired in L/D markets were purchased in 2011, as were 61 percent of properties in BBEC markets and 58 percent of properties in SG markets. Grantees in both BBSS and BS markets acquired a substantial portion of their NSP2 properties during 2012 (31 percent and 23 percent of properties with nonmissing acquisition dates, respectively). Grantees acquiring properties later in the grant period are more likely to have encountered competition from investors and other buyers as housing markets started to recover.

Exhibit 5–11: Acquisition Year by Market Type

Year	Boom-Stable		Boom-Bust East Coast		Lagging/ Declining		Boom-Bust Sand State		Slow Growth		Total
	N	%	*N*	%	*N*	%	*N*	%	*N*	%	
Before 2010	0	0%	3	1%	6	2%	94	5%	1	0%	104
2010	47	24%	50	20%	69	21%	425	24%	38	16%	629
2011	92	46%	149	61%	221	68%	649	36%	134	58%	1,245
2012	46	23%	39	16%	27	8%	554	31%	49	21%	715
2013	13	7%	5	2%	0	0%	81	4%	10	4%	109
Total	**198**	**100%**	**246**	**100%**	**323**	**100%**	**1,803**	**100%**	**232**	**100%**	**2,802**

Notes: Properties that were demolished, which were typically not acquired by grantees, are excluded. About 14 percent of properties with other activities were missing property acquisition dates.

5.3.1 Activity Duration

Across all markets, demolition took the least amount of time to complete, with a median of about 38 days (Exhibit 5–12). The activity that took the longest for grantees to complete varied by market type. In BBEC and SG markets, the redevelopment activity was the most time consuming, with median durations of 525 days and 394 days, respectively. Redevelopment and land banking took the same amount of time in L/D markets at approximately 246 days.

That said, very few land banked properties were completed, meaning that they were sold. The intent of a land bank is often to hold properties until several parcels can be assembled for a redevelopment project or until market conditions change and the market can absorb the properties. Reflecting this intent, NSP2 properties could be held in land banks for up to 10 years. Of the NSP2 land-banked properties, only about 15 percent reported end dates, suggesting that up to 85 percent are still held by the land bank. Grantees in BBSS markets reported only one land bank activity completion, of 731 days. In BS markets, 7 properties reported that the land banking activity was complete, with a median duration of 834 days.

The median time for rehabilitation was longest in L/D markets at 199 days; it took the least amount of time in SG markets at 106 days. Across all market types, it took less time for grantees to rehabilitate properties than to redevelop them.

Exhibit 5–12: Activity Duration by Market Type

Activity	Market Type	*N* Total	*N* Missing	Duration (Days)		
				Mean	Median	Std. Dev.
Demolition	Boom-Bust Sand State	65	2	90	73	72
	Boom-Bust East Coast	96	3	14	6	28
	Boom-Stable	315	10	72	63	48
	Lagging/Declining	2,624	135	54	33	60
	Total	**3,100**	**150**	**55**	**38**	**60**
Land banking	Boom-Bust Sand State	27	26	731	731	.
	Boom-Bust East Coast	13	13	.	.	.
	Boom-Stable	44	37	898	834	381
	Slow Growth	3	3	.	.	.
	Lagging/Declining	292	240	255	247	137
	Total	**379**	**311**	**298**	**247**	**282**
Redevelopment	Boom-Bust Sand State	255	56	324	258	182
	Boom-Bust East Coast	23	15	506	525	153
	Boom-Stable	137	22	462	335	464
	Slow Growth	12	1	378	394	235
	Lagging/Declining	186	23	273	246	142
	Total	**613**	**117**	**343**	**263**	**277**
Rehabilitation	Boom-Bust Sand State	1,539	252	162	124	131
	Boom-Bust East Coast	175	41	183	163	110
	Boom-Stable	199	41	220	183	154
	Slow Growth	199	9	142	106	137
	Lagging/Declining	275	41	251	199	198
	Total	**2,387**	**384**	**176**	**139**	**145**

Std. Dev. = standard deviation.

Notes: The *activity duration* is the time span between the activity start and end dates (that is, the time during which rehabilitation or other activities actually took place). Note that missing durations may imply that the activity is ongoing.

The length of time between when grantees acquired a property and disposed of it is the *holding time.* Much of the data on holding time is missing because of missing acquisition dates, but for properties that have nonmissing dates, property holding time overall was more than a year, at 498 days (Exhibit 5–13). It was shortest in SG markets, with a median of 170 days, and longest in BBEC markets, at 653 days. NSP2 properties in these markets were more likely to be multifamily. The larger property size—and the associated increase in the size and complexity of the rehabilitation or redevelopment—probably accounts for the longer holding time.

5.3.2 Time From Completion to Sale

In addition to the size of properties being rehabilitated or redeveloped, another factor that could affect holding time is market strength. Across all market types, the median time to sale after completion of either rehabilitation or redevelopment was 110 days (Exhibit 5–14). Grantees in SG markets—which as shown above also had the shortest property holding time—sold properties the most quickly, with a median hold time of 34 days, followed by grantees in L/D markets, with a median time of 64 days. Sale times were longest for grantees in BBEC markets, which had a median time of 145 days. Unexpectedly, in most markets, redeveloped properties sold more quickly than rehabilitated properties. Selling rehabilitated properties seemed to be the most difficult in BBSS and BBEC markets; the median number

of days to sell properties was 142 days and 164 days, respectively. Long sale times could be specific to the particular neighborhoods in which the properties were located. For example, the rehabilitated properties in the BBEC markets were primarily in Chicago, where 1 grantee chose to work in an extremely distressed neighborhood that had high crime rates. This grantee and others had difficulty finding buyers for properties, which may have contributed to long times from completion of a property to sale.

Exhibit 5–13: Property Holding Time by Market Type

Market Type	*N*	*N* Missing	Property Holding Time (Days)		
			Median	Mean	Std. Dev.
Boom-Stable	90	271	380	389	156
Boom-Bust East Coast	47	163	653	613	201
Lagging/Declining	116	600	338	378	207
Boom-Bust Sand State	913	881	427	470	226
Slow Growth	102	112	170	230	179
Total	**1,268**	**2,027**	**398**	**442**	**229**

Std. Dev. = standard deviation.

Note: *Holding time* is the time span between the acquisition date and the disposition date. It excludes properties receiving Neighborhood Stabilization Program 2 funds only for financing or demolition. *N* equals the number of nonmissing observations.

Exhibit 5–14: Time From Completion of Rehabilitation or Redevelopment to Sale

Market Type	Activity	*N* Total	*N* Missing	Time From Activity Completion to Sale (Days)		
				Mean	Median	Std. Dev.
Boom-Stable	Rehabilitation	158	104	133	105	81
	Redevelopment	113	77	103	55	105
	Total	**271**	**181**	**121**	**88**	**92**
Boom-Bust East Coast	Rehabilitation	96	62	181	164	107
	Redevelopment	7	3	89	86	52
	Total	**103**	**65**	**172**	**145**	**106**
Lagging/ Declining	Rehab	225	159	125	64	166
	Redevelopment	157	139	76	68	82
	Total	**380**	**297**	**115**	**64**	**154**
Boom-Bust Sand State	Rehabilitation	1,037	246	169	142	121
	Redevelopment	170	40	43	21	56
	Total	**1,190**	**274**	**152**	**125**	**123**
Slow Growth	Rehabilitation	106	5	61	34	103
	Redevelopment	1	0	396	396	.
	Total	**107**	**5**	**64**	**34**	**107**
Total	Rehabilitation	1,622	576	154	125	125
	Redevelopment	448	259	61	30	78
	Total	**2,051**	**822**	**140**	**110**	**124**

Std. Dev. = standard deviation.

Notes: Missing data may mean that the property was not sold, or it may simply mean the grantee did not report these data. Observations exclude properties missing an activity completion date (*N* = 477) and those that the grantee explicitly identified as rentals not being offered for sale (*N* = 514).

5.4 Cost of NSP2 Activities

This section examines the cost of NSP2 activities conducted by grantees in the study sample, including expenditures per property, per activity, and by market. Grantees typically combined NSP2 funds with other sources of funding; thus, total costs (NSP2 plus other sources) are reported separately from NSP2 expenditures.

As shown in Exhibit 5–15, expenditures per NSP2 property varied widely across market types. Expenses were lowest in L/D markets, with median expenditures of $8,750, probably because the predominant activity there was demolition. Demolitions are the lowest cost activity, as discussed further below. Median costs were also lower in BS markets than in other markets. In these markets, activities were split among demolition, redevelopment, and acquisition/rehabilitation.

Exhibit 5–15: Expenses per Property by Market Type

Market Type	Expenditures per Property	*N* Total	Mean	Median	Std. Dev.
Boom-Bust Sand State	NSP2 funds	1,948	291,133	165,294	804,225
	Total expenses		497,774	180,000	2,564,879
Boom-Bust East Coast	NSP2 funds	374	505,560	230,116	1,267,870
	Total expenses		1,056,269	287,176	3,418,970
Boom-Stable	NSP2 funds	641	119,009	23,125	290,981
	Total expenses		184,613	47,430	816,907
Slow Growth	NSP2 funds	235	283,937	164,426	576,695
	Total expenses		878,770	165,356	6,049,224
Lagging/Declining	NSP2 funds	3,156	43,201	8,475	234,431
	Total expenses		63,519	8,750	582,660
Total	NSP2 funds	6,354	162,958	38,180	600,400
	Total expenses		**297,366**	**49,630**	**2,090,207**

NSP2 = Neighborhood Stabilization Program 2. Std. Dev. = standard deviation.

Note: Expenditures are missing for 4 of the 6,354 properties. *Total expenses* includes funds from NSP2 as well as other sources.

Median expenses were highest in BBEC markets. These high expenses were driven by Kings County, where grantees' predominant activity was financing, mostly of large multifamily properties. On a per-unit basis (Exhibit 5–16), costs were similar in Kings County to those in other counties. Expenses were roughly similar in BBSS and SG markets. Most of the counties in these markets used predominantly acquisition/rehabilitation. Miami-Dade County was the one exception, where the predominant activity was redevelopment.

Exhibit 5–17 highlights the differences in costs per property by activity type. Demolition incurred roughly $8,200 in total expenses (median), and the median cost of land banking was roughly $20,400. Relatively few non-NSP2 sources of funding were spent in these two activities, as demonstrated by the small differences between average expenditures of NSP2 funds and non-NSP2 funds. "Other activity combinations"—most often redevelopment and financing—had the highest median expenses, followed by redevelopment only.

Exhibit 5–16: Expenses per Unit by Market Type

Market	Activity	*N* Total	*N* Missing	Mean	Median	Std. Dev.
Boom-Stable	Acquisition/rehabilitation	199	175	$192,599	$215,063	$49,037
	Redevelopment	137	44	$258,639	$268,846	$129,895
Boom-Bust East Coast	Financing	151	0	$221,586	$198,234	$100,666
	Acquisition/rehabilitation	175	30	$151,148	$116,010	$110,654
	Redevelopment	23	1	$475,610	$344,222	$525,198
Lagging/ Declining	Financing	55	0	$79,388	$61,699	$65,769
	Acquisition/rehabilitation	275	99	$149,741	$138,861	$104,830
	Redevelopment	186	72	$179,957	$213,362	$82,361
Boom-Bust Sand State	Financing	690	1	$56,218	$19,802	$63,470
	Acquisition/rehabilitation	1,539	21	$195,543	$166,771	$103,724
	Redevelopment	255	4	$145,982	$134,634	$99,125
Slow Growth	Financing	21	11	$115,057	$67,125	$93,461
	Acquisition/rehabilitation	199	2	$139,060	$135,055	$61,055
	Redevelopment	12	0	$228,680	$141,392	$314,694
Total	Financing	917	12	$85,868	$40,000	$94,082
	Acquisition/rehabilitation	2,387	327	$183,069	$161,966	$102,793
	Land banking	379	249	$21,405	$16,973	$21,939
	Demolition	3,100	2,953	$13,970	$6,505	$18,617
	Redevelopment	613	121	$191,905	$168,988	$171,277

Std. Dev. = standard deviation.

Note: Per-unit costs for demolition and land banking by market are not shown because of high rates of missing data.

Exhibit 5–17: Expenses per Property by Activity

NSP2 Activity	Property Expenditures	*N*	Mean	Median	Std. Dev.
Acquisition/rehabilitation only	NSP2 funds	1,679	$280,938	$164,216	$812,862
	Total expenses		$417,267	$177,681	$2,296,303
Financing only	NSP2 funds	259	$203,112	$149,000	$348,562
	Total expenses		$371,516	$186,694	$811,539
Land banking only	NSP2 funds	113	$42,726	$17,886	$129,270
	Total expenses		$47,497	$20,363	$158,896
Demolition only	NSP2 funds	2,800	$10,582	$7,925	$19,909
	Total expenses		$11,003	$8,173	$19,910
Redevelopment only	NSP2 funds	486	$372,131	$119,048	$942,233
	Total expenses		$1,272,297	$215,063	$5,227,454
Land banking and demolition	NSP2 funds	204	$30,757	$23,417	$33,006
	Total expenses		$30,857	$23,499	$32,956
Rehab and financing	NSP2 funds	602	$324,652	$192,834	$647,630
	Total expenses		$381,543	$193,538	$959,920
Other activity combos	NSP2 funds	207	$436,220	$231,252	$1,167,233
	Total expenses		$970,858	$238,340	$4,446,293
Total	NSP2 funds	6,350	$162,461	$38,149	$595,708
	Total expenses		**$297,366**	**$49,630**	**$2,090,207**

NSP2 = Neighborhood Stabilization Program 2. Std. Dev. = standard deviation.

Financing was most often used to provide either first mortgage financing or downpayment assistance to homebuyers. In BBEC markets, however, where financing was provided to developers to purchase large multifamily properties, financing expenses were high. Acquisition/rehabilitation costs per property were high in BBEC markets but on a per-unit basis were fairly similar to costs in other markets. Redevelopment costs per property were highest in the SG markets of Denver and Davidson Counties because of the large size of some redeveloped properties, but on a per-unit basis, redevelopment costs in those counties were lower than those in most other markets. On a per-unit basis, costs were highest in BBEC markets, where the median per-unit cost of redevelopment (including both NSP2 and non-NSP2 sources) was over $344,000 (see Appendix B–21).

As shown in Exhibit 5–18, the acquisition cost for NSP2 properties varied over time. A number of grantees invested NSP2 funds in at least a few properties they had previously acquired. Most properties acquired prior to 2010 (that are not missing acquisition dates) were in L/D markets.

Exhibit 5–18: Acquisition Costs Over Time for Single-Family Detached Properties by Market Type

Market Type	Acquisition Year	*N*	Mean	Minimum	Median	Maximum
Boom-Bust East Coast	2009	1	.	.	.	.
	2010	18	$56,761	$25,314	$55,820	$123,750
	2011	28	$48,333	$4,950	$37,560	$168,300
	2012	3	$79,200	$54,450	$79,200	$103,950
Lagging/Declining	Missing	118	$5,000	$5,000	$5,000	$5,000
	2009	1	$13,500	$13,500	$13,500	$13,500
	2010	60	$12,159	$100	$3,865	$148,673
	2011	229	$12,373	$100	$8,000	$189,768
	2012	21	$14,632	$1,630	$12,000	$78,000
Boom-Bust Sand State	Missing	13	$65,340	$65,340	$65,340	$65,340
	2009	2	$128,542	$120,928	$128,542	$136,156
	2010	277	$124,068	$11,141	$110,000	$375,000
	2011	596	$140,258	$700	$107,648	$2,703,415
	2012	479	$120,327	$14,850	$96,406	$1,064,569
	2013	55	$149,554	$4,550	$126,342	$440,550
Slow Growth	Missing	1	$97,920	$97,920	$97,920	$97,920
	1900	1	$60,500	$60,500	$60,500	$60,500
	2010	26	$46,155	$17,325	$32,276	$110,000
	2011	101	$91,226	$18,767	$88,772	$231,256
	2012	38	$110,153	$40,937	$113,363	$262,500
	2013	6	$129,280	$106,900	$126,040	$155,000

Grantees also acquired some properties over the course of the grant at very low cost, such as from local tax foreclosures. About 10 percent of properties (about 300) for which acquisition price is not missing were acquired for less than $100. Inexpensive sources of property seem to have become less common over time, as most of these were acquired in 2010 and 2011. For market-rate properties, some grantees reported during site visits prices increased over the course of the grant as competition from investors increased.

Exhibit 5–18 excludes properties with prices under $100 to separate the effects of free (or nearly free) properties from investor competition on overall property acquisition costs. L/D markets had consistently low property acquisition costs, both because local land bank and tax foreclosure inventories were available and because properties in NSP2 neighborhoods in this market have low market values.

5.5 Conclusion

This chapter briefly described all 56 NSP2 grantees and compared them with grantees in the sample counties. Although the two groups of grantees are similar in many ways in terms of the types of organizations and the partnership structures they formed, there are indications that lead grantees in the sample counties may have had greater capacity than other grantees. They had larger NSP2 awards and were more likely to be awarded the full amount of the grant requested, suggesting that they were rated more highly than other grantees in the NSP2 grant selection process. Grantees were also selected for inclusion in the study in part based on their ability to provide the study team with property-level data, another indication of a relatively high-performing organization that might have been more likely to achieve intended outcomes than other grantees.

This chapter also described the accomplishments of NSP2 grantees in the study's sample sites. The types of activities implemented by grantees as well as the timing and costs of these activities varied greatly depending on local housing market conditions, making NSP2 unique in each location as opposed to a program implemented uniformly in markets around the country.

6. Visual Signs of Distress

6.1 Introduction

The emerging literature on the foreclosure crisis provides the most recent evidence of externality effects related to property conditions. Although studies vary in the size of the estimated effect, in general the evidence consistently shows that foreclosures have a negative spillover effect on the prices of properties within a radius of 0.25 to 0.5 mile, with the effect dissipating over distance and time (Campbell, Giglio, and Pathak, 2011; Frame, 2010; Harding, Rosenblatt, and Yao, 2009; Hartley, 2010; Immergluck and Smith, 2006a; Lee, 2008; Leonard and Murdoch, 2009; Lin, Rosenblatt, and Yao, 2009; Mikelbank, 2008; Schuetz, Been, and Ellen, 2008). These studies frequently discuss visual distress as one of several potential causal mechanisms of negative spillover on prices; however, the studies do not attempt to isolate the role of visual distress.[38]

The limited work done on visual indicators of distress suggests that visual cues are one mechanism responsible for negative spillover effects associated with the foreclosure process. Lambie-Hanson (2013) finds properties in the foreclosure process, especially REO properties, get more citizen complaints about their physical condition than do nondistressed properties. Gerardi et al. (2012) find that foreclosures in poor physical condition have negative spillover effects, while foreclosures in good physical condition do not, suggesting that the foreclosure itself may not be responsible for any of the externality.

The Visual Tracking Survey conducted for the evaluation was designed to document the exterior conditions of a sample of properties in two counties in the study. It was an early attempt to understand through direct observation some of the physical characteristics of properties located in neighborhoods hit especially hard by foreclosures, but it was not a causal investigation. Instead, the purpose was descriptive. Specifically, the VTS was designed to:

- Document the exterior conditions of properties on a sample of blockfaces targeted by grantees for Neighborhood Stabilization Program 2 activities.
- Describe the extent of changes in the exterior conditions of properties and blockfaces during the period of NSP2 activities.
- Compare property conditions—and changes in property conditions—of financially distressed and nondistressed properties.
- Compare the changes in property conditions on blockfaces with higher and lower concentrations of financially distressed properties.

The survey analysis paints a picture of what two different counties, representing two markets, look like at a glance. Cuyahoga County appears to be a county that is still somewhere near the bottom of the market. Many properties show signs of visual distress, and properties in financial distress are more likely to show

[38] Visual distress and vacancy are frequently cited as a mechanism for negative externality effects. If foreclosed properties are not maintained and occupied, potential buyers may be dissuaded from purchasing nearby properties, driving down the eventual sales price. This hypothesis is consistent with evidence linking foreclosed and vacant properties to the incidence of property crime in the neighborhood (Ellen, Lacoe, and Sharygin, 2013; Immergluck and Smith, 2006b).

signs of visual distress. Palm Beach County appears to be a county on the upswing. Fewer properties show signs of visual distress, and conditions are improving over time, especially for properties in financial distress. The evidence suggests that, although financial distress is related to visual distress at the property level, macroeconomic conditions at the city level may play a larger role in shaping the visual characteristics of neighborhoods.

The remainder of this chapter proceeds as follows. Section 6.2 discusses the selection of two counties for the VTS, the selection of the blockfaces for observation within these counties, and the approach to measuring visual distress. Section 6.3 defines the analysis variables, and Section 6.4 summarizes the findings related to the NSP2 properties in the sample. Section 6.5 describes the visual condition of the two counties. Section 6.6 concludes the chapter with a discussion of the relevance of the findings and potential directions for future research.

6.2 Methodology

6.2.1 Selecting Counties for the Visual Tracking Survey

The VTS was designed to generate observational data about the quality of properties in areas particularly hard hit by the foreclosure crisis. The intensive resources needed for a VTS limited the sample size to two counties, and the study team judged it best to study counties in different housing markets to see if the relationship between foreclosure and visual distress was different across market types. The team narrowed the pool of counties to the Boom-Bust Sand States and the Lagging/Declining markets because housing markets with large, new exurban areas (BBSSs) and the long-term declining cities have come to epitomize the markets hit hardest by the foreclosure crisis.

Within these market types, the study team identified four potential candidates in each market category based on (1) the level of total investment, (2) the number of census tracts targeted for investment, and (3) the relative prevalence of acquisition and rehabilitation as opposed to financing or demolition. The study team selected Palm Beach County, Florida, from the BBSS category and Cuyahoga County, Ohio, from the L/D market category. These counties had the best combination of total investment, volume of tracts, and acquisition and rehabilitation.

6.2.2 Selecting Blockfaces Within Counties

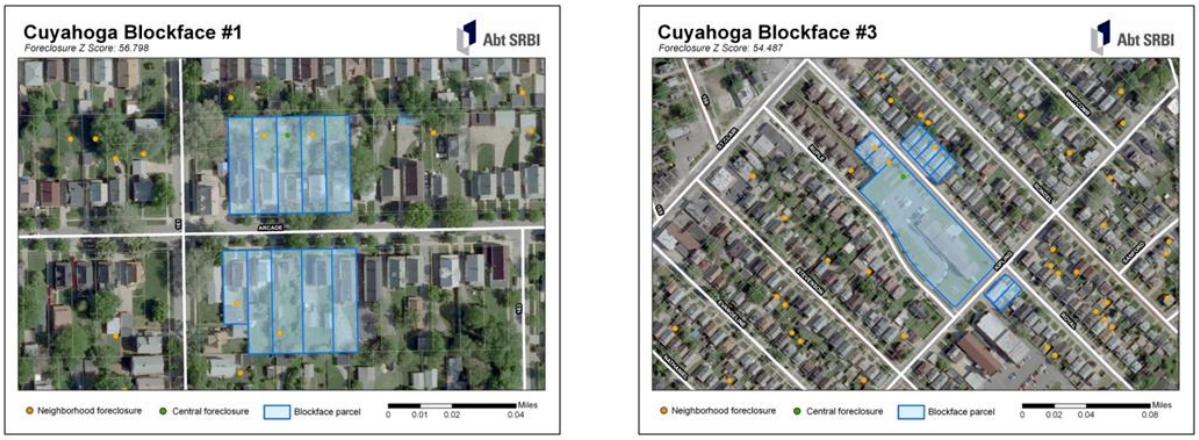
Within each county, the study team calculated foreclosure concentration scores for each foreclosure using Anselin Local Moran's I cluster and outlier analysis.[39] The concentration scores were based on foreclosure data from January 2006 through January 2012.[40] Thereafter, the list of foreclosures and their

[39] Moran's I compares each given point with its surrounding points and determines whether each foreclosure is part of a significant cluster. A *z* score, or measure of standard deviation, and a *p*-value are assigned for each point. A high positive *z* score by this test means that surrounding points have similar values and may suggest clustering. Relationships among features were conceptualized using inverse distance, meaning that foreclosures nearby had a much greater weight in determining the presence of clustering than foreclosures farther away. Distances were calculated using the Euclidean distance method. The highest *z* scores at the 95-percent confidence interval, a *p*-value <0.05, were considered candidates for blockface selection.

[40] The most recent transactions were recorded January 4, 2012, for Cuyahoga County and January 13, 2012, for Palm Beach County. All foreclosures in the data were not necessarily current as of the last transaction date in the file. Some properties' foreclosures had been resolved. All foreclosures over the time period were used because the most accurate picture of the hardest hit neighborhoods during the foreclosure crisis as opposed to the hardest hit neighborhoods in

corresponding tracts were compared with the list of NSP2 tracts identified by grantees in their applications, retaining only those tracts that were NSP2 target areas. The study team selected the 50 foreclosures with the highest concentration scores to serve as focal foreclosures and created blockfaces around each focal foreclosure. Each blockface includes the focal foreclosure, the 2 properties to the left, the 2 properties to the right, and the 5 properties across the street, giving each blockface a total of 10 properties.[41] *Properties* are defined as distinguishable physical structures, so a small, multifamily building is treated as 1 property. The two examples from Cuyahoga County in Exhibit 6–1 show that some blockfaces contain only residential structures lined up across from one another, while others contain nonresidential or irregular structures.

Exhibit 6–1: Sample Blockfaces in Cuyahoga County



The Palm Beach County sample originally included some blockfaces that had only large, multifamily properties. These blockfaces were dropped from the sample after the field tests revealed that observing them would be physically difficult to accomplish in the allotted time because of the large area observers would have to cover. Observing large, multifamily buildings presents two additional problems. The first is that the size of the property potentially distorts the comparability of the survey measures. Having one broken door out of the 100 visible on a large, multifamily building is not comparable to having one broken door out of the two or three that are visible on a single-family home. Second, it is reasonable to assume that the mechanisms linking foreclosures of large, multifamily buildings with visual distress are different from those for single-family homes. Because large buildings generally have a professional management company that takes care of general maintenance and landscaping, a single foreclosure would probably not change anything about the physical upkeep of the property. There would be a connection to visual distress only after the number of foreclosures in the building began to affect the ability of the condominium association to afford the property management service.

January 2012. It also is important to note that properties had an additional 3 months to move in or out of distress before the first VTS observation. This means that some VTS blockfaces do not contain any financially distressed properties as of the first VTS observation, even though we selected blockfaces around focal foreclosures.

41 Properties were identified using parcel boundary files obtained from each county. Each blockface was visually inspected in combination with satellite imagery to make sure only one physical structure was on the parcel. Where it was obvious that there were multiple properties on the parcel, the team made manual corrections so there was either only one property or an empty lot for each unit of observation.

The final sample contained 50 blockfaces with a total of 500 properties in Cuyahoga County and 55 blockfaces with a total of 550 properties in Palm Beach County.[42] Because we were interested mainly in documenting visual distress of residential properties, we selected blockfaces that had mostly residential structures, excluding large multifamily properties. Exhibit 6–2 shows the distribution of property types at the first observation. Around 95 percent of properties in both counties are residential, with a small number of empty lots making up the bulk of the remaining properties.

The counties differed in terms of the types of residential structures present on the sample blockfaces. As seen in Exhibit 6–2, Cuyahoga County has a smaller share of single-family, detached homes and a larger share of small, multifamily properties (two to four units) compared with Palm Beach County. Although the sample was not designed to be representative of larger housing markets in these two counties, it is helpful to keep in mind that a typical blockface in Cuyahoga County is likely to contain slightly more units than a blockface in Palm Beach County.

Exhibit 6–2: Types of Properties in Round 1

	Cuyahoga County		Palm Beach County	
	Number	Percent (%)	Number	Percent (%)
Property use				
Commercial	1	0.2	3	0.5
Residential	477	95.4	519	94.4
Institutional	2	0.4	4	0.7
Mixed-use	1	0.2	0	0.0
Empty lot/undetermined	19	3.8	24	4.4
Total	**500**	**100**	**550**	**100**
Residential type*				
Single-family detached home	284	59.4	414	79.8
Single-family attached home	2	0.4	23	4.4
Multifamily building with 2–4 units	163	34.1	66	12.7
Multifamily building with 5 or more units	13	2.7	14	2.7
Unsure	15	3.4	2	0.4
Total	**477**	**100**	**519**	**100**

*Includes mixed-use properties.

6.2.3 Timing of Blockface Selection in Relation to NSP2 Activity

The selection of VTS tracts occurred during the initial stages of NSP2 implementation, because the goal was to observe properties just before the influx of NSP2 investments, and then track changes in the conditions of properties (including NSP2 properties) over time. The need to select properties early resulted in an important limitation to the selection approach, however. Blockfaces were selected in tracts grantees planned to target for NSP2 investment before knowing the precise location of the investment they would actually make. As a result, there was a small probability of observing actual NSP2 investment. In fact, only eight NSP2 properties were found in the VTS blockfaces.

[42] Observers in Palm Beach County inadvertently observed five of the alternate blockfaces in Round 1, and the study team decided to continue observing them in subsequent rounds.

Nonetheless, the use of foreclosure concentration scores to guide the construction of blockfaces resulted in the selection of tracts and blockfaces close to NSP2 activity. Appendices C–1 and C–2 provide a series of maps for Cuyahoga and Palm Beach Counties showing the location of the VTS observation areas relative to the location of NSP2 properties by tracts with different levels of financial distress. The maps demonstrate that the VTS observation areas are close to NSP2 properties and located in highly distressed neighborhoods, but few NSP2 properties are located within the observation areas. Thus, although the VTS cannot produce comparisons of NSP2 properties relative to other foreclosures or nondistressed properties, the VTS does provide evidence of visual blight in neighborhoods that received or are similar to neighborhoods that received NSP2 investment.

6.2.4 Observing Visual Distress

The VTS was conducted over three rounds of observations approximately 6 months apart. Exhibit 6–3 displays the observation period for each round in each county.

Exhibit 6–3: Observation Period by County

	Round 1	Round 2	Round 3
Cuyahoga	3/4/2012–3/29/2012	10/3/2012–11/14/2012	4/10/2013–5/13/2013
Palm Beach	3/1/2012–4/18/2013	10/9/2012–11/15/2012	4/3/2013–5/4/2013

Observers used a structured instrument to record the physical condition of sample blockfaces. Before going into the field, observers attended multiday training that included a combination of classroom and field experience to improve consistency in the observations. The training culminated in a series of field tests to certify that each observer was coding observations with accuracy and consistency.

During each observation round, a field manager independently observed several properties on a blockface as well as the overall blockface while the observer completed his or her observations. The field manager compared her observations with the observer's, and they discussed any differences to make sure the observer was clear on what was expected.

The property-level instrument (see Appendix C–3) asked observers to record items along several dimensions:[43]

- Signs of occupancy, such as vehicles in the driveway, pets inside, well-maintained landscaping.
- Damaged points of entry, including the number of damaged windows, entry and side doors, locks, and garage doors.
- Signs of damage, including the presence of no, some, or severe damage on the roof; rain gutters; paint; exterior walls; foundation; and railings, fences, and gates.

[43] Additional domains included signs of foreclosure (for example, posted notice of foreclosure) and signs of investment. Observers also used a blockface-level instrument that asked them to document signs of blight not on the selected properties but within a visual line of sight. The instrument asked observers to document signs of services like police departments, schools, and convenience stores. The blockface-level observations are not included in the analysis for two reasons. First, the blight dimension lacked variation in Cuyahoga County. All of the observed blockfaces in Rounds 1 and 2 had signs of blight, and all but one did in Round 3. The reverse was true for services where four or fewer blockfaces in Palm Beach County in each round had services present.

- Signs of disrepair, such as damaged shutters, cracked entry steps, and damaged exterior lighting.
- Signs of blight, such as litter or garbage in the yard, graffiti, or poorly maintained landscaping.

Data were quality checked in two ways. Observers entered observation data into a computer-assisted personal interviewing system, which checked the internal consistency of responses as they were entered. In addition, a field manager performed independent observations of a select number of properties to verify the accuracy of observer's responses. When discrepancies occurred, they generally related to distinctions about lawn condition and upkeep, and the field manager did not find significant differences.

6.3 Analysis

6.3.1 Development of Property-Level Summary Measures

The observation instrument allows observers to indicate more than 50 separate signs of visual distress on each property. Given the large number of potential indicators of visual distress, it is difficult to develop a sense of overall property quality when looking at individual items in isolation. Some properties may have a single sign of visual distress but otherwise be in good condition. There is a tension in developing a measure that describes the overall quality of the property yet allows for a nuanced discussion of particular characteristics. This analysis attempts to strike a middle ground by reporting on aggregate summary measures for each domain listed above.

The summary measures are constructed by aggregating the individual items relevant to each domain. *Occupancy* is reported as a dummy variable set to yes if any sign of occupancy is present. For the other domains, the question of magnitude is more meaningful, and summary measures equal the unweighted sum of items included in each domain. The definition of each of the summary measures is listed in Exhibit 6–4.

6.3.2 Defining Financial Distress

One of the key components of the analysis is comparing the visual attributes of properties in financial distress with other properties (see Section 6.5). A property is defined as entering a period of *financial distress* when it experiences a foreclosure filing, foreclosure sale, or entry into REO. Properties exit financial distress with a private sale. Properties that have a foreclosure filing and no subsequent foreclosure sale or entry into REO are taken out of financial distress after 180 days. We chose to examine properties in distress as opposed to properties in foreclosure because a preforeclosure action is likely the first point in the data when an owner would decide it is no longer worth investing in the property; therefore, it is the point when visual distress is expected to begin.

Exhibit 6–5 shows the number of properties in financial distress in each of the three rounds. Cuyahoga County had 60 total properties in distress in Round 1. By Round 2, 15 of those properties had moved out of distress, and 9 other properties had moved into distress. Of the 54 distressed properties in Round 2, 8 had moved out of distress and another 12 had moved into distress. This movement is consistent with an uneven market that does not show clear signs of getting better or worse.

Exhibit 6–4: Property-Level Summary Measures

Summary Measure	Components
Signs of occupancy: - Equals 1 if any sign present, 0 otherwise.	• Occupants observed on the property. • Vehicles in driveway. • Lights on inside. • Electrical meter head present. • Furniture or live plants visible through window. • Well-maintained lawn (for example, recently trimmed/edged, no large sections of dead grass). • Well-maintained landscaping (for example, trimmed bushes/hedges, maintained flowerbeds). • Yard or porch furniture (in a condition suggesting occupancy). • Seasonal holiday decorations. • Satellite dish on roof/attached to house. • Garbage or recycling can out front, if others are out for “trash day”; piled or bagged yard waste at curb to be collected. • Pets present (for example, dogs barking, animals visibly present). • Recent newspaper or package delivery (at doorstep or driveway, not accumulating).
Broken points of entry: - Total number of boarded, broken, damaged, or missing points of entry.	• Windows. • Entry and side doors. • Locks.
Signs of severe damage: - Total number of features showing signs of severe damage.	• Roof. • Rain gutters. • External paint. • Exterior walls. • Building foundation. • Railings, fences, or gates.
Signs of disrepair: - Total number of features damaged, broken, or otherwise in disrepair.	• Mold or mildew on the structure. • Damaged shutters or window screens (for example, broken, disconnected, or crooked). • Damaged fireplace or chimney (for example, broken or missing bricks). • Porch in disrepair (for example, sagging, damaged, or becoming disconnected from the structure). • Damaged or cracked entryway steps. • Damaged or cracked driveway/pathway (on property, not sidewalk). • Damaged exterior lighting on the property.
Signs of blight: - Total number of signs of blight.	• Graffiti. • Empty beer or liquor bottles or cans. • Other trash, litter, or debris on the property. • Abandoned or inoperable vehicles or appliances on the property. • Overgrown grass (approximately more than 6 inches tall). • Other signs of deteriorating landscaping (for example, abundance of weeds, overgrown flower beds). • Signs of squatting or loitering on the property (for example, cardboard boxes meant for sleeping; shopping carts, luggage, or backpacks with personal items).

In Palm Beach County, there were 50 distressed properties in Round 1. Of the 50, 19 had moved out of distress by Round 2 and another 7 had become distressed. By Round 3, an additional 8 properties had moved out of distress and 10 had become distressed. These data suggest that things generally improved between Rounds 1 and 2, and then remained constant between Rounds 2 and 3.

Exhibit 6–5: Properties in Financial Distress by Round

	Cuyahoga County Frequency		Palm Beach County Frequency	
Round	Distressed	Nondistressed	Distressed	Nondistressed
Round 1	60	417	50	469
Round 2	54	423	38	481
Round 3	58	419	40	479

6.4 Identifying NSP2 Property Outcomes

In Cuyahoga County, five properties received NSP2 investment, including three on the same blockface. Three of these properties were demolished before the first VTS round and were observed as empty lots in all three rounds. Two of the demolished properties and another property that was land banked were located on the same blockface, indicating that there were instances of concentrated demolition and land banking. The land-banked property had an activity end date that preceded the first observation, indicating that the grantee had sold the property. This property was observed as a residence in all three rounds. The property was observed in good condition, with no damaged points of entry, severe damage, or disrepair in any of the three rounds, possibly because it was new construction.

The final property was targeted with acquisition and rehabilitation and land banking. The activity began before the first observation and concluded between the second and third observations. Interestingly, in the first and second rounds, the property was categorized as being poor quality, but by the third observation it had moved to good quality. In the first round, the property had 8 combined damaged points of entry, items with severe damage, and items with disrepair. The number of damaged items jumped to 11 in the second round, dropping to 0 in the final round. It was observed as occupied in the first round because a satellite dish and electrical meter head were present, although these are not strong indicators that the property actually was occupied because they are often left behind. The property had no signs of occupancy in the second round, but yard or porch furniture was visible in the third round, suggesting that it was occupied at that point. It appears the quality of the property improved significantly, which could be related to NSP2 investment.

Three properties received NSP2 funding in Palm Beach County. One was targeted for financing before the first observation. The property had three total damaged points of entry, items with severe damage, and items with disrepair in the first round, zero in the second round, and one in the third round. The second property was targeted for demolition and land banking between August and December 2012, but the property was observed as residential in all three rounds. The property had three total damaged points of entry, items with severe damage, and items with disrepair in the first round, two in the second round, and only a single broken window in the third round. The property was almost certainly occupied in the third round. The occupant was visible on the property, there was a vehicle in the driveway, and yard or porch furniture was visible from the sidewalk. This property appears to be on an upward trajectory, but it is not clear why there was still a structure on the property even after the activity concluded. It is possible that the end date of the activity was a data error, the wrong activity was listed, the grantee decided not to demolish or land bank the property, or a new owner moved in.

The final property was targeted with acquisition and rehabilitation and financing between June 2012 and January 2013. This property is observed as an empty lot in the first round and as a residence in the second and third rounds. The property does not have any damaged points of entry, items with severe damage, or items with disrepair in either the second or third round, possibly suggesting new construction. This idea is supported based on the occupancy data. In both Round 2 and Round 3, the property showed signs of occupancy. The occupant was viewed on the property in the second round, and in both the second and third round, the property had well-maintained landscaping and yard or porch furniture.

6.5 Findings

At the time of the first observation, there were clear signs of visual distress in the sample blockfaces in both Cuyahoga and Palm Beach Counties. Signs of disrepair and blight were especially common in both counties, and in Cuyahoga damaged points of entry and signs of severe disrepair also were fairly widespread. In both counties, properties showing signs of visual distress generally showed multiple signs of distress, although in Cuyahoga County the severity of visual distress was more pronounced.

The differing levels of visual distress in the two counties could be explained in part by the strength of the housing markets. During the VTS observation period, the market in Cuyahoga County had not bottomed out, while the market in Palm Beach County was improving. The quarterly Housing Price Index for Cuyahoga County continued to drop until the second quarter of 2013, when the final observation took place. In Palm Beach County, however, prices bottomed out somewhere at or before the first observation (Exhibit 6–6), and prices increased every quarter after the first observation, with major gains occurring between the second and third observations. This section then can be viewed as a description of two counties situated in different economic climates. Section 6.5.1 reports the findings from Cuyahoga County; Section 6.5.2 examines the findings from Palm Beach County.

Exhibit 6–6: Percentage Change in the Quarterly Housing Price Index

Approximate VTS Observation	Year	Quarter	Cleveland-Elyria, Ohio	West Palm Beach-Boca Raton-Delray Beach, Florida (MSAD)
	2011	4	− 3.09	− 7.68
	2012	1	− 2.22	− 5.55
Round 1	2012	2	− 1.06	0.56
	2012	3	− 0.71	0.42
Round 2	2012	4	− 1.88	1.89
	2013	1	− 0.28	7.39
Round 3	2013	2	0.74	11.47
	2013	3	0.91	12.95

MSAD = Metropolitan Statistical Areas and Divisions. VTS = Visual Tracking Survey.

Source: Federal Housing Finance Agency Quarterly Housing Price Index for Cities, http://www.fhfa.gov/Default.aspx?Page=216.

6.5.1 Visual Characteristics of Properties in Cuyahoga County

Visual Characteristics at Baseline

Residential properties in Cuyahoga County displayed a fair amount of visual distress during the first observation.[44] As seen in Exhibit 6–7, 23 percent of properties in the Cuyahoga sample had broken points of entry, most of which were broken windows; 37 percent of properties had signs of severe damage; and 88 percent had other signs of disrepair. Cracked or peeling paint on a significant part of the property was the most common sign of severe damage in Cuyahoga County, but damage to railings, fences, gates, and rain gutters also was common. The most common signs of disrepair were cracks in the driveway and entryway steps and sagging or otherwise damaged porches. About one-half of all properties in the Cuyahoga sample showed signs of blight, most often trash on the property or deteriorating landscaping.

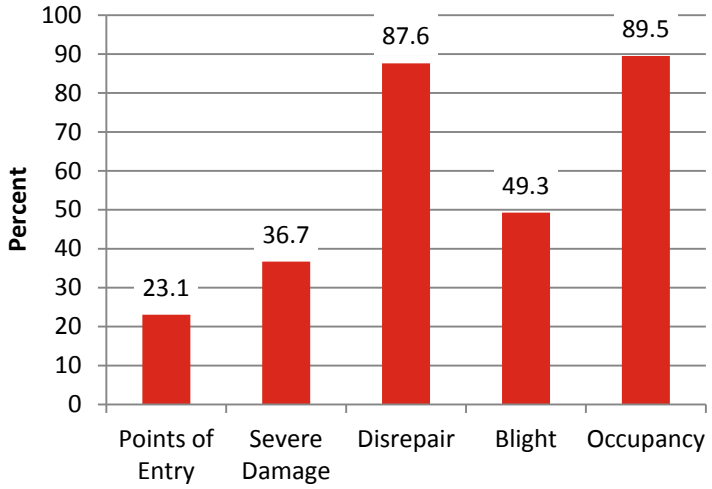
One of the reasons for selecting Cuyahoga County was that it is a rust belt county associated with anecdotal evidence of entire blocks being abandoned. Although many properties displayed signs of visual blight, the observers did not see many signs of abandonment. In fact, about 90 percent of properties showed signs of occupancy.

Looking at the number of visually distressed features on each property with some visual distress provides a better understanding of the severity of visual distress in each county. The data show that properties with any signs of visual distress are likely to have multiple signs. In Cuyahoga County, properties that had at least one damaged or broken point of entry had an on average of more than three damaged points of entry. Properties that had some severe damage had about two items with severe damage. A property that had some disrepair had generally between two and three items showing disrepair, and a property that had blight had between one and two signs of visual blight.

The evidence of severity suggests the instrument is correctly identifying visually distressed properties. If most properties only showed one sign of visual distress, it could be that the properties were in overall good condition but had one feature that needed repair. These data suggest that the properties identified as visually distressed really were of fair to poor quality. Having multiple damaged points of entry is not something easily explained as a routine maintenance deficiency. In general, a substantial proportion of properties had signs of visual distress, and those that did were likely to have multiple items in need of improvement.

[44] The figures in this section refer to the percentage of residential properties that had various visual characteristics. Even though a small number of nonresidential properties were in the sample, most of the survey items applied to residential properties only.

Exhibit 6–7: Percentage of Properties in Cuyahoga County With Signs of Visual Distress



Change in Visual Characteristics

Over the three rounds of observation, the overall level of visual distress remained fairly constant in Cuyahoga County, but many individual properties showed change for the better or worse. Exhibit 6–8 shows the percent of properties with signs of visual distress remained constant in each of the three observations. The only significant difference was a decrease in the percent of properties showing signs of visual blight, which went from 49 percent in the first round to 38 percent in the second round. The percentage of properties showing signs of visual blight went back up to 50 percent by the final observation, however. The inconsistent change in visual blight may have been influenced by the weather. A significant portion of the change is the result of a decrease in the percentage of properties that had trash visible on the property (36 percent in the first round to 19 percent in the second round). It is possible that because the second observation took place in October and November, temperatures had dropped to a point that there was less foot traffic in the area and, therefore, less opportunity for littering. In other words, these properties may not have been any better maintained. Instead, there may just have been less litter in the area overall.

Exhibit 6–8: Percentage of Properties With Visual Characteristics by Round

	Round 1 (%)	Round 2 (%)	Round 3 (%)
Points of entry	23.1	22.2	20.1
Severe damage	36.7	35.4	36.3
Disrepair	87.6	87.2	85.7
Blight	49.3	38.4***	50.3
N	477	477	477

Note: Asterisks represent significant differences from Round 1, where *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.10$.

Looking at the percent of properties with each characteristic, however, masks the volatility of property conditions in Cuyahoga County. As seen in Exhibit 6–9, many properties were changing over the three observations. About 25 percent of properties in the Cuyahoga sample either had more or fewer damaged points of entry visible to observers in a subsequent round. Just over 40 percent of properties showed more or less severe damage, and almost 70 percent of properties showed a change related to signs of disrepair. This suggests that even though the overall level of visual distress remained relatively constant in Cuyahoga County, the physical quality of individual properties was changing quite a bit.

Exhibit 6–9: Properties Getting Better and Worse in Cuyahoga County

	Round 1 to 2		Round 2 to 3		Round 1 to 3	
	N	%	*N*	%	*N*	%
Points of entry						
Worse	73	15.3	61	12.8	65	13.6
No change	344	72.1	362	75.9	353	74.0
Better	60	12.6	54	11.3	59	12.4
Severe damage						
Worse	90	18.9	116	24.3	101	21.2
No change	277	58.1	282	59.1	286	60.0
Better	110	23.1	79	16.6	90	18.9
Disrepair						
Worse	184	39.2	138	29.7	163	35.1
No change	152	32.3	154	33.1	158	34.0
Better	134	28.5	173	37.2	144	30.97
Blight						
Worse	76	15.9	134	28.1	111	23.3
No change	265	55.6	266	55.9	247	51.8
Better	136	28.5	77	16.1	119	25.0

Comparing Conditions of Financially Distressed and Non-Financially Distressed Properties

Properties in financial distress were more likely to show visual signs of distress than other properties. Exhibit 6–10 compares the visual characteristics of properties in financial distress with the characteristics of those not in financial distress in each of the three rounds. Financially distressed properties were consistently more likely to have damaged points of entry, more items with severe damage, and a higher blight score than properties not in financial distress. Properties in financial distress were approximately twice as likely to have damaged points of entry and had about a 10 percentage point higher probability of showing signs of severe damage or blight than properties that were not in financial distress. The two types of properties were equally likely to show signs of disrepair.

Even though properties in financial distress were more likely to show signs of visual distress, they did not appear to be more distressed when comparing them to other properties showing visual distress. Comparing properties with any visual distress revealed that both types of properties had the same number of items showing signs of distress. The only exception was that financially distressed properties showed slightly more signs of disrepair. In short, financially distressed properties were more likely to show signs of visual distress, but they did not show more severe signs of visual distress.

Exhibit 6–10: Percentage of Properties With Visual Distress in Cuyahoga County (*t*-tests)

		Round 1		Round 2		Round 3	
		Not Distressed	Distressed	Not Distressed	Distressed	Not Distressed	Distressed
Points of entry	Percent	20.4	41.7 ***	20.8	33.3 **	16.5	46.6 ***
	N	417	60	423	54	419	58
Severe damage	Percent	35.0	48.3 **	34.0	46.3 *	34.6	48.3 **
	N	417	60	423	54	419	58
Disrepair	Percent	87.3	90.0	87.5	85.2	85.4	87.9
	N	417	60	423	54	419	58
Blight	Percent	48.2	56.7	38.1	40.7	48.7	62.1 *
	N	417	60	423	54	419	58

Note: *t*-tests for significant differences between properties where * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

The consistent direction and magnitude of the difference suggests that financially distressed properties are less likely to be well maintained than those not in financial distress. Although this is not a surprising finding, it does provide evidence about the magnitude of the difference. It is interesting to note that the largest difference in Cuyahoga County between the two types of properties is in relation to damaged points of entry. An unsecured property could be an easy target for crime like theft, which could be another signal to potential investors that there is a problem in the neighborhood. It also is interesting to note that almost one in five properties not in financial distress on these blockfaces had damaged points of entry, and a third had severe damage. That suggests the extent of visual distress among all properties in Cuyahoga County was substantial.

Notably, none of the properties in financial distress in any of the three rounds displayed a posted notice of foreclosure. Although not all properties in financial distress would be expected to have a notice of foreclosure posted—for example, REO properties would not have a foreclosure notice—this result lends support to the idea that foreclosures are not visible to outsiders. A more common way for a property to visually distinguish itself from other properties may be through other signs of visual distress. This finding is supported by Graves (2012), who found that residents in a Boston neighborhood in many cases did not know which properties were foreclosures until there was a sale sign posted by the bank.

Comparing Property Conditions Based on Proximity to Concentrated Financial Distress

The contagion hypothesis suggests the existence of concentrated financial distress can have spillover effects and lead to a higher level of visual distress on nearby properties. To test this theory, blockfaces were separated by the concentration of financially distressed properties present on the blockface. Non-financially distressed properties on blockfaces that had multiple distressed properties (foreclosure-affected blocks) were compared to non-financially distressed properties on blockfaces that had either one or no financially distressed properties (other blocks).

The VTS found little evidence in Cuyahoga County to support the contagion theory. For the most part, properties on each type of blockface were equally likely to display signs of visual distress. In the third round, properties on foreclosure-affected blockfaces were about 10 percentage points more likely to show signs of disrepair than properties on other blockfaces. In the first two rounds, however, properties on foreclosure-affected blockfaces were *less* likely to show signs of blight. The conflicting nature of the

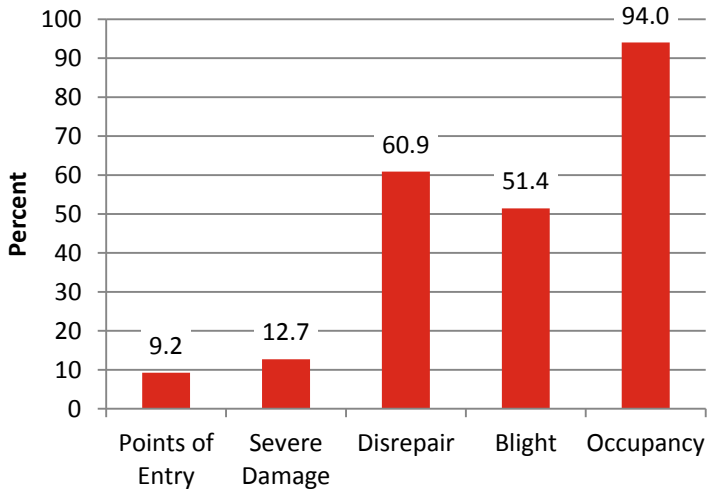
evidence suggests more work needs to be done on contagion theory. One possible explanation in the case of Cuyahoga County is the generally high level of financial distress in these areas so that no blockfaces have a low enough concentration of financial distress to make a meaningful comparison. Although some blockfaces did not have a property in the foreclosure process at the time of the observation, all blockfaces were located in areas that qualified to receive NSP2 funding and that had very high foreclosure concentration scores relative to other areas, as was discussed in Section 6.2.2. It is possible that selecting areas with a greater differentiation in terms of financial distress would allow for a better test of the theory.

6.5.2 Visual Characteristics of Properties in Palm Beach County

Visual Characteristics at Baseline

Properties in Palm Beach County were in fair condition. Properties were not likely to have damaged points of entry or signs of severe damage; however, many properties did show signs of disrepair and blight. As Exhibit 6–11 shows, only 9 percent of properties had signs of broken or damaged points of entry and 12 percent had signs of severe damage. Windows were the most commonly observed damaged point of entry. Damaged railings, fences, or gates accounted for most of the severe damage in Palm Beach County. These features were considered severely damaged only when they were missing numerous slats or had large holes. Although the level of severe damage was not high, 61 percent of properties had signs of disrepair. Although cracked driveways and entryway steps were prevalent in Palm Beach, the most common sign of disrepair was visible mold or mildew on the property. In addition, one-half of the properties in the Palm Beach blockfaces had visual signs of blight. The most common indicators of visual blight were deteriorating landscaping and trash in the yard. Nearly all of the properties observed (94 percent) showed signs of occupancy. The overall condition of the blockfaces appeared to be fairly good at the time of the first observation.

Exhibit 6–11: Percentage of Properties in Palm Beach County With Signs of Visual Distress



Although it was uncommon to see properties that had damaged points of entry or severe damage, properties that had at least one sign of visual distress generally had multiple signs of distress. Properties that had a damaged point of entry usually had between two and three damaged points of entry. Those that had severe damage generally had between one and two features showing severe damage. Properties showing any signs of disrepair generally had about two items in disrepair, and properties with blight had

between one and two indicators of blight. The presence of multiple indicators suggests that properties showing some signs of distress were probably in poor enough condition that they would catch someone's eye from the street. The evidence is more consistent with the idea that there were a few properties in poor condition and a larger number in fair condition.

Changes in Visual Characteristics

As seen in Exhibit 6–12, properties in Palm Beach County appeared to be changing consistently for the better over the three rounds of observation. By the final observation, fewer properties had damaged points of entry, signs of severe damage, signs of disrepair, and signs of blight than were observed in the first round. The percentage of properties that had broken points of entry was nearly halved, decreasing from 9 percent in Round 1 to 5 percent in Round 3. The percentage of properties showing signs of severe damage decreased by more than a third, dropping 5 percentage points, from 13 percent in Round 1 to 8 percent in Round 3. The percentage of properties showing signs of disrepair fell by a more modest 10 percent, and the number of properties showing signs of blight decreased by about a quarter from 51 percent in Round 1 to 38 percent in Round 3. Overall, things appeared to be improving in Palm Beach County.

Although it is clear that most of the improvement in Palm Beach County occurred between Round 1 and Round 2, it is unclear why. Observers may have become more conservative in using the instrument in the second and third rounds, but this is unlikely given that the same trend is not shown in Cuyahoga County. It is also possible that change is seasonal, with most improvement occurring in the summer months. It is plausible that people undertaking significant construction to repair severe damage or replace windows may be more likely to do so in the warmer summer weather.

Exhibit 6–12: Percentage of Properties With Visual Characteristics by Round

	Round 1 (%)	Round 2 (%)	Round 3 (%)
Points of entry	9.2	6.0 **	5.2 ***
Severe damage	12.7	7.7 ***	7.7 ***
Disrepair	60.9	54.1 ***	53.6 ***
Blight	51.4	36.4 ***	38.2 ***
N	519		

Note: Asterisks represent significant differences from Round 1, where *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.10$.

Looking at the number of properties getting better and worse on each of the individual measures (Exhibit 6–13) supports the trend of improvement in Palm Beach County. Between the first and last observation, about twice as many properties saw a reduction in the number of damaged points of entry, had fewer items with severe damage, and showed less blight than saw an increase in those items. The number of properties that had mitigated disrepair outnumbered those showing more disrepair by more than 10 percentage points. When looking both at the overall percent of properties showing signs of visual distress and the number of properties getting better and worse, there was apparently a decrease in visual distress in Palm Beach County during the observation period.

Exhibit 6–13: Properties Getting Better and Worse in Palm Beach County

	Round 1 to 2		Round 2 to 3		Round 1 to 3	
	N	%	*N*	%	*N*	%
Points of entry						
Worse	19	3.7	19	3.7	17	3.3
No change	462	89.0	477	91.9	463	89.2
Better	38	7.3	23	4.4	39	7.5
Severe damage						
Worse	22	4.2	32	6.2	27	5.2
No change	447	86.1	458	88.3	442	85.2
Better	50	9.6	29	5.6	50	9.6
Disrepair						
Worse	132	25.6	107	20.8	113	21.9
No change	222	43.0	260	50.6	227	44.0
Better	162	31.4	147	28.6	176	34.1
Blight						
Worse	59	11.4	102	19.7	68	13.1
No change	305	58.8	354	68.2	319	61.5
Better	155	29.9	63	12.1	132	25.4

Comparing Conditions of Financially Distressed and Non-Financially Distressed Property

Financially distressed properties in Palm Beach County were more likely to show signs of visual distress than other properties, although most of the differences dissipate by the third observation. Properties in financial distress were about twice as likely to show damaged points of entry as other properties and were almost three times as likely to show signs of severe damage in the first two rounds. Properties in financial distress were about 20 percentage points more likely to show signs of blight. The two types of properties did not differ in terms of disrepair. Comparing the severity of visual distress among properties with distress does not reveal any strong differences between the two types of properties. Both types of properties generally have the same number of distressed items when they have any items in distress. In other words, a person on the street would not be able to tell if a property was in financial distress from the severity of the visual distress observed.

Both financially distressed and nondistressed properties show improvement from Round 1 to Round 3, but the distressed properties do so well that they catch up to nondistressed properties in most cases (signs of blight being the exception). It is difficult to explain why there would be such a drastic improvement in the visual quality of distressed properties and not a comparable improvement in nondistressed properties. This could be symptomatic of a regression to the mean, where the first round observations were uncharacteristically bad for financially distressed properties. Another possibility is that more foreclosures at the first observation had been in foreclosure for a longer period of time than those in the final round, or local governments may have exerted extra pressure on REO holders to maintain their properties. In any case, the visual trend supports the idea that the market in Palm Beach County is improving.

Exhibit 6–14: Percentage of Properties With Visual Distress in Palm Beach County (*t*-tests)

		Round 1		Round 2		Round 3	
		Not Distressed	Distressed	Not Distressed	Distressed	Not Distressed	Distressed
Points of entry	Percent	8.5	16.0 *	5.4	13.2 *	5.4	2.5
	N	469	50	481	38	479	40
Severe damage	Percent	10.9	30.0 ***	6.4	23.7 ***	7.7	7.5
	N	469	50	481	38	479	40
Disrepair	Percent	61.0	60.0	53.4	63.2	53.4	55.0
	N	469	50	481	38	479	40
Blight	Percent	50.1	64.0 *	35.1	52.6 **	36.1	62.5 ***
	N	469	50	481	38	479	40

Note: *t*-tests for significant differences between properties, where * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Comparing Property Conditions Based on Proximity to Concentrated Financial Distress

The data in Palm Beach County more consistently support the idea of visual contagion. In Palm Beach County, properties located on foreclosure-affected blocks were slightly more likely to have damaged points of entry, between 5 and 10 percentage points more likely to have severe damage, and about 15 percentage points more likely to show signs of blight. In two of the three rounds, the differences rise to the level of statistical significance for signs of severe damage and in all three rounds for signs of blight. Although properties on foreclosure-affected blockfaces are about 5 percentage points more likely than properties on other blocks to show signs of disrepair in the first two rounds, they are almost 15 percentage points *less* likely in the third round. The fact that all other differences are in the expected direction seems to outweigh that aberrant result, however. The totality of the evidence lends some support to the idea that foreclosure-affected blockfaces suffer from a small spillover effect.

6.6 Conclusion

The VTS describes the conditions of a distinct set of properties in two counties over a 1-year period. The counties were observed at distinctly different times in their respective market recoveries. The results show a significant amount of visual distress in Cuyahoga County but an improving situation in Palm Beach County.

Perhaps the most interesting finding is that properties in financial distress are more likely to show signs of visual distress than properties that are not in the foreclosure process. Although they are more likely to be visually distressed, however, a casual observer would have a hard time picking out a foreclosure from the street based on the severity of visual distress. Properties also did not have posted foreclosure notices that would make it easy to identify them as such. This suggests that apart from their increased likelihood of showing visual distress, foreclosed properties may by unrecognizable from the street.

The results from the VTS regarding the existence of a contagion effect are unclear. There is little evidence of a contagion effect in Cuyahoga County, but in Palm Beach County there is some suggestion that nondistressed properties on foreclosure-affected blockfaces look worse than properties on other blockfaces. A future study that focuses on looking specifically at blockfaces that have higher and lower concentrations of distressed properties (rather than only areas with high concentrations as in the VTS) may provide more evidence to support this conclusion. In other words, the contagion effect may be clearer when comparing neighborhoods with a greater variation in quality.

The results from the VTS seem to contradict some anecdotal evidence from the foreclosure crisis, which shows entire blocks of boarded-up and visually distressed properties. Given the limited number of blockfaces included in the VTS (105), it is certainly possible that these pockets of extreme visual blight exist elsewhere. Indeed, the VTS data suggest that concentrations of visual blight exist, but the data also suggest that these examples may be less prevalent than the anecdotal evidence implies.

7. Vacancy and Tenure Status of NSP2 Properties

7.1 Introduction and Research Questions

For both homeowner and rental properties, the presence of a foreclosure usually displaces the current resident and creates a period of vacancy for the housing unit. The change in ownership also introduces a property transfer that may transition the property from homeownership to rental occupancy. Neighborhood Stabilization Program 2 activities may improve neighborhood stability in foreclosure-affected neighborhoods by encouraging occupancy and attracting investment from potential homebuyers. This chapter describes the vacancy and tenure status of *NSP2 properties* as of February 28, 2013, when both NSP2 and the study's analysis period ended.[45]

The analysis of NSP2 properties in this chapter has two primary components. The first component describes the vacancy status of NSP2 properties as of February 28, 2013. The analysis also describes the vacancy rates among non-NSP2 properties in NSP2 tracts. This analysis separates properties that were in each stage of the foreclosure process, examining the extent to which properties in distress and REO properties experienced higher levels of vacancy.

The second component of the analysis describes the tenure status of NSP2 properties before and after NSP2 intervention, as well as the patterns of tenure change among NSP2 properties. The analysis also describes the extent of tenure change among other foreclosures in NSP2 tracts, examining the extent to which foreclosure facilitated tenure change in NSP2 neighborhoods.

The hypothesized vacancy and tenure status of NSP2 properties varies considerably by activity type and by the timing of data collection relative to completion of NSP2 investment:

- Rehabilitation and redevelopment activities often involve intensive investment in the property and can require periods of vacancy while work is ongoing. Grantees used these activities to produce both homeowner and rental units, so the expected tenure status of a completed property depends on the grantee's strategy for neighborhood stabilization.

- Financing activities support homebuyers' purchase and occupancy of a home, so properties with completed financing activities are likely to be immediately occupied by a homeowner.

- Demolition and land banking activities clear structures that are almost always vacant. Although these activities reflect investment in the neighborhood, the result is often a cleared lot with no housing unit.

Because the nature of financing, demolition, and land banking activities are closely related to properties' vacancy and tenure status, many of the analyses in this chapter focus on acquisition/rehabilitation and redevelopment properties. Additionally, limitations with the available data—which are described in greater detail in Section 7.2 and Section 7.3—limit several analyses to single-family properties. Although

[45] Although the analysis in this chapter is purely descriptive, Chapter 8 examines the impact of NSP2 investments on neighborhood-level vacancy and homeownership rates based on a tract-level impact analysis. See also Ergrungor and Nelson (2012) for an analysis of the relationship between NSP2 investment and vacancy. Griswold et al. (2014) also examines the impact of demolitions on home equity and foreclosures in Cleveland during the period of NSP2.

these limitations limit the scope of the analysis in this chapter, the findings provide useful insight into the vacancy and tenure status of single-family acquisition/rehabilitation properties as of the NSP2 end date in February 2013.

7.2 Data and Measures

The analysis in this chapter describes the vacancy and tenure outcomes of NSP2 properties and other properties located in NSP2 tracts as of the end of the analysis period on February 28, 2013. The analyses use information from the NSP2 grantee data, the property-level U.S. Postal Service data, and the Foreclosure and Transactions data described in Chapter 3. This section defines the key measures and sample for the analyses.

Vacant. A property is defined to be vacant if it is coded as either Vacant or No-Stat in the USPS data as of March 2013. The USPS data defines a property to be Vacant if it has not collected mail for at least 90 days. It defines a property to be No-Stat if it is not active for mail delivery—for example, it is an abandoned property or a new property under construction. The vacancy status of NSP2 properties is only available at one point in time (March 2013), a date that corresponds to just after the end of the analysis period on February 28, 2013. Although other chapters of the report use longitudinal vacancy data collected at the census tract level, longitudinal information is not available at the property level.

This measure captures only longer term vacancy spells, excluding properties where mail collection is stopped for less than 90 days. We cannot observe the extent to which foreclosed and NSP2 properties experienced vacancy spells lasting less than 90 days. This measure may also understate vacancy to the extent that property owners vacate a property but continue to collect mail.

Investor Ownership. The measure of investor ownership relies on the buyer name on the transaction records in the Foreclosure and Transaction Data. A property is coded to be investor owned if the buyer name on the transaction record meets any of the following criteria:

- The buyer name suggests that the owner name is a corporate entity (for example, the name includes LLC, Inc., or similar terms).
- The buyer's mailing address is different from the property address, suggesting that the owner may be a rental landlord or absentee owner.
- The owner purchased four or more properties between January 2007 and February 2013.
- The owner purchased two or more properties in REO exit transactions between January 2007 and February 2013.
- The owner purchased a property in an REO exit transaction and resold the property within 12 months.

This measure includes properties owned by several types of entities. For example, nonprofit organizations and government agencies are coded as investor owners, in addition to individual and corporate investors. The measure is also likely to include empty lots and abandoned properties under the second criterion, including properties that have been demolished or land banked by NSP2 activities. This measure of investor ownership should therefore be interpreted to identify properties not occupied by a homeowner rather than properties being rented out by an investor-owner.

The measure of investor ownership is also subject to data limitations:

- The measure may identify homeowners who use PO boxes to be investor owners under the second criterion.
- The measure may identify homeowners with common names as investors under the third and fourth criteria. Less than 1 percent of properties are identified as having investor owners based on those criteria, however.
- The measure may not capture individual investors who buy the home as a homeowner but subsequently move and rent the property.

A final limitation of this measure is that tenure status can be observed only at the time of a transaction record, so the tenure status of properties prior to NSP2 intervention is not known for properties with no transaction record because the start date for the Foreclosure and Transactions data is 2000.[46] Despite these limitations, this definition has been the preferred measure of investor status used by existing studies of investors' role during the foreclosure crisis.[47]

Analysis Sample. The NSP2 grantee data provide information about the NSP2 activities and tenure outcomes of 6,105 NSP2 properties. This sample size is slightly smaller than the total number of NSP2 properties described in Chapter 5 because it excludes properties with NSP2 intervention start dates that began in March 2013 or later. The NSP2 intervention start date is defined as the earliest observed date of NSP2 acquisition or activity observed in the grantee data. For properties with an observed acquisition date, the NSP2 intervention start date is the acquisition date.[48] For properties that were not acquired, the NSP2 intervention start date is the earliest activity start date reported by the grantee. All 6,105 NSP2 properties have an intervention start date prior to February 28, 2013.

The NSP2 properties were matched with the Foreclosure and Transaction Data using the process outlined in Chapter 3. Exhibit 7–1 shows the match rate for the 6,105 NSP2 properties in the analysis sample. The first column shows that 80 percent of these properties were successfully matched to the Foreclosure and Transactions data. The incomplete matching for the remaining NSP2 properties may mean that (1) the property did not have a transaction between 2000 and February 2013; (2) the property's parcel boundaries have changed, resulting in a different address; or (3) the property is simply missing from the Foreclosure and Transactions data. The low match rate for properties with redevelopment activities is likely due to differences between the addresses of the newly developed units and the address associated with the prior parcel. It may also reflect redevelopment of parcels that were not residential prior to NSP2 intervention.

[46] See Chapter 3 for additional detail about the universe of properties in the Foreclosure and Transaction Data and the data cleaning steps used to construct the analysis sample and measures.

[47] See for example Ellen, Madar, and Weselcouch (2013), Immergluck (2013b), and Fisher and Lambie-Hanson (2012).

[48] Some grantees only reported activity start dates and did not provide acquisition dates for any properties. The NSP2 intervention date reflects the earliest activity start date for these properties.

Exhibit 7–1: Match Rate for NSP2 Properties Matched to the Vendor Transaction Data

	All NSP2 Properties	Properties by Activity Type[a]				
		AR	RD	LB	DE	FI
Total no. NSP2 properties	6,105	2,295	558	335	2,698	219
No. NSP2 properties matched to foreclosure and transaction data	4,877	2,054	236	268	2,119	200
Match rate (percent)	80	89	42	80	79	91

AR = acquisition/rehabilitation. DE = demolition. FI = financing. LB = land banking. NSP2 = Neighborhood Stabilization Program 2. RD = redevelopment.
[a]Properties with multiple activities are categorized into one of the five activity types, based on the first observed activity type in the following order: acquisition and rehabilitation, redevelopment, land banking, demolition, and financing.

The analysis does not include Kings County (New York) due to concerns about the completeness of the foreclosure information in the Foreclosure and Transaction Data. Exhibit 3–5 in Chapter 3 shows that the data for Kings County—which is coterminous with Brooklyn—includes only 1,227 foreclosure sales, far fewer than any other county. Because several of the analyses focus specifically on the subset of foreclosed properties, Kings County is excluded.

7.3 Findings

7.3.1 Vacancy Status of NSP2 Properties

The potential for vacancy during the foreclosure process is frequently described as a risk factor for neighborhood stability. Periods of vacancy may affect neighboring property values if the property and yard are not maintained. Vacant units may also attract crime by providing havens for criminal activity or by creating opportunities for theft and vandalism. This section describes the vacancy status in March 2013 of both NSP2 properties and other properties in census tracts where NSP2 activities occurred.

Exhibit 7–2 describes vacancy rates among single-unit NSP2 properties with acquisition/rehabilitation activities. The analysis excludes multiunit properties because we cannot observe the vacancy status of each unit in those properties. The sample is made up of all NSP2 properties either vacant (zero units) or with one unit prior to the NSP2 intervention that did not subsequently become multiunit properties.

The first column shows, for each county, the percentage of single-unit properties with vacancy data as a percentage of all acquisition/rehabilitation properties. The second column shows the sample size for the properties with vacancy data. For example, the row for Los Angeles County shows that vacancy data are available for 399 single-unit acquisition/rehabilitation properties, which account for 91 percent of all acquisition/rehabilitation properties in the county.

The completeness of the vacancy data varies widely across counties for several reasons:

- The address in the NSP2 grantee data could not be matched to the Foreclosure and Transaction Data (see Exhibit 7–1).
- The acquisition/rehabilitation properties in the county include multiunit properties.
- The NSP2 grantee data have no information about the number of units in the property.
- The USPS data did not contain vacancy information for the property.

The resulting sample is 1,667 of the 2,295 acquisition/rehabilitation properties (73 percent).[49]

The vacancy rates shown in the "All Properties" column show the percent of these properties that were vacant in March 2013. For example, the row for Los Angeles County shows that 25 percent of the 399 acquisition/rehabilitation properties were vacant.

These vacancy rates reflect the continued presence of NSP2 activities on some properties. The "Rehabilitation Completed by December 2012" column presents the vacancy rate for properties for which the grantee reported that rehabilitation work had been completed before the end of December 2012. The "Sold/Leased by December 2012" column presents the vacancy rate for properties for which the grantee reported that the property had been sold or leased before the end of December 2012. For example, the 41 single-unit acquisition/rehabilitation properties include 35 properties for which rehabilitation work was completed by the end of 2012 and 18 properties that had been sold or leased by the end of 2012. The vacancy rates are lowest among properties that had been sold/leased prior to December 2012, suggesting that the vacancy rates in the "All Properties" column reflect the timing of the vacancy data and NSP2 activities. Many of these properties had not yet completed rehabilitation work or had done so on the eve of the February 11, 2013, deadline for funds to be obligated. The vacancy rates for these properties should therefore decrease as the properties are resold or rented to new occupants.

Exhibit 7–2 does not present the vacancy status of redevelopment properties because of the low match rate to Foreclosure and Transactions data and the presence of many multiunit redevelopment properties. The resulting set of single-unit redevelopment properties accounts for a small proportion of all redevelopment properties and therefore may not provide reliable information.

The vacancy status of land banking, demolition, and financing properties is closely related to the nature of these activities. Land banking and demolition activities result in parcels that contain empty lots and, sometimes, vacant structures that would all be classified as Vacant under the USPS measure. Financing properties provided homebuyer assistance that would result in all cases in a homeowner-occupied structure. (Properties that received one of these activities in addition to an acquisition/rehabilitation activity are classified as acquisition/rehabilitation properties in Exhibit 7–2.)

[49] Exhibit 7–1 shows that 2,054 of the 2,295 acquisition/rehabilitation properties reported by grantees were successfully matched to the Foreclosure and Transaction Data. Of these matched properties, 1,681 (82 percent) are single-unit properties, 9 percent are multiunit properties, and 9 percent are missing information on the number of units. Vacancy data are missing for less than 1 percent of the resulting sample of single-unit properties.

Exhibit 7–2: Percentage of Single-Unit Acquisition/Rehabilitation Properties Vacant for 90 Days or More in March 2013 (U.S. Postal Service Data)

	All Properties			Rehabilitation Completed by December 2012		Sold/Leased by December 2012	
	Percent Observed	*N*	Percent Vacant	*N*	Percent Vacant	*N*	Percent Vacant
Boom-Bust Sand States	**87**	**1,300**	**29**	**880**	**19**	**619**	**10**
Los Angeles (California)	91	399	25	282	18	189	8
Maricopa (Arizona)	86	391	32	265	25	161	9
Miami-Dade (Florida)	67	85	61	42	33	26	27
Palm Beach (Florida)	79	116	41	51	25	41	17
Riverside (California)	100	41	41	27	33	18	11
Sarasota (Florida)	89	41	12	35	11	18	17
Stanislaus (California)	91	81	16	53	8	41	2
Washoe (Nevada)	100	146	12	125	7	125	7
Boom-Bust East Coast[a]	**33**	**58**	**50**	**43**	**49**	**11**	**27**
Cook (Illinois)	36	58	50	43	49	11	27
Washington, D.C.	0	0		0		0	
Boom-Stable	**8**	**13**	**15**	**13**	**15**	**0**	
Philadelphia (Pennsylvania)	13	13	15	13	15	0	
Ramsey (Minnesota)	0	0		0		0	
Slow Growth	**79**	**154**	**13**	**137**	**9**	**119**	**7**
Davidson (Tennessee)	67	59	14	57	12	42	10
Denver (Colorado)	90	95	13	80	6	77	5
Lagging/Declining	**54**	**142**	**37**	**100**	**26**	**51**	**6**
Cuyahoga (Ohio)	83	45	18	41	15	30	0
Ingham (Michigan)	0	0		0		0	
Pulaski (Arkansas)	74	77	44	47	34	21	14
Wayne (Michigan)	50	20	50	12	33	0	

[a]Kings County is omitted because of poor data quality.

Note: Percent Observed and *N* show the number and percent of all acquisition/rehabilitation properties that were single-unit properties in February 2013 and that have observed vacancy information. *N* = 1,667 of the 2,295 total acquisition and rehabilitation properties (73 percent).

To provide context for the vacancy rates of acquisition/rehabilitation properties, Exhibit 7–3 describes the extent of vacancy in March 2013 among all properties in NSP2 tracts.[50] The first column shows the

[50] With the exception of multifamily rental properties.

number of properties that have USPS vacancy information. Across all 18 counties that are included in this analysis, USPS vacancy data are available for 98 percent (608,226 of the 619,902) of the properties in the Foreclosure and Transaction Data for NSP2 census tracts.

The remaining columns separate the properties according to their foreclosure status as of February 28, 2013. The "FCL Filing" column shows the vacancy rate among properties that ended the analysis period with a filed foreclosure and no subsequent foreclosure sale or other transaction record. The "REO" column refers to properties that were in REO on February 28, 2013. The "Post-FCL/REO" column lists properties with an observed foreclosure sale between 2007 and February 2013 that had been resold to a new owner by the end of the analysis period. The remaining "No Distress" column lists all properties with no observed foreclosure sale after 2007 and that did not have a foreclosure filing as of February 28, 2013.

The vacancy rates show the percent of properties in each stage of the foreclosure process that had not received mail for at least 90 days in March 2013. For properties with each type of foreclosure status, the level of vacancy differs substantially across counties. The percent of No Distress properties that were vacant in March 2013 ranges from 1 percent in Los Angeles County to 28 percent in Wayne County. In nearly all counties, vacancy rates are lowest among No Distress properties and highest among REO properties. For example, the row for Maricopa County shows that the vacancy rate is 5 percent among No Distress properties, 7 percent among FCL Filing properties, 14 percent among REO properties, and 6 percent among Post-FCL/REO properties.

This pattern is consistent across all counties except for Riverside County and Pulaski County. In Pulaski County, the high vacancy rate is higher among No Distress properties than among properties with foreclosure filings, reflecting the fact that a high proportion of all properties in the NSP2 tracts were vacant as of March 2013. In Riverside County, the pattern may simply reflect small sample size—Riverside County has only 3 NSP2 tracts with 3,912 properties with observed vacancy outcomes.

A final finding from Exhibit 7–3 is that REO does not appear to be synonymous with vacancy in all counties. Instead, the vacancy rates among FCL Filing and REO properties varied widely across counties, and the vacancy rates for several counties suggest that many REO properties remained occupied. The vacancy rates understate actual vacancy in each county because the USPS measure does not capture vacancies lasting less than 90 days. Nonetheless, only 6 percent of the REO properties in NSP2 tracts in Los Angeles County had not received mail for at least 90 days, compared with 51 percent in Cuyahoga County. This suggests that the extent of vacancy among foreclosed properties may differ substantially across NSP2 neighborhoods in different types of housing markets.

Comparison of the vacancy rates for NSP2 properties with acquisition/rehabilitation activities with the vacancy rates in Exhibit 7–3 reflects the timing of the vacancy data relative to completion of NSP2 activities. Because many rehabilitation activities continued past February 2013, the vacancy rates shown in Exhibit 7–2 are premature and do not reflect the long-term outcomes of acquisition/rehabilitation properties.

Exhibit 7–3: Percentage Vacant in March 2013 by Foreclosure Status on February 28, 2013, Among Properties in Census Tracts With NSP2 Activities

	N	No Distress (Percent)	FCL Filing (Percent)	REO (Percent)	Post-FCL/REO (Percent)
Boom-Bust Sand States	**412,157**	**4**	**6**	**14**	**7**
Los Angeles (California)	126,801	1	1	6	4
Maricopa (Arizona)	147,358	5	7	14	6
Miami-Dade (Florida)	49,394	6	8	17	15
Palm Beach (Florida)	33,819	9	11	23	15
Riverside (California)	3,912	5	2	7	9
Sarasota (Florida)	6,984	6	17	21	13
Stanislaus (California)	33,643	2	3	9	5
Washoe (Nevada)	10,246	3	7	11	5
Boom-Bust East Coast[a]	**17,443**	**6**	**14**	**21**	**16**
Cook (Illinois)	10,237	7	14	22	19
Washington, D.C.	6,786	6	14	20	11
Boom-Stable	**49,913**	**3**	**7**	**21**	**9**
Philadelphia (Pennsylvania)	41,395	3	4	17	8
Ramsey (Minnesota)	8,518	4	13	26	10
Slow Growth	**48,015**	**3**	**5**	**17**	**7**
Davidson (Tennessee)	15,416	4	6	17	9
Denver (Colorado)	32,599	3	5	16	6
Lagging/Declining	**80,698**	**21**	**25**	**42**	**24**
Cuyahoga (Ohio)	20,843	10	21	51	21
Ingham (Michigan)	8,047	8	17	25	17
Pulaski (Arkansas)	5,037	15	11	34	19
Wayne (Michigan)	46,771	28	29	41	27

[a]Kings County is omitted because of poor data quality.

FCL = foreclosure. NSP2 = Neighborhood Stabilization Program 2. REO = Real Estate Owned.
Note: Sample includes all single-family detached, condominium, and townhome properties that are located in NSP2 tracts and have observed U.S. Postal Service data.

The implications of the vacancy rates described for NSP2 acquisition/rehabilitation properties described in Exhibit 7–2 are not clear. During the analysis period, many NSP2 properties that were acquired and rehabilitated remained vacant as grantees completed activities. Despite the vacancies, the NSP activities are likely to have acted as signals of investment in the neighborhood, carrying positive externalities for neighboring homeowners. Additionally, the NSP2 properties were removed from the immediate supply of foreclosed homes for sale, which may have eased downward pressure on neighborhood home prices in the short term. It is also possible, however, that these properties were subject to thefts and vandalism while NSP investments were being completed and before the properties were occupied. These possibilities carry differing implications for neighborhood stability, and the cumulative impact of these processes is not

known. Chapter 8, therefore, examines the impact of NSP2 investments on vacancy, tenure, and other outcomes related to neighborhood stability measured at the census tract level.

7.3.2 Tenure Status and Tenure Change Among NSP2 Properties

The remainder of this chapter examines the tenure status of NSP2 properties before and after NSP2 investment, as well as the tenure changes observed among other foreclosures in NSP2 tracts. The analysis shows the extent to which NSP2 investments facilitated tenure change.

The wave of foreclosures during the foreclosure crisis created a surplus of homes for sale in many neighborhoods. Although the glut of REO properties is well documented, little evidence exists about the tenure outcomes of foreclosed properties. This section first describes the tenure status of NSP2 properties prior to NSP2 investment. It then describes the tenure status of NSP2 properties following NSP2 investment and the associated patterns of tenure change. Lastly, it describes the patterns of tenure change observed among other foreclosed properties in NSP2 tracts.

Missing data on tenure status is a limitation for these analyses. Because a property's tenure status is only observed at the time of a transaction record in the Foreclosure and Transaction Data, tenure status before a foreclosure or before the start of NSP2 activity is not known for properties that did not have a transaction between 2000 and the foreclosure or the NSP2 investment. Properties' tenure status after a foreclosure or NSP2 activity is only known for properties with either records in the Foreclosure and Transactions data or usable information on tenure in the grantee data.

Exhibit 7–4 describes the tenure status of one- to four-unit NSP2 properties[51] prior to NSP2 intervention using the tenure information in the Foreclosure and Transaction Data. The analysis excludes properties that had five or more units either before or after NSP2 intervention because multifamily properties are likely to be investor owned and also have substantial missing data in the Foreclosure and Transaction Data. Not surprisingly, the 29 multifamily properties with information on tenure status prior to NSP2 intervention were all investor properties, and none of these properties has conclusive information about post-NSP tenure status in the Foreclosure and Transaction Data.

For NSP2 properties that were purchased out of foreclosure/REO, the pre-NSP2 tenure status reflects whether the property was owned by a homeowner or investor prior to the foreclosure. For the remaining set of NSP2 properties that do not have a preceding foreclosure, the pre-NSP2 tenure status reflects whether the property was owned by a homeowner or investor prior to the NSP2 investment.

The first column of Exhibit 7–4 shows the proportion of all NSP2 properties in each county that are one- to four-unit properties and that also have an observed tenure status prior to NSP2 intervention. These percentages differ from 100 percent because of the exclusion of multifamily properties, missing data on the number of units in the property, and missing data on tenure status prior to the NSP2 intervention. For example, the row for Washoe County shows that the 136 properties with data used for the analysis account for 93 percent of all NSP2 properties in the county. The low proportions of NSP2 properties analyzed in Cook, Philadelphia, Ramsey, Ingham, and Wayne counties reflect incomplete grantee data.

[51] Some of these properties are vacant lots and, therefore, have no observed housing units. These properties are included in the analysis sample of one- to four-unit NSP2 properties.

Exhibit 7–4: Tenure Status of One- to Four-Unit NSP2 Properties Prior to Intervention by Activity Type Based on the Foreclosure and Transaction Data

	All Activities			Acq/Rehabilitation		Redevelopment		Land Banking		Demolition		Financing	
	% Observed	N	% Investor	N	% Investor	N	% Investor	N	% Investor	N	% Investor	N	% Investor
Boom Bust Sand States	**73%**	**1407**	**73%**	**1258**	**78%**	**19**	**100%**	**0**	**.**	**2**	**100%**	**128**	**16%**
Los Angeles (CA)	87%	479	61%	393	73%	1	100%	0	.	0	.	85	6%
Maricopa (AZ)	76%	370	74%	370	74%	0	.	0	.	0	.	0	.
Miami-Dade (FL)	35%	101	87%	82	84%	18	100%	0	.	1	100%	0	.
Palm Beach (FL)	68%	159	79%	116	95%	0	.	0	.	0	.	43	37%
Riverside (CA)	89%	40	90%	40	90%	0	.	0	.	0	.	0	.
Sarasota (FL)	56%	40	65%	39	64%	0	.	0	.	1	100%	0	.
Stanislaus (CA)	88%	82	82%	82	82%	0	.	0	.	0	.	0	.
Washoe (NV)	93%	136	88%	136	88%	0	.	0	.	0	.	0	.
Boom Bust East Coast[a]	**26%**	**83**	**64%**	**47**	**91%**	**0**	**.**	**0**	**.**	**0**	**.**	**36**	**28%**
Cook (IL)	18%	47	91%	47	91%	0	.	0	.	0	.	0	.
District of Columbia (DC)	55%	36	28%	0	.	0	.	0	.	0	.	36	28%
Boom Stable	**1%**	**8**	**63%**	**4**	**25%**	**4**	**100%**	**0**	**.**	**0**	**.**	**0**	**.**
Philadelphia (PA)	2%	8	63%	4	25%	4	100%	0	.	0	.	0	.
Ramsey (MN)	0%	0	.	0	.	0	.	0	.	0	.	0	.
Slow Growth	**63%**	**145**	**62%**	**144**	**62%**	**0**	**.**	**0**	**.**	**0**	**.**	**1**	**100%**
Davidson (TN)	53%	55	95%	54	94%	0	.	0	.	0	.	1	100%
Denver (CO)	71%	90	42%	90	42%	0	.	0	.	0	.	0	.
Lagging/Declining	**8%**	**248**	**71%**	**114**	**70%**	**22**	**82%**	**70**	**61%**	**35**	**89%**	**7**	**43%**
Cuyahoga (OH)	12%	79	82%	36	72%	2	100%	26	100%	8	100%	7	43%
Ingham (MI)	0%	0	.	0	.	0	.	0	.	0	.	0	.
Pulaski (AR)	40%	92	79%	65	78%	18	83%	0	.	9	78%	0	.
Wayne (MI)	4%	77	48%	13	23%	2	50%	44	39%	18	89%	0	.

[a] *Kings County is omitted because of poor data quality.*

Note: Sample includes all 0-4 unit NSP2 properties with observed data on tenure status pre-NSP2. % Observed and N show the number and percent of all NSP2 properties with observed data (i.e. a match in the foreclosure and transactions data, observed grantee data that the property contained 0-4 units prior to NSP2, and an observed tenure status prior to NSP2 and any associated foreclosure).

The tenure status information shown in Exhibit 7–4 suggests that NSP2 properties with one to four units were disproportionately investor properties prior to the NSP2 intervention. For example, the figures for Washoe County show that 88 percent of the NSP2 properties were investor properties prior to the NSP2 intervention and that only 12 percent were homeowner properties. Washington, D.C., Denver County, and Wayne County are the only counties where the majority of one- to four-unit NSP2 properties were owned by homeowners prior to NSP2 intervention.

The remaining columns of Exhibit 7–4 show the pre-NSP2 tenure status of properties by activity type. Investor properties accounted for the majority of acquisition/rehabilitation, redevelopment, land banking, and demolition properties in most counties. Conversely, the majority of financing properties were owned by homeowners prior to the NSP2 activity. For example, only 6 percent of the 85 financing properties in Los Angeles County had investor owners prior to NSP2 intervention. Only 37 percent of the 43 financing properties in Palm Beach County and 28 percent of the 36 financing properties in Washington, D.C. were owned by investors prior to NSP2 investment.

Exhibit 7–5 describes the post-NSP2 tenure status of acquisition/rehabilitation properties, as well as the extent of tenure change among properties with information on pre-NSP tenure status in the Foreclosure and Transaction Data. Because many NSP2 properties do not have a transaction record following completion of NSP2 activities, post-NSP tenure status can only be observed for a small proportion of all NSP2 properties. For those properties, the post-NSP2 tenure status in Exhibit 7–5 reflects properties' tenure status immediately after NSP2 activities were completed. The first two columns show the number and percent of all acquisition/rehabilitation properties that have one to four units and also have information on post-NSP2 tenure status. For example, the row for Maricopa County shows that the 148 properties in the analysis account for 32 percent of all acquisition/rehabilitation properties in the county.

The figures in Exhibit 7–5 show that acquisition/rehabilitation properties disproportionately became homeowner properties. Although the percent of investor properties following the NSP2 intervention varies across counties, the figures for most counties show that the majority of properties became homeowner properties. For example, in Maricopa County, only 5 percent of the 148 acquisition/rehabilitation properties were investor properties following NSP2 intervention.

The remaining columns of Exhibit 7–5 describe the extent of tenure change among properties with a tenure status that could be observed both before and after NSP2 intervention. These columns show the proportion of properties that exhibit each combination of preforeclosure tenure status and postforeclosure tenure status:

- Homeowner to homeowner (HO/HO).
- Homeowner to investor (HO/IN).
- Investor to investor (IN/IN).
- Investor to homeowner (IN/HO).

Many of the properties transitioned from IN/HO. For example, 142 properties in Maricopa County have tenure status that can be observed both pre- and post-NSP2, and 70 percent of these properties transitioned from IN/HO. The caveat to these findings is that the post-NSP2 tenure status is only observed for a small proportion of properties.

Exhibit 7–5: Tenure Status of One- to Four-Unit Acquisition/Rehabilitation Properties After NSP2 Intervention Based on the Foreclosure and Transaction Data

	Post-NSP2 Tenure Status			Tenure Change				
	% Observed	N	% Investor	N	HO /HO	HO/IN	IN/IN	IN/HO
Boom Bust Sand States	**20%**	**305**	**6%**	**295**	**29%**	**1%**	**5%**	**64%**
Los Angeles (CA)	19%	84	6%	83	36%	0%	6%	58%
Maricopa (AZ)	32%	148	5%	142	25%	1%	4%	70%
Miami-Dade (FL)	18%	23	17%	23	22%	4%	13%	61%
Palm Beach (FL)	15%	22	5%	20	10%	0%	5%	85%
Riverside (CA)	0%	0		0				
Sarasota (FL)	28%	13	0%	12	83%	0%	0%	17%
Stanislaus (CA)	16%	14	14%	14	36%	7%	7%	50%
Washoe (NV)	1%	1	0%	1	0%	0%	0%	100%
Boom Bust East Coast[a]	**6%**	**11**	**91%**	**10**	**0%**	**0%**	**90%**	**10%**
Cook (IL)	7%	11	91%	10	0%	0%	90%	10%
District of Columbia (DC)	0%	0		0				
Boom Stable	**0%**	**0**		**0**				
Philadelphia (PA)	0%	0		0				
Ramsey (MN)	0%	0		0				
Slow Growth	**32%**	**63**	**6%**	**63**	**56%**	**0%**	**6%**	**38%**
Davidson (TN)	1%	1	100%	1	0%	0%	100%	0%
Denver (CO)	58%	62	5%	62	56%	0%	5%	39%
Lagging/Declining	**17%**	**44**	**25%**	**37**	**41%**	**0%**	**24%**	**35%**
Cuyahoga (OH)	43%	23	4%	18	39%	0%	6%	56%
Ingham (MI)	0%	0		0				
Pulaski (AR)	16%	17	59%	15	27%	0%	53%	20%
Wayne (MI)	10%	4	0%	4	100%	0%	0%	0%

HO/HO = Properties owned by a homeowner pre-NSP2 and a homeowner post-NSP2; HO/IN = Properties owned by a homeowner pre-NSP2 and an investor post-NSP2; IN/IN = Properties owned by an investor pre-NSP2 and an investor post-NSP2; IN/HO = Properties owned by an investor pre-NSP2 and a homeowner post-NSP2.

[a] *Kings County is omitted because of poor data quality.*

Note: Sample includes all 1-4 unit NSP2 properties with observed transaction data on tenure status post-NSP2. % Observed and N show the number and percent of all NSP2 properties with observed data (i.e. a match in the foreclosure and transactions data, observed grantee data that the property contained 1-4 units after NSP2, and an observed transaction record after NSP2 activities were completed).

Exhibit 7–6 replicates the information in Exhibit 7–5 using the information on post-NSP2 tenure status that is available from the grantee data. The advantage of this data source is that post-NSP2 tenure information is available for a higher proportion of acquisition/rehabilitation properties. The first two columns show the number and percent of all acquisition/rehabilitation properties that are known to be one- to four-unit properties. (These figures exclude multifamily properties and properties with missing information about whether the property contained one to four units.) The next three columns show the information reported by grantees about properties' tenure outcomes after the NSP2 intervention.

Exhibit 7–6: Tenure Status of One- to Four-Unit Acquisition/Rehabilitation Properties After NSP2 Intervention Based on Grantee Data

	Post-NSP2 Tenure Status					Tenure Change				
	% Observed	N	% Investor	% Owner	% Undet/Miss	N	HO /HO	HO/IN	IN/IN	IN/HO
Boom Bust Sand States	**95%**	**1422**	**19%**	**63%**	**18%**	**1030**	**20%**	**1%**	**22%**	**56%**
Los Angeles (CA)	97%	428	6%	75%	18%	316	31%	0%	6%	63%
Maricopa (AZ)	94%	427	5%	63%	31%	257	23%	0%	6%	70%
Miami-Dade (FL)	90%	114	4%	82%	13%	71	13%	1%	3%	83%
Palm Beach (FL)	94%	137	42%	52%	7%	110	4%	2%	46%	48%
Riverside (CA)	100%	41	10%	68%	22%	31	6%	3%	10%	81%
Sarasota (FL)	91%	42	48%	52%	0%	39	33%	3%	49%	15%
Stanislaus (CA)	98%	87	44%	53%	3%	79	15%	4%	39%	42%
Washoe (NV)	100%	146	62%	32%	6%	127	10%	2%	69%	19%
Boom Bust East Coast[a]	**66%**	**115**	**24%**	**47%**	**29%**	**36**	**8%**	**3%**	**8%**	**81%**
Cook (IL)	71%	115	24%	47%	29%	36	8%	3%	8%	81%
District of Columbia (DC)	0%	0				0				
Boom Stable	**10%**	**18**	**0%**	**0%**	**100%**	**0**	**0%**	**0%**	**0%**	**0%**
Philadelphia (PA)	18%	18	0%	0%	100%	0				
Ramsey (MN)	0%	0				0				
Slow Growth	**95%**	**185**	**44%**	**55%**	**1%**	**142**	**36%**	**2%**	**36%**	**26%**
Davidson (TN)	93%	82	100%	0%	0%	54	0%	6%	94%	0%
Denver (CO)	97%	103	0%	98%	2%	88	58%	0%	0%	42%
Lagging/Declining	**61%**	**162**	**7%**	**49%**	**44%**	**62**	**24%**	**5%**	**6%**	**65%**
Cuyahoga (OH)	100%	54	2%	98%	0%	36	28%	0%	0%	72%
Ingham (MI)	0%	0				0				
Pulaski (AR)	85%	88	11%	30%	59%	26	19%	12%	15%	54%
Wayne (MI)	50%	20	0%	0%	100%	0				

HO/HO = Owned by a homeowner pre-NSP2 and a homeowner post-NSP2; HO/IN = Owned by a homeowner pre-NSP2 and an investor post-NSP2; IN/IN = Owned by an investor pre-NSP2 and an investor post-NSP2; IN/HO = Owned by an investor pre-NSP2 and a homeowner post-NSP2.

[a] *Kings County is omitted because of poor data quality.*

Note: Sample includes all 0-4 unit NSP2 properties with observed grantee data on tenure status post-NSP2. % Observed and N show the number and percent of all NSP2 properties with observed data (i.e. a match in the foreclosure and transactions data and observed grantee data about whether the property contains 0-4 units).

The measure of post-NSP2 tenure status reflects the expected post-NSP2 tenure status of properties at the time that grantees reported data in the summer of 2013. For properties that had already been rented or resold, the tenure status measure reflects the actual tenure status of the property immediately following the NSP2 intervention. For the remaining set of properties, the tenure status measure reflects grantees' anticipated tenure status following reoccupancy of the property. The "Undet/Miss" column shows extent of properties for which no post-NSP2 tenure status was reported or for which the grantee indicated that the property would be sold but did not indicate whether it would be sold to a homeowner or an investor.

The information shown in the first panel of Exhibit 7–6 reinforces the finding from Exhibit 7–5 that a large proportion of acquisition/rehabilitation properties were resold to homeowners. For example, the row for Denver County shows that 98 percent of the 103 properties with usable grantee data were homeowner properties following the NSP2 intervention—and that the tenure status is unclear for the remaining 2 percent of properties. This pattern is not universal across all counties, however. For example, 100 percent of properties in Davidson County and 62 percent of properties in Washoe County are coded as investor properties in the grantee data—implying that they will be rental properties following NSP2 intervention. These include properties that will be retained and rented by the NSP2 grantee or subgrantee and properties that will be resold as rental properties.

The second panel of Exhibit 7–6 describes tenure changes among properties that have both pre-NSP2 tenure status in the Foreclosure and Transaction Data and post-NSP2 tenure status in the grantee data. The first column shows the number of one- to four-unit properties in the analysis sample for each county. The remaining columns show the proportion of these properties that exhibit each type of tenure transition. For example, the row for Stanislaus County describes the tenure changes exhibited by the 79 acquisition/rehabilitation properties that have tenure information both before and after the NSP2 intervention. It shows that 15 percent of these properties transitioned from HO/HO, 39 percent of properties transitioned from IN/IN, 42 percent of properties transitioned from IN/HO, and 4 percent of properties transitioned from HO/IN.

The tenure change patterns shown vary widely from county to county. Nonetheless, the outcomes suggest that the cumulative effect of NSP2 acquisition/rehabilitation and redevelopment activities in many counties was to produce homeowner properties. This outcome differs markedly from the patterns of tenure change that are observed among other foreclosures in NSP2 tracts.

Exhibit 7–7 describes the extent of tenure change among all foreclosures of single-family detached, condominium, and townhome properties in NSP2 tracts that were sold to a new homeowner or investor following the foreclosure. The first panel describes the tenure changes among all foreclosures with a resale to a homeowner or investor buyer prior to February 28, 2013, while the second panel shows the properties that had been resold by 2 years earlier, February 28, 2011. The first two columns in each panel show the number and percent of all foreclosures in the NSP2 tracts that have observed tenure information both before and after the foreclosure. The remaining columns show the proportion of properties that exhibit each combination of preforeclosure tenure status and postforeclosure tenure status.

For example, the figures for Los Angeles County show that of 17,208 foreclosed properties, 64 percent transitioned from HO/HO, 13 percent transitioned from HO/IN, 18 percent transitioned from IN/IN, and 5 percent transitioned from IN/HO. In each case, investor status reflects the measure defined in Section 7.2 and includes several types of nonhomeowner buyers.

The figures in the first panel of Exhibit 7–7 show that a substantial proportion of foreclosed homeowner properties transitioned to investor owners following REO exit—or the foreclosure auction if the property did not enter REO. In every county, the proportion of properties that transitioned from HO/IN exceeds the proportion that transitioned from IN/HO. More than one-half of the homeowner properties transitioned to investor ownership in Cuyahoga, Pulaski, and Wayne counties.

Because the tenure changes shown in the first panel of Exhibit 7–7 are based on the immediate outcome of the property post-REO, some of these transitions may reflect short-term changes in which investors purchase REO properties that they will resell to homeowners.[52] Therefore, the second panel of Exhibit 7–4 shows similar information for the subset of foreclosed properties in NSP2 tracts that were resold to a new homeowner or investor at least 2 years before the end of the analysis period—prior to February 28, 2011. The measure of postforeclosure tenure status in this panel reflects the last observed transaction record prior to February 28, 2013, rather than the ownership status immediately following the foreclosure/REO period. Thus, the figures in the second panel follow each property for at least 2 years to document the longer term tenure outcomes of foreclosed properties.

The tenure status changes shown in the second panel of Exhibit 7–7 suggest that many of the properties that transitioned from HO/IN at the time of the REO exit were subsequently resold to homeowners. In every county, the proportion of foreclosures that transitioned from HO/IN is lower in the second panel than in the first panel. The revised percentages are more similar to the proportion of foreclosed properties that transitioned from IN/HO, reducing concerns about a net decrease in the proportion of homeowners in NSP2 neighborhoods. For example, in Washington, D.C., 5 percent of the properties transitioned from HO/IN, while 4 percent transitioned from IN/HO.

The Lagging/Declining counties are the exception to this pattern. In each of these counties, the tenure change patterns for foreclosed properties resold prior to February 28, 2011, suggest that many foreclosed homeowner properties made longer term transitions to investor ownership. For example, in Wayne County, 28 percent of the foreclosed properties resold prior to February 28, 2011, were homeowner properties prior to foreclosure and investor properties at the end of the analysis period in February 2013. The figures for Cuyahoga County, Ingham County, and Pulaski County similarly show higher rates of HO/IN transitions than IN/HO transitions.

[52] Additionally, these figures may be subject to any inaccuracy in the identification of REO exit transactions. Chapter 3 defines the approach used to identify REO transactions and discusses the steps taken to increase the accuracy of this measure.

Exhibit 7–7: Tenure Change Among All Foreclosures in NSP2 Tracts

	Foreclosures Resold Prior to 2/28/2013						Subset Resold Prior to 2/28/2011					
	% Observed	N	HO /HO	HO/IN	IN/IN	IN/HO	% Observed	N	HO /HO	HO/IN	IN/IN	IN/HO
Boom Bust Sand States	**79%**	**79638**	**49%**	**11%**	**35%**	**6%**	**93%**	**51414**	**59%**	**5%**	**31%**	**5%**
Los Angeles (CA)	84%	17208	64%	13%	18%	5%	95%	11780	79%	3%	14%	4%
Maricopa (AZ)	80%	42596	43%	10%	41%	7%	94%	27114	51%	6%	37%	7%
Miami-Dade (FL)	62%	4781	34%	16%	46%	4%	89%	2861	49%	5%	43%	3%
Palm Beach (FL)	65%	3797	39%	13%	43%	5%	92%	1804	52%	5%	41%	2%
Riverside (CA)	86%	768	58%	8%	30%	3%	93%	507	63%	5%	28%	4%
Sarasota (FL)	70%	638	35%	15%	47%	3%	90%	376	47%	5%	46%	2%
Stanislaus (CA)	86%	7880	60%	5%	31%	3%	94%	5728	64%	4%	31%	2%
Washoe (NV)	84%	1970	59%	7%	30%	4%	91%	1244	69%	2%	27%	1%
Boom Bust East Coast[a]	65%	**1720**	**32%**	**16%**	**49%**	**3%**	82%	**1211**	**45%**	**6%**	**46%**	**3%**
Cook (IL)	63%	1162	27%	12%	59%	2%	83%	781	33%	6%	59%	3%
District of Columbia (DC)	70%	558	44%	24%	26%	6%	79%	430	66%	5%	24%	4%
Boom Stable	44%	**2121**	**35%**	**21%**	**38%**	**6%**	68%	**1343**	**55%**	**6%**	**35%**	**4%**
Philadelphia (PA)	35%	816	26%	23%	45%	6%	57%	477	52%	3%	41%	4%
Ramsey (MN)	52%	1305	41%	19%	34%	6%	76%	866	56%	8%	32%	4%
Slow Growth	79%	**8602**	**45%**	**12%**	**36%**	**6%**	88%	**5623**	**59%**	**3%**	**32%**	**6%**
Davidson (TN)	69%	1267	45%	13%	33%	9%	81%	699	59%	3%	32%	6%
Denver (CO)	82%	7335	45%	12%	36%	6%	89%	4924	59%	4%	32%	6%
Lagging/Declining	59%	**12555**	**25%**	**29%**	**43%**	**3%**	74%	**9308**	**28%**	**23%**	**44%**	**5%**
Cuyahoga (OH)	54%	2744	19%	22%	57%	3%	68%	1973	26%	12%	58%	4%
Ingham (MI)	68%	995	35%	18%	43%	4%	80%	691	36%	9%	51%	4%
Pulaski (AR)	48%	253	19%	26%	51%	4%	68%	156	26%	11%	60%	3%
Wayne (MI)	61%	8563	26%	32%	39%	3%	76%	6488	27%	28%	39%	6%

HO/HO = Properties owned by a homeowner pre-NSP2 and a homeowner post-NSP2; HO/IN = Properties owned by a homeowner pre-NSP2 and an investor post-NSP2; IN/IN = Properties owned by an investor pre-NSP2 and an investor post-NSP2; IN/HO = Properties owned by an investor pre-NSP2 and a homeowner post-NSP2.

[a] *Kings County is omitted because of poor data quality.*

Note: Sample includes all single-family detached, condominium, and townhome properties that are located in NSP2 tracts. % Observed and N show the number and percent of all foreclosures in the NSP2 tracts that have both an observed tenure status prior to the foreclosure and an observed tenure status following foreclosure/REO.

7.4 Conclusion

The analysis in this chapter describes the vacancy and tenure status of NSP2 properties shortly after the end of the analysis period. The first component of the analysis describes the vacancy status of single-unit acquisition/rehabilitation properties using a measure based on USPS data. The second component of the analysis examines the tenure status of one- to four-unit acquisition/rehabilitation properties before and after the NSP2 intervention, describing properties' post-NSP2 tenure status using the Foreclosure and Transaction Data and the information reported in the grantee data. The analyses compare these outcomes to the patterns of vacancy and tenure observed among all foreclosed properties in NSP2 tracts.

The patterns of tenure change among all foreclosures in NSP2 tracts do not suggest that foreclosures resulted in long-term tenure change. Although many REO properties are initially purchased by investors, many of these transitions appear to have been temporary, with investors reselling the properties to homeowners by February 2013. Instead, most foreclosures in NSP2 tracts exhibit the same tenure status at the end of the analysis period that they had prior to foreclosure. The exception is in L/D counties, where between 9 percent (Ingham County) and 28 percent (Wayne County) of all foreclosures transitioned from HO/IN and remained investor owned at the end of the analysis period.

The vacancy status of these properties suggests that the relationship between foreclosure and vacancy varied across counties in response to the strength of the local housing market. Although properties in distress and REO consistently show higher vacancy rates than nondistressed properties, the level of vacancy among REO properties varied widely. For example, 51 percent of REO properties in Cuyahoga County had not received mail for at least 90 days, compared with only 6 percent of REO properties in Los Angeles County. Although these figures do not include short-term vacancies lasting less than 90 days, they highlight the extent to which the issues facing NSP2 grantees differed across counties.

The analysis of NSP2 properties focuses on the vacancy and tenure outcomes of acquisition/rehabilitation properties because of the nature of land banking, demolition, and financing activities and the high frequency of missing data among redevelopment properties. Demolition and land banking activities remove housing units from the available stock, producing empty lots or vacant properties maintained by the land bank. Although these properties would all be considered vacant, this outcome nonetheless reflects investment in the property that could be expected to have a positive rather than a negative effect on the stability of the neighborhood. Very few demolition and land banking properties had usable information on their tenure status either before or after NSP2 intervention.

Financing activities provided downpayment assistance to homeowners and involved occupancy of the property by a homeowner as the direct result of the NSP2 transaction. The available information on these properties' pre-NSP2 tenure status suggests that the majority of financing properties were previously owned by homeowners, although some financing properties transitioned from investors to homeowners through the NSP2 transaction. For example, 16 percent of the 128 financing properties analyzed in Boom-Bust Sand States counties were previously owned by investors.

The findings for acquisition/rehabilitation properties vary across counties and reflect the different strategies taken by grantees. In many counties, the tenure outcomes of NSP2 properties suggest that grantees primarily targeted investor-owned properties and used NSP2 investment to produce homeowner units. Although this pattern is common across many counties, it is not universal. For example, Washoe County and Davidson County placed greater emphasis than other counties on the development of rental properties.

The vacancy outcomes of acquisition/rehabilitation properties reflect the interim nature of the vacancy data and vary widely across counties. For example, the vacancy rates among single-unit acquisition/rehabilitation properties ranged from 12 percent in Sarasota County and Washoe County to 61 percent in Miami-Dade County. These vacancy rates are likely to decrease in both counties as NSP2 activities are completed and additional properties become ready for reoccupancy.

Taken together, the vacancy and tenure outcomes of NSP2 properties suggest that the implications of NSP2 investment differ widely across counties, depending on grantees' choice of NSP2 activities and the types of properties they targeted for investment. NSP2 grantees in L/D counties emphasized demolition and land banking, so the cumulative impact of NSP2 activities is likely to be the conversion of blighted structures to empty lots. Conversely, many of the counties that emphasized acquisition/rehabilitation, redevelopment, and financing activities appear to have targeted investor properties and used NSP2 investment to produce homeowner units. Although this strategy is not universal, it suggests that the impact of NSP2 properties in many communities was to support the rehabilitation and redevelopment of rental properties for conversion to homeownership.

8. The Impact of NSP2 on Neighborhoods

As the name implies, the Neighborhood Stabilization Program was intended to provide support for distressed neighborhoods that were hardest hit by the housing crisis of 2007 to 2009. The Notice of Funding Availability required applicants to identify geographic areas eligible for intervention, defined as census tracts with high levels of foreclosures and vacancies. As discussed in previous chapters, the logic behind NSP2 is that foreclosures and related financial distress have spillover effects on nearby properties. By creating visual blight and excess supply, foreclosures reduce nearby property values, induce future foreclosures and property abandonment, and may lead to decreases in owner occupancy. In neighborhoods with high rates of distressed properties, the spillover effects may create negative feedback loops that result in neighborhoods in which private capital investment dries up and remaining residents face a reduced quality of life. NSP2 was intended to break the downward spiral of distressed neighborhoods by reducing the stock of distressed properties, removing visual blight and sites conducive to crime, and signaling to current and potential residents that the neighborhood could improve. Thus an important component of the evaluation is to determine whether census tracts that received NSP2 investments experienced better housing market outcomes in the wake of the investment—such as higher housing prices, lower vacancy rates, longer tenure rates, and less mortgage distress—than those tracts would have experienced without NSP.

A significant difference between NSP1 and NSP2 is NSP2's emphasis on concentrated investment. Whereas NSP1 resulted in small amounts of funding being spread over spatially dispersed areas, NSP2 allows grantees to spend sufficient funds in targeted areas to achieve a scale of intervention that could halt the downward spiral. The range of allowed uses—from rehabilitation and redevelopment to demolition of blighted structures—is intended to give grantees flexibility to tailor their strategies to local housing market conditions, rather than to impose a one-size-fits-all approach on widely differing neighborhoods. Grantees are required to demonstrate their ability to leverage NSP2 funds, which in practice encourages them to work in areas with prior community development activity and with outside organizations that are committed to working in targeted neighborhoods.

This chapter examines the tract-level outcomes of NSP2 and NSP2's impacts on surrounding neighborhoods. Section 8.1 reviews a few key challenges in examining tract-level impacts. Section 8.2 provides context for NSP2 tracts prior to intervention and compares housing market trajectories in NSP2 tracts and non-NSP2 tracts over time. Section 8.3 describes the size, type, and concentration of NSP2 activities in treated neighborhoods, comparing NSP2 output across counties and market types. Section 8.4 discusses the data sources, variable construction, and methodology used to estimate tract-level impacts of NSP2 on housing market outcomes. Section 8.5 presents regression results by market type, by county, and finally by focusing on tracts with higher concentrations of NSP2 investment. Section 8.6 summarizes main findings and concludes the chapter.

8.1 Challenges to Examining Tract-Level Impacts

The primary challenge in assessing whether NSP2 improved outcomes in neighborhoods that received investment is determining what the trajectory of NSP2-treated tracts would have been in the absence of the program. As intended by the U.S. Department of Housing and Urban Development and Congress, NSP2 investments were made in tracts with highly distressed housing markets and weak fundamentals—low income and educational attainment, housing prices, and homeownership rates—prior to intervention. Therefore, in the absence of NSP2, we would expect housing outcomes in NSP2 tracts to be worse over

the course of the recovery than those in non-NSP2 tracts, which on average were less distressed previously. In theory it would be possible for NSP2 to improve outcomes, relative to no intervention, while measurable outcomes continued to decline both in absolute terms and relative to previously more advantaged tracts. For instance, suppose housing prices in NSP2 tracts were declining by 10 percent annually prior to intervention, while prices in non-NSP2 tracts declined by 8 percent. Suppose that after NSP2, prices in NSP2 tracts continued to decline by 5 percent annually, while prices in non-NSP2 tracts rose by 1 percent. Whether NSP2 had a positive impact on the affected tracts requires an estimate of the counterfactual, which is complicated by the fact that NSP2 tracts were selected based on their weak fundamentals prior to intervention. Critical to the analysis, therefore, is identifying an appropriate comparison group of neighborhoods that were similar to NSP2 tracts prior to program implementation but that did not receive NSP2 investment. As will be discussed below, propensity score matching was used to identify appropriate control tracts, which are then used in a difference-in-differences analysis of housing market outcomes.

Also key to the analysis is that strategies for NSP2 intervention varied widely across counties, making it difficult to compare generic "treatment" effects. That is, it is likely that a tract that received NSP2 funding primarily for demolition of blighted structures, resulting in a smaller housing stock but increased prevalence of empty lots, may have different housing outcomes than a tract that primarily received investment for rehabilitation or redevelopment. Because of variation in initial housing market conditions, grantee characteristics, and implementation strategies, the most accurate method of analyzing NSP2 impacts is to compare outcomes across tracts within a county, contingent on the county having a sufficient number of NSP-treated and control tracts. Such analysis is conducted for the seven largest counties in the sample: Cook, Cuyahoga, Los Angeles, Maricopa, Miami-Dade, Philadelphia, and Wayne.

Another approach is to estimate pooled regressions on groups of counties with similar housing markets and similar approaches to implementing NSP2. Most of the tract-level analysis uses a simple indicator variable for NSP2-treated tracts, which provides more reliable estimates if the type of treatment is similar in all treated tracts within the pooled counties. Combined with small sample size at the tract level, the findings from the PSM that identified control tracts made it necessary to make a few adjustments to the county groupings, relative to the market types that were used to create the sample and for the description of program implementation and outputs in prior chapters. Because of the small number of total and NSP2-treated tracts, the Boom-Stable (Philadelphia and Ramsey) and Slow Growth (Davidson and Denver) counties are combined into an Other category. Cook County, which was grouped with Kings County and Washington, D.C. in Boom-Bust East Coast, implemented NSP2 quite differently from those counties and, according to the PSM results, also applied different selection criteria in picking NSP2 tracts.[53] Thus, for the purpose of this analysis, Cook County is moved to the Other category. Finally, Pulaski County is moved from Lagging/Declining to Other, again because NSP2 implementation in Pulaski County differed from that in Wayne and Cuyahoga Counties (rehabilitation versus demolition). The Other category thus contains a heterogeneous sample of counties, and results for this group of counties should be interpreted with caution. The most robust results of the tract-level analysis come from the within-county analysis for large counties.

[53] Kings County and Washington, D.C. largely provided standalone financing, mostly of multifamily properties, while Cook County used a mixture of rehabilitation/redevelopment and demolition.

Lastly, as discussed in Chapter 4, many grantees faced difficulties concentrating NSP2 investment in small spatial areas, as initially intended by program design. Thus, the overall scale of NSP2 intervention at the tract level is quite small; most tracts that received some NSP2 investment only contained a small number of NSP2 properties, and these properties were usually not spatially concentrated. The spatially diffuse distribution of NSP2 investments reduces the likelihood of detecting significant impacts from the program.

8.2 Context of NSP2 Neighborhoods

As highlighted in Chapter 5, grantees selected NSP2 tracts based on a number of criteria, including age and condition of the housing stock; political considerations; and presence of anchor institutions, NSP1 investments, and other community development efforts. These factors imply that NSP2-treated tracts systematically differed from untreated tracts prior to intervention and may have faced different trajectories in the absence of NSP2. This section provides descriptive evidence of initial differences between NSP2 tracts and other tracts in sampled counties and shows the trajectory of various housing outcomes in NSP2 tracts over time. Exhibit 8–1 provides a summary of the key measures and associated data sources for this chapter.

8.2.1 Baseline Tract Characteristics

As intended, NSP2 grantees targeted their investment in tracts that had fundamentally and observably weaker housing markets and more signs of housing distress prior to NSP2. Exhibit 8–2 compares characteristics of population, housing markets, and distress indicators in 2008 across tracts that later received NSP2 investment (hereafter NSP2 tracts) and all tracts in those same counties that did not receive NSP2 investment (non-NSP2 tracts).

Although the housing crisis hit neighborhoods in central cities as well as those in suburban or exurban locations, within the 19 sample counties, tracts that received NSP2 investment were more likely to be in central cities (80 percent) than non-NSP2 tracts (62 percent). On average, NSP2 tracts had lower population density, higher shares of African-American and Hispanic populations, lower median household incomes, and lower educational attainment (higher share of residents with only high school degrees).[54] One- to four-family properties, which were generally most vulnerable to foreclosure, comprised a slightly larger share of the housing stock in NSP2 than non-NSP2 tracts (68 percent to 61 percent). Not surprisingly, given the lower household income and educational attainment, as of 2008 housing sale prices in NSP2 tracts were less than half those in non-NSP2 tracts (about $150,000 per housing unit relative to $310,000).[55] There were no significant differences across tracts in the rate of housing price appreciation during the bubble, however; both NSP2 and non-NSP2 tracts saw 73- to 76-percent price increases from 2000 to 2006, although of course the NSP2 tracts grew from a smaller base. NSP2 tracts had slightly higher volumes of home sales in 2008, relative to the size of the housing stock (81 sales per 1,000 housing units in NSP2 tracts), with a substantially larger share of purchases going to investors, rather than owner occupants (57 percent of properties purchased in NSP2 tracts compared with

[54] Even among central-city tracts, NSP2 tracts had lower population density than non-NSP2 tracts, perhaps because NSP2 was targeted at tracts with high vacancy rates that had suffered population losses.

[55] All dollar values are adjusted to constant 2012 values, using the Consumer Price Index for all urban consumers, by census region.

41 percent in non-NSP2 tracts). The rate of mortgage loan originations, relative to total housing units, was lower in NSP2 tracts, which combined with the frequency of home sales may imply greater prevalence of cash purchases.

Exhibit 8–1: Variable Definitions and Sources

Variable	Definition	Source
NSP activity/treatment status		
NSP tract	= 1 if at least one NSP2 property in tract; = 0 otherwise	Grantee data
NSP properties	Total no. NSP properties in tract	Grantee data
NSP units	Total units in NSP-treated properties in tract, post treatment	Grantee data
NSP spent	Total dollar value of NSP spent in tract (not average/property)	Grantee data
NSP distance	Average distance of NSP properties to five nearest NSP properties	Grantee data
Housing market outcomes		
Price	Median sales price of arm's-length housing sales (3-year average)	CoreLogic
Sales rate	Total arm's-length sales (3-year average) per 1,000 housing units	CoreLogic, ACS
Distress rate	Properties in any stage of mortgage distress per 1,000 housing units	CoreLogic, ACS
Vacancy rate	Vacancies per 1,000 housing units	USPS, ACS
Investor percentage	Investor purchases/total purchases	CoreLogic
Population and housing market characteristics		
Central city	= 1 if tract belongs to designated central city; = 0 otherwise	Office of Management and Budget
Population density	Population density (per square mile)	ACS 2005–09
Hispanic	Percent Hispanic	ACS 2005–09
African-American	Percent African-American	ACS 2005–09
Income	Median household income	ACS 2005–09
No high school graduation	Percent population age 24+ with high school degree or less	ACS 2005–09
Housing for one to four families	Percent housing units in one- to four-family properties	ACS 2005–09
DPrice, 2000–06	Percent change in median housing price, 2000–06	CoreLogic
Mortgage rate	Mortgage originations (purchase + refinancing) per 1,000 housing units	HMDA, ACS
High-cost loans	Percent conventional mortgages designated as high cost	HMDA

ACS = American Community Survey. HMDA = Home Mortgage Disclosure Act. NSP = Neighborhood Stabilization Program. USPS = U.S. Postal Service.

Exhibit 8–2: Comparison of NSP2 and Non-NSP2 Tracts (2008)

	NSP2 Tracts	Non-NSP2 Tracts	NSP2 − Non-NSP2
Population characteristics			
Central city	0.80	0.62	0.18
Population density	11,347	13,221	− 1,874
Hispanic (percent)	34.96	25.59	9.37
African-American (percent)	39.63	20.99	18.64
Income	43,690	64,050	− 20,360
Population with less than 12 years of education (percent)	30.56	19.63	10.92
Housing markets			
One- to four-family properties (percent)	67.95	61.11	6.84
Price	150,048	310,869	− 160,821
Change in price, 2000–06 (percent)	76.14	72.78	3.36
Sales/1,000 housing units	81.10	74.56	6.54
Investor purchases (percent)	57.44	40.57	16.87
Mortgages/1,000 housing units	36.95	45.63	− 8.69
Indicators of housing distress			
Distressed properties/1,000 housing units	57.88	31.56	26.32
Vacancies/1,000 housing units	118.83	75.90	42.93
High-cost loans (percent)	19.85	11.27	8.57
N	862	7,443	− 6,581.00

NSP2 = Neighborhood Stabilization Program 2.

Sources: Data on population characteristics comes from the 2005–2009 American Community Survey; data on housing sales and mortgage foreclosures come from CoreLogic; vacancy data are taken from U.S. Postal Service; and information on mortgage issuance and type come from the Home Mortgage Disclosure Act.

Focusing on the three indicators of the health of housing markets, NSP2 tracts appear to have experienced greater distress in 2008, 1 year into the housing bust.[56] NSP2 tracts had a higher prevalence of properties in any stage of mortgage distress (the inventory of properties in a tract that had received foreclosure notice, completed a foreclosure sale, or entered REO status): about 58 properties per 1,000 were in some

[56] Several metrics of housing markets—sales, mortgage originations, distressed properties, and vacancies—are normalized by the total number of housing units in the census tract. The literature suggests several possible approaches to the denominator, particularly for counts of financial distress. Ideally, we would use the number of mortgaged or able-to-be-mortgaged properties (that is, exclude multiple rental units within larger buildings). Because the housing stock in most NSP2 tracts is predominately composed of single-family or small multifamily properties (two to four units), as shown in Exhibit 8–2, the total number of housing units is a reasonable approximation for able-to-be-mortgaged properties in our sample.

stage of distress in NSP2 tracts, compared with 32 properties per 1,000 in non-NSP2 tracts. The vacancy rate in NSP2 tracts was also substantially higher, and a larger share of conventional mortgage originations was identified in the Home Mortgage Disclosure Act as high-cost loans. These descriptive statistics suggest that grantees did indeed focus their NSP2 investments in low-income tracts with distressed housing markets, which the program was intended to serve.

NSP2 tract characteristics vary across the market types (Exhibit 8–3). All NSP2 tracts in BBEC and Other counties are located in central cities, as are 89 percent of tracts in L/D counties, while one-third of NSP2 tracts in Boom-Bust Sand States counties are outside central cities. Population density is by far the highest in BBEC counties (especially in Kings County), with the lowest density among tracts in the L/D counties. NSP2 tracts in BBEC and L/D counties have supermajority African-American populations, with relatively few Hispanic residents. NSP2 tracts in Other counties are about one-half African-American and one-fourth Hispanic. In BBSS counties, these proportions are mostly reversed, with more than one-half the population in NSP2 tracts being Hispanic and about one-fifth African-American. Median household income was highest in BBSS counties, but so was the share of residents with less than a high school degree.

Exhibit 8–3: NSP2 Tract Characteristics by Market Type[1]

	All	Boom-Bust Sand States	Boom-Bust East Coast	Lagging/ Declining	Other
Population characteristics					
Central city	0.80	0.66	1.00	0.89	1.00
Population density	11,347	10,358	33,573	7,513	13,576
Hispanic (percent)	34.96	53.53	12.18	5.00	25.39
African-American (percent)	39.63	19.75	84.73	67.65	50.08
Income	43,690	50,932	38,195	33,052	38,035
Population with less than 12 years of education (percent)	30.56	34.12	25.69	25.36	28.20
Housing markets					
One- to four-family properties (percent)	67.95	69.09	44.21	78.79	57.64
Price	150,048	208,471	245,345	25,555	119,330
Change in price, 2000–06 (percent)	76.14	111.21	112.06	24.71	34.68
Sales/1,000 housing units	81.10	87.87	43.47	71.51	82.42
Investor purchases (percent)	57.44	52.05	44.28	72.30	57.32
Mortgages/1,000 housing units	36.95	41.69	25.74	16.79	49.98
Indicators of housing distress					
Distressed properties/1,000 housing units	57.88	68.87	25.48	57.99	35.89
Vacancies/1,000 housing units	118.83	75.00	86.01	202.48	144.88
High-cost loans (percent)	19.85	14.00	16.96	34.11	20.49
N	**862**	**454**	**37**	**198**	**173**

NSP2 = Neighborhood Stabilization Program 2.

Notes: For all exhibits in this chapter, market types are defined by the classification described in Section 8.1. Exhibits 8–4 through 8–9 do not follow these designations, also as explained in Section 8.1. Boom-Bust Sand States contains the counties of Los Angeles, California; Maricopa, Arizona; Miami-Dade, Florida; Palm Beach, Florida; Riverside, California; Sarasota, Florida; and Stanislaus, California. Boom-Bust East Coast contains the counties of Kings County, New York; and Washington, D.C. Lagging/Declining contains the counties of Cuyahoga, Ohio; Ingham, Michigan; and Wayne, Missouri. Other contains the counties of Cook, Illinois; Davidson, Tennessee; Denver, Colorado; Philadelphia, Pennsylvania; Pulaski, Arkansas; and Ramsey, Minnesota.

Among NSP2 tracts, the housing stock was mostly composed of one- to four-family properties for all counties except BBEC, in which housing leans more toward midsized multifamily properties. As noted in previous chapters, in Washington, D.C., and Kings County, New York, only multifamily properties were purchased for acquisition and rehabilitation, while in the Other markets a mixture of single-family and multifamily properties were purchased, with single-family properties in the majority. Housing prices differ quite dramatically across market types: median prices in NSP2 tracts in BBSS and BBEC counties were more than $200,000, around $120,000 in Other counties, but just more than $25,000 in L/D counties. Housing prices in both Boom-Bust market types had appreciated rapidly during the boom, with relatively modest price growth in the L/D and Other markets. These differences have important implications for what NSP2 investments could accomplish; namely, a given allocation of NSP2 dollars will purchase fewer properties in higher priced Boom-Bust markets. As will be seen in below, grantees in L/D counties had lower average per-tract expenditures yet treated substantially more properties per tract because of the difference in real estate prices. NSP2 tracts in BBEC counties had lower sales volume, fewer investor purchases, and fewer mortgage originations that the other three market types. Property sales and investor purchase shares were high in L/D counties, but with relatively few mortgage originations, implying high frequency of cash purchases.

Housing market distress varies somewhat across market types. NSP2 tracts in BBSS counties displayed high frequencies of distressed properties and vacancies but relatively low shares of high-cost mortgages. In BBEC counties, the distressed property rate is fairly low, although using property counts will underestimate the prevalence of distress among housing units if multifamily properties enter foreclosure or REO. Likewise, high-cost lending was less common in BBEC tracts, again possibly due to the presence of multifamily properties, and vacancy rates were relatively low at 86 properties per 1,000. Not surprisingly, vacancy rates were highest in L/D counties. NSP2 tracts in Other counties fall somewhere in the middle on all housing distress indicators.

8.2.2 Housing Market Outcomes Over Time

The previous exhibits provide a snapshot of NSP2 tracts in 2008, roughly the midpoint of the housing crash and before NSP2's implementation. The exhibits below provide a longer view of how housing markets in NSP2 tracts performed during the housing boom, bust, and recovery. The exhibits show the performance of NSP2 tracts along five housing indicators: (1) sales prices, (2) sales volume, (3) rate of distressed properties, (4) vacancy rate, and (5) share of investor purchases.[57] Part "a" of each exhibit shows averages pooling tracts across all counties; part "b" shows averages separately for each of the four market types. To establish a counterfactual for what might have happened in NSP2 tracts without intervention, a subset of non-NSP2 tracts were selected as control tracts, using PSM techniques (described in more detail below). The exhibits compare housing outcomes for NSP2 tracts to these control tracts and to the remainder of tracts in the sampled counties.

Exhibits 8–4a and 8–4b show tract-level housing prices over the boom, bust, and recovery period, first for all tracts, then separately by market type. As expected, the biggest swings in prices occurred in BBSS

[57] The tract-level variables are created by aggregating transaction-level data from CoreLogic. Data sources for these variables are described in Chapter 3. Specific variable definitions are provided in Exhibit 8–1. In order to compare sales volume, mortgage distress, and vacancies across tracts, all three variables are normalized per 1,000 housing units in the census tract, using counts from the 2005–09 ACS. Investor purchases are a percentage of all deed transfers.

counties, with the least variation in L/D markets. For all four market types, prices in NSP2 tracts and control tracts were lower than the remainder of the market, but prices generally followed the same patterns over time. The data show that NSP2 neighborhoods were initially lower value than untreated areas but experienced similar price gains during the boom within each market type.

Similar patterns are apparent in the volume of arm's-length sales, shown in Exhibits 8–5a and 8–5b. The sales volume generally increased during the boom, dropped in the crash, and continued falling during the recovery. The highest volume and most volatile swings occurred in BBSS counties. The sales volume in NSP2 tracts tracks closely to control tracts in all but the BBSS market type, in which control tracts had higher sales volume during the early boom. The Other category contains heterogeneous counties, due to the small number of tracts in most counties, and results in this category tend to be dominated by Philadelphia and Cook counties. Thus these results should be interpreted with caution.

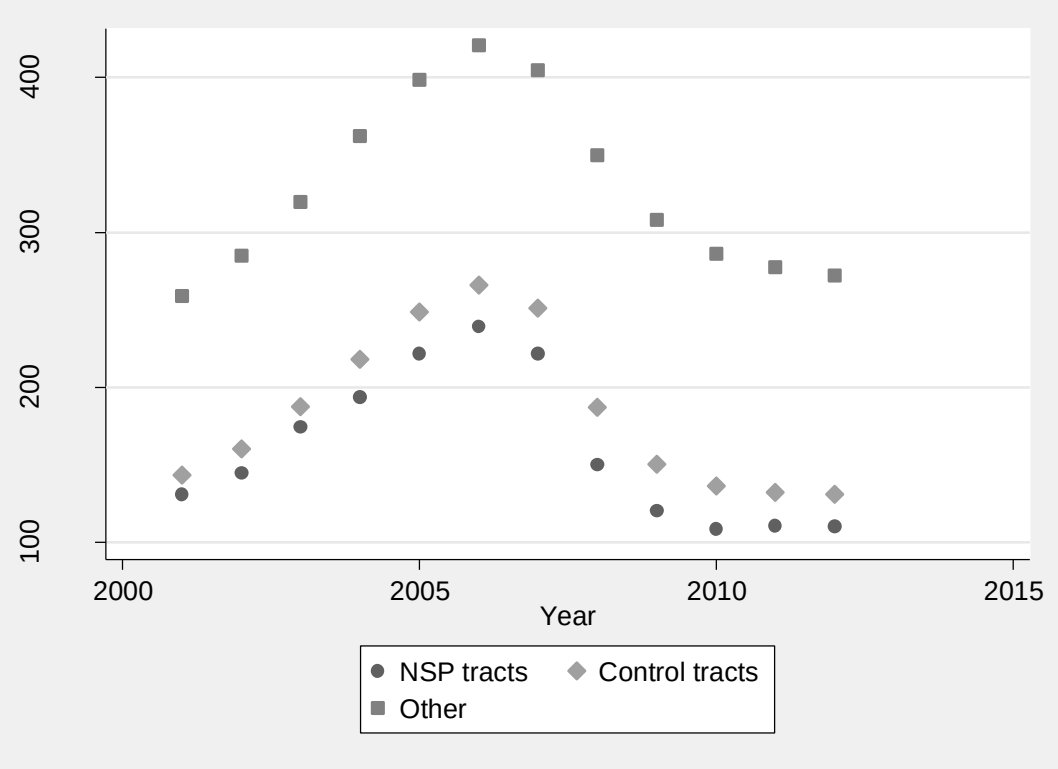
The prevalence of financially distressed properties rose steadily throughout the bust years, peaking around 2009 for most market types and then declining somewhat during the recovery period (Exhibits 8–6a and 8–6b). Again, the biggest swings occurred in BBSS, with NSP2 tracts showing higher distress rates than control and other tracts. The peak year of distress varies slightly across market types—tracts in L/D and Other markets hit their peak in 2008, while BBSS and BBEC peaked in 2009. The graphs confirm that NSP2 tracts have higher rates of distress, with control tracts tracking them more closely than other untreated tracts. Another indicator of housing market distress, vacancy rates, shows less clear temporal patterns overall and across market types (Exhibits 8–7a and 8–7b). Vacancy rates are highest throughout years in the L/D markets, with vacancies continuing to rise even during the recovery, while vacancies stabilized or declined in later years in the other three market types.

Finally, Exhibits 8–8a and 8–8b show an increase in investor purchase shares—implying a decline in owner occupancy over time—but with considerable variation across markets. Tracts in BBSS counties experienced low rates of investor purchases during the boom, increases after 2009, with slightly higher investor activity in NSP2 tracts. NSP2 tracts clearly have higher investor activity in BBEC, rising rapidly beginning about 2006. In L/D markets, NSP2 tracts and control tracts had 60- to 80-percent investor purchases throughout the recovery period. Tracts in Other markets also saw a growing share of investor purchases in bust years among all tracts.

Overall, these exhibits confirm the general trends in housing markets during three time periods: the housing boom (roughly 2000 to 2006), collapse (2007 to 2009), and recovery (2010 to the second quarter of 2013). Housing prices and the volume of arm's-length sales increased during the boom, decreased from 2007 through the collapse, and flattened during the recovery. Indicators of mortgage distress increased from 2006 to 2008, then declined somewhat from 2008 to 2012, although not generally to prebust levels.[58] Vacancy rates increased during the crash and remained high during the recovery period. Investor purchase shares generally rose during the collapse and recovery, consistent with declining owner-occupancy rates. The exhibits provide additional evidence that NSP2 investment went into tracts with lower home values, more distressed properties, and more investor activity (implying lower homeownership rates), compared with untreated tracts within the same counties. These differences between NSP2 tracts and control tracts chosen by PSM are generally smaller than between NSP2 tracts and remaining untreated tracts in the same market type.

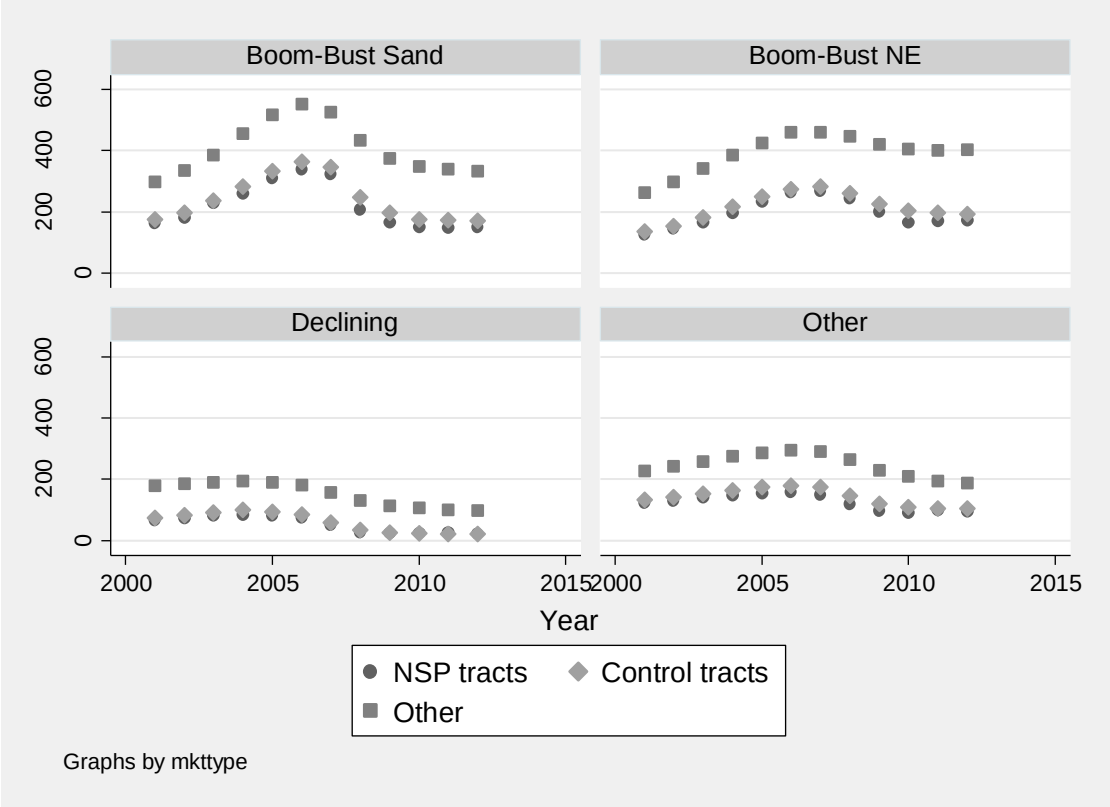
[58] CoreLogic did not track foreclosure starts, sales, or REO entry and exit prior to 2006–07; therefore, measures of mortgage distress are not available during the boom period.

Exhibit 8–4a: Median Housing Prices, 2000–13 (All Counties)



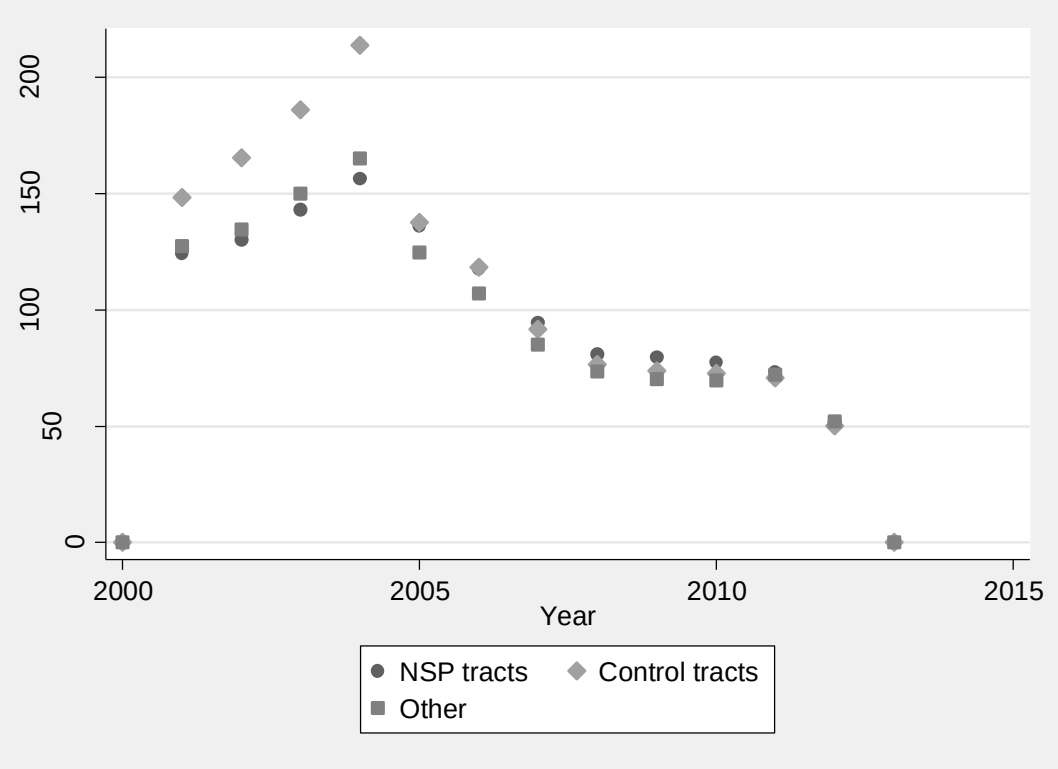
NSP = Neighborhood Stabilization Program.

Exhibit 8–4b: Median Housing Prices by Market Type, 2000–13



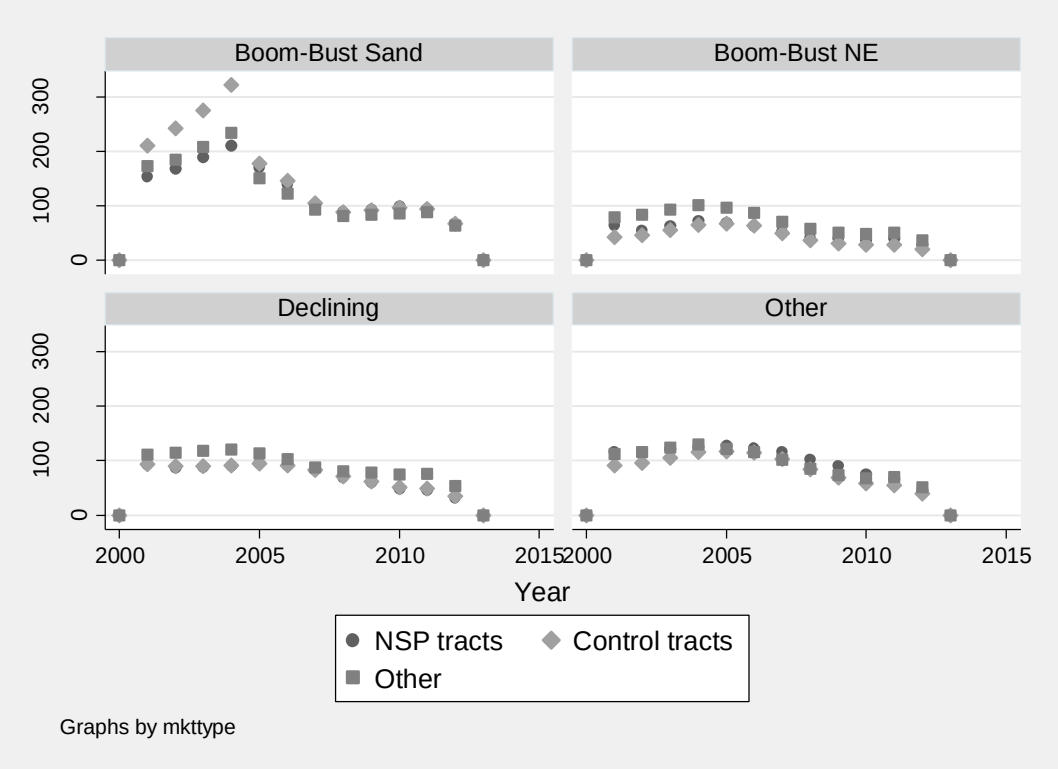
NSP = Neighborhood Stabilization Program.

Exhibit 8–5a: Housing Sales Volume, 2000–2013 (All Counties)



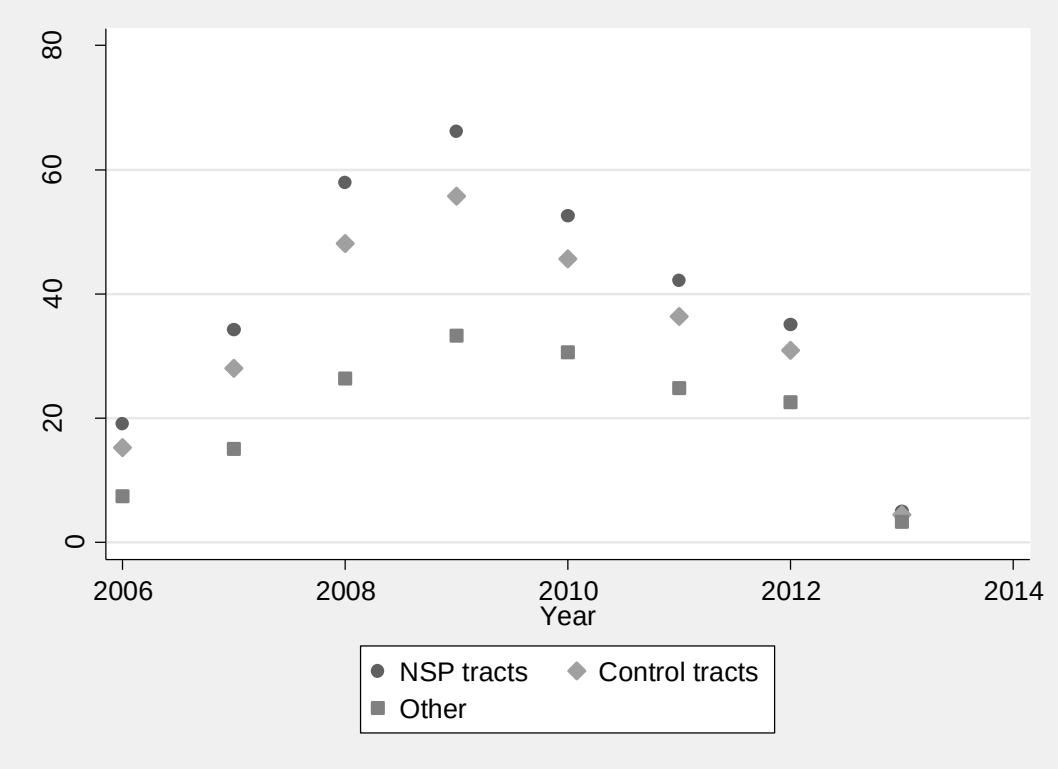
NSP = Neighborhood Stabilization Program.

Exhibit 8–5b: Housing Sales Volume by Market Type, 2000–13



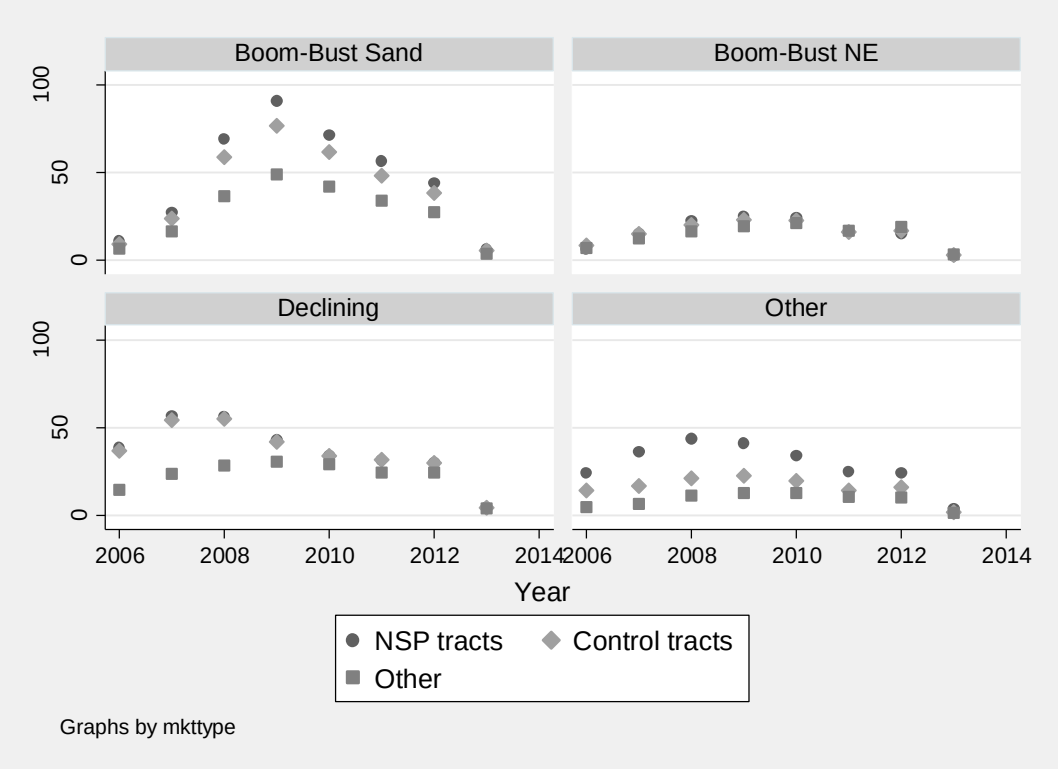
NSP = Neighborhood Stabilization Program.

Exhibit 8–6a: Financially Distressed Properties (All Counties)



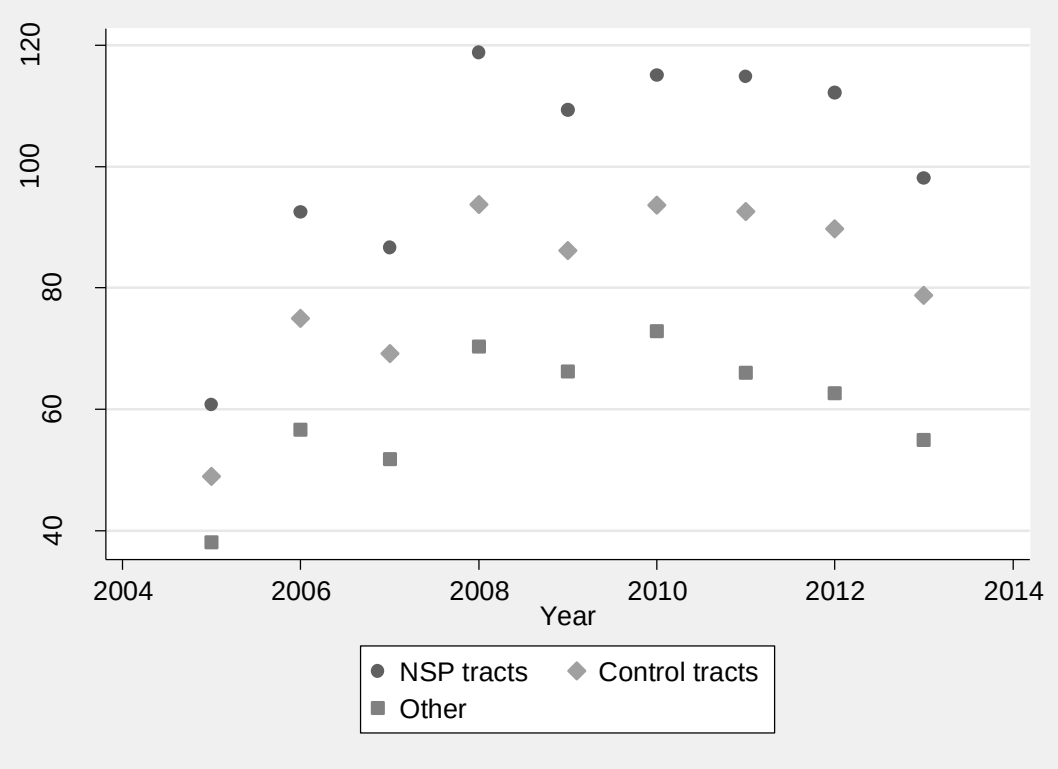
NSP = Neighborhood Stabilization Program.

Exhibit 8–6b: Financially Distressed Properties by Market Type



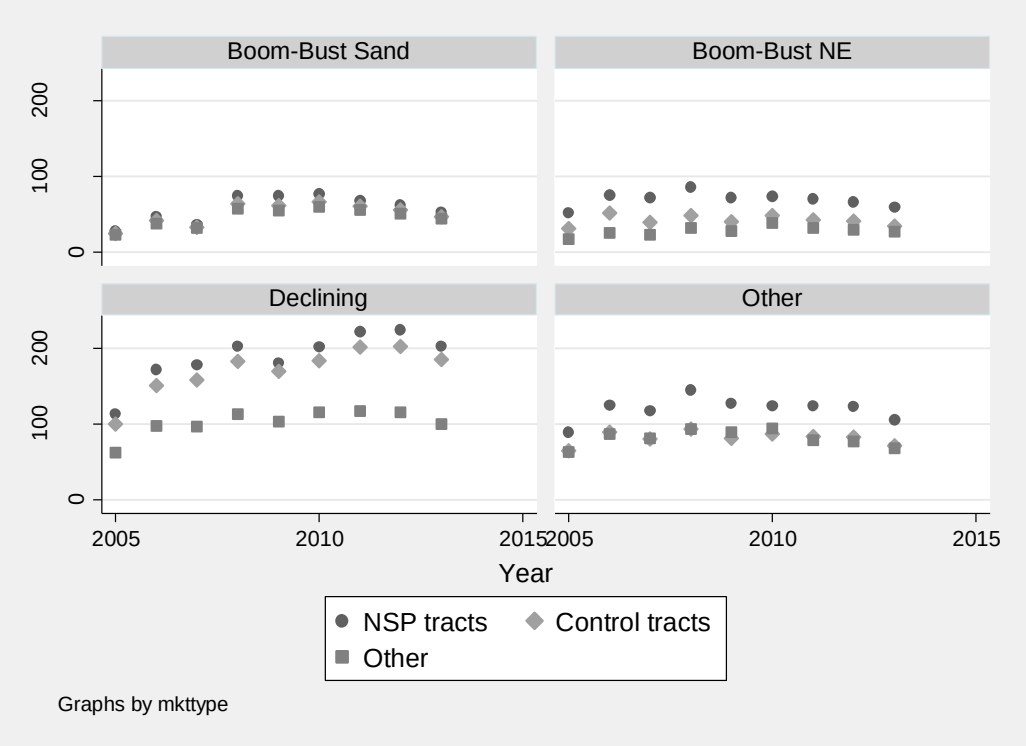
NSP = Neighborhood Stabilization Program.

Exhibit 8–7a: Vacancy Rates (All Counties)



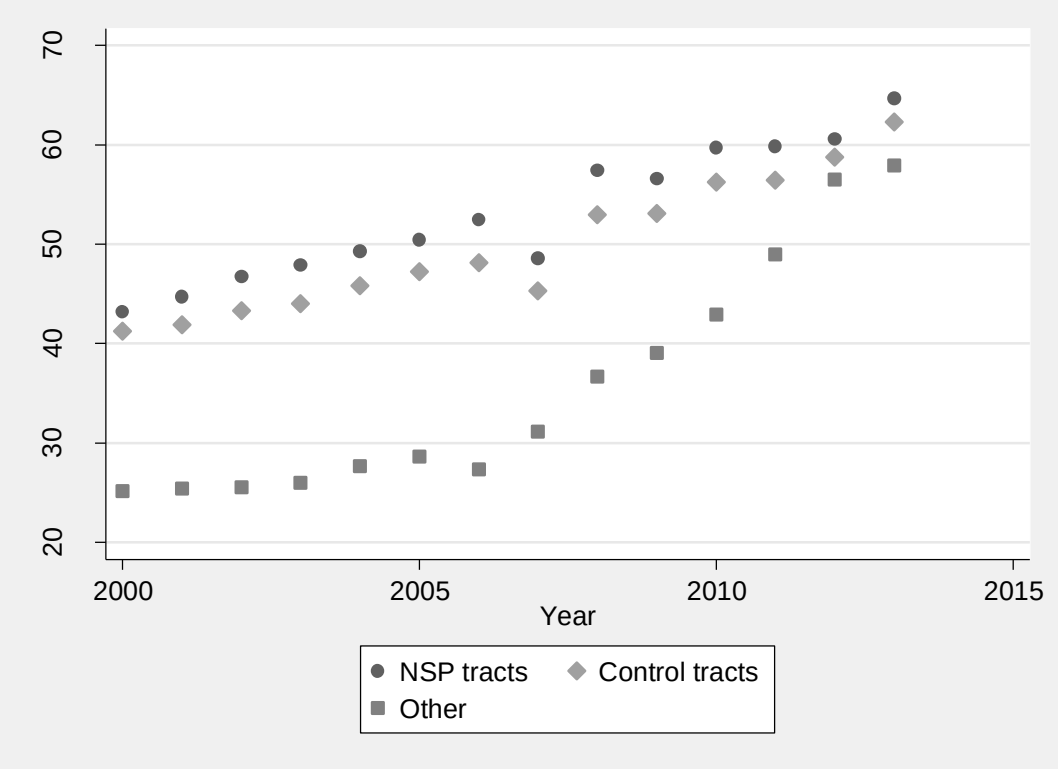
NSP = Neighborhood Stabilization Program.

Exhibit 8–7b: Vacancy Rates by Market Type



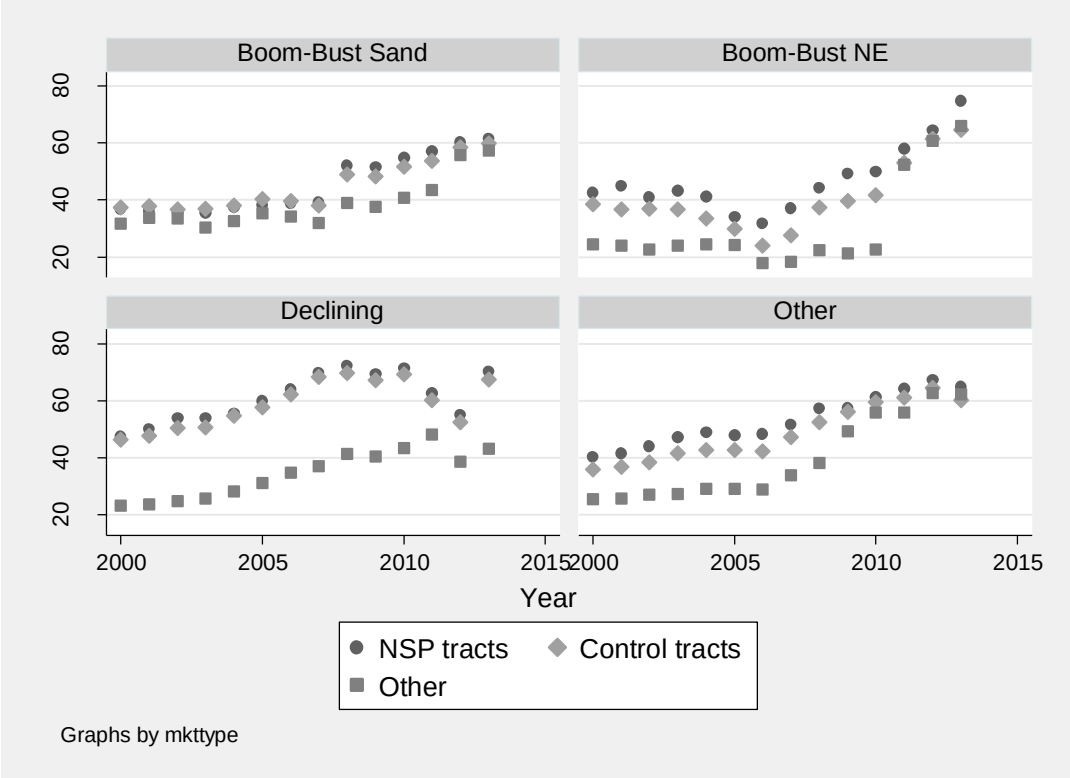
NSP = Neighborhood Stabilization Program.

Exhibit 8–8a: Purchases by Nonowner Occupants (All Counties)



NSP = Neighborhood Stabilization Program.

Exhibit 8–8b: Purchases by Nonowner Occupants by Market Type



NSP = Neighborhood Stabilization Program.

8.3 Descriptive Analysis of Tract-Level NSP2 Investments

This section describes the type, quantity, and spatial concentration of NSP2 activities at the census tract level. As described in Section 8.2, NSP2 tracts vary considerably in their initial population and housing market characteristics across the market types. Additionally, NSP2 strategies (the main type of activity pursued) and the quantity of outputs vary across market types. Accordingly, most of the descriptive analysis in this section is presented by market category. Because of small sample sizes, however, the results of the PSM used to select control tracts, and variations in the implementation of NSP2, the market typology is slightly different than the framework used to select the sample (see Chapter 3) or used elsewhere in this report. In particular, the Other category groups six somewhat heterogeneous counties, and results in this group are dominated by Philadelphia and Cook Counties. For a small number of large counties, there are enough NSP2 tracts and control tracts to conduct within-county analysis as well. In most tracts receiving NSP2 investment, the volume and concentration of NSP2 activity was quite low, which makes it challenging to observe significant impacts of NSP2 at the tract level. That is, comparing housing prices or vacancy rates across treated tracts with approximately three NSP2 properties to control tracts with zero NSP2 properties (out of an average 1,740 housing units per tract) is unlikely to display statistically significant differences. There are some tracts with a higher volume and concentration of NSP2 activity, however, which will be examined in more detail later.

8.3.1 Measuring Tract-Level NSP2 Activity

To measure the type, quantity, and concentration of NSP2 activity within census tracts, the data collected from each NSP2 grantee on individual properties were aggregated to the tract level. Key metrics of NSP2 activity are:

- *NSP tract.* Indicates whether at least one NSP2 property was treated in the tract. Treatment may include any of the eligible NSP2 activities.

- *NSP props.* The total number of NSP2 properties treated in the tract. This includes all structure types, multifamily as well as single-family.

- *NSP units.* The total number of units located in NSP2 properties within the tract, after the NSP2 activity was completed. Note that for properties that were demolished, the number of units post treatment is zero. This metric is somewhat unreliable because NSP2 grantee property-level data were often missing the structure type, number of units, or both. In many cases the structure type and unit count were inconsistent (that is, structure was listed as townhouse but number of units was more than one).

- *NSP spent.* The total dollar value that NSP2 expended in the tract. (Note that this can be divided by total NSP2 properties to obtain the average per-property expenditure for each tract.)

- *NSP dist.* The average distance between each NSP2 property and the five geographically nearest NSP2 properties. Construction of this metric is described in more detail below.

As described in previous chapters, NSP2 allowed five types of activities: financing for purchase of existing properties, acquisition and rehabilitation, land banking, demolition, and redevelopment. Properties could receive funding under multiple activities (for instance, acquisition and rehabilitation combined with financing, such as downpayment assistance to the purchaser). For purposes of the tract-level analysis, NSP2 activities are regrouped into four categories, designed to measure the way in which NSP2 activity would be visible to the surrounding neighborhood. Specifically, it is hypothesized that rehabilitation and redevelopment will appear largely the same to outside observers and thus can be combined into one category. Demolition and land banking are applied to vacant properties and do not involve physical improvements to the properties, so these are also combined. Standalone financing—that is, providing downpayment or mortgage assistance to owner occupants, or purchases of existing multifamily properties not undergoing NSP-funded rehabilitation—is expected to be the least visible activity, unless it is accompanied by rehabilitation work funded by the buyer or another source, which cannot be observed in the data. Properties receiving financing for home purchases as well as either rehabilitation or redevelopment are categorized as rehabilitation/redevelopment for this analysis. The final categories are:

- *REHAB/REDEV.* Properties acquired were rehabilitated or redeveloped for future sale or rental. This includes properties that received NSP2 funding for financing home purchases as well as for rehabilitation or redevelopment.

- *DEMO/LB.* Properties were demolished and/or land banked. Demolished properties were often not acquired by grantees.

- *FINANCE.* Finance can apply both to owner-occupied single-family housing and to multifamily properties. For the former, households purchased properties using financing assistance funded by NSP2, but the property did not receive NSP2 funding for rehabilitation or redevelopment (that is, NSP2 funded a mortgage or downpayment for an already completed property). For multifamily properties, grantees used NSP2 to acquire existing properties or to finance new multifamily development carried out by third-party developers (both nonprofit and for profit).

- *MULTI.* A small number of individual properties were classified as MULTI if NSP2 funds were used for multiple activities on a single property (excluding the combination of financing assistance with rehabilitation/redevelopment). Tracts are classified as MULTI if most properties in the tract received funding for multiple activities or roughly similar shares of properties within the tract received NSP2 funds for different activities (that is, 50 percent of properties were rehabilitated and 50 percent were demolished).

An important goal of NSP2 was to encourage grantees to concentrate their investments spatially, expecting that clustered activity would increase the visibility and impact on surrounding properties. To measure the degree of geographic concentration, the study team calculated a nearest neighbor index for each NSP2 property (Clark and Evans 1954; Dixon 2001; Fischer and Harrington 1996). The nearest neighbor index is essentially an average distance from each property to its five spatially closest NSP2 properties, as shown by Equation 1.

(Eq 1) $$\overline{D_{min}} = \frac{\sum_{j=1}^{n} Min(d_{ij})}{n}$$

In the equation, d_{ij} is the pairwise distance between each NSP2 property (i) and all other NSP2 properties (j). Selecting the five nearest properties ($N = 5$), as indicated by the literature, we then calculate the average distance to those five properties. Increasing values of the index indicate greater average distance between NSP2 properties, or lower spatial concentration.[59] One advantage of this method is that the distances are calculated for all properties in the county and thus are not constrained by census tract boundaries. The index is then averaged across all properties in the tract to obtain a tract-level concentration measure.

8.3.2 Describing Tract-Level NSP2 Activity

In the 19 counties selected for analysis, 862 census tracts—about 10 percent of all tracts in those counties—received some NSP2 investment (Exhibit 8–9). Just over one-half of the NSP2-treated tracts were in BBSS counties; about 20 percent of tracts were in each of L/D and Other markets; and only 4 percent of tracts were in BBEC counties. Across all market types, in more than 60 percent of tracts, the primary activities were rehabilitation and redevelopment—maintaining or expanding the existing housing

[59] Calculating the index using three nearest neighbors instead of five, or simply calculating the minimum distance to the single nearest property, yields substantively identical results.

stock, presumably in anticipation of strong demand for affordable housing in those tracts (Exhibit 8–10). In about one-fourth of the tracts, the main activities were demolition and land banking, resulting in a reduction of the housing stock. A small share of tracts (6.4 percent) had financing not combined with rehabilitation as the main activity, similar to the share of tracts that did not have a single dominant NSP2 activity.

Unsurprisingly, the strategy for implementing NSP2 varied considerably across market types. Grantees chose rehabilitation or redevelopment as the primary activity in 87 percent of BBSS tracts, and that activity dominated two-thirds of Other market tracts as well. Grantees in L/D markets pursued demolition and land banking in more than 80 percent of tracts, with a few tracts receiving mostly rehabilitation and redevelopment. Grantees in the BBEC counties were more likely than in other markets to use financing not in conjunction with rehabilitation/redevelopment. As suggested by the literature review in Chapter 2, the various NSP2 activities are likely to have different impacts on surrounding properties and neighborhoods. Rehabilitation and redevelopment signal an expectation of future demand for housing in the neighborhood and thus may encourage additional investment from nearby homeowners and private sector capital. Demolition and land banking, by contrast, signal an expectation of future decline in population size or property values, although they also remove sources of potential blight. It is unclear to what extent standalone financing is observed by neighbors and private investors; this activity is hypothesized to have the smallest potential for generating positive spillovers to the neighborhood.

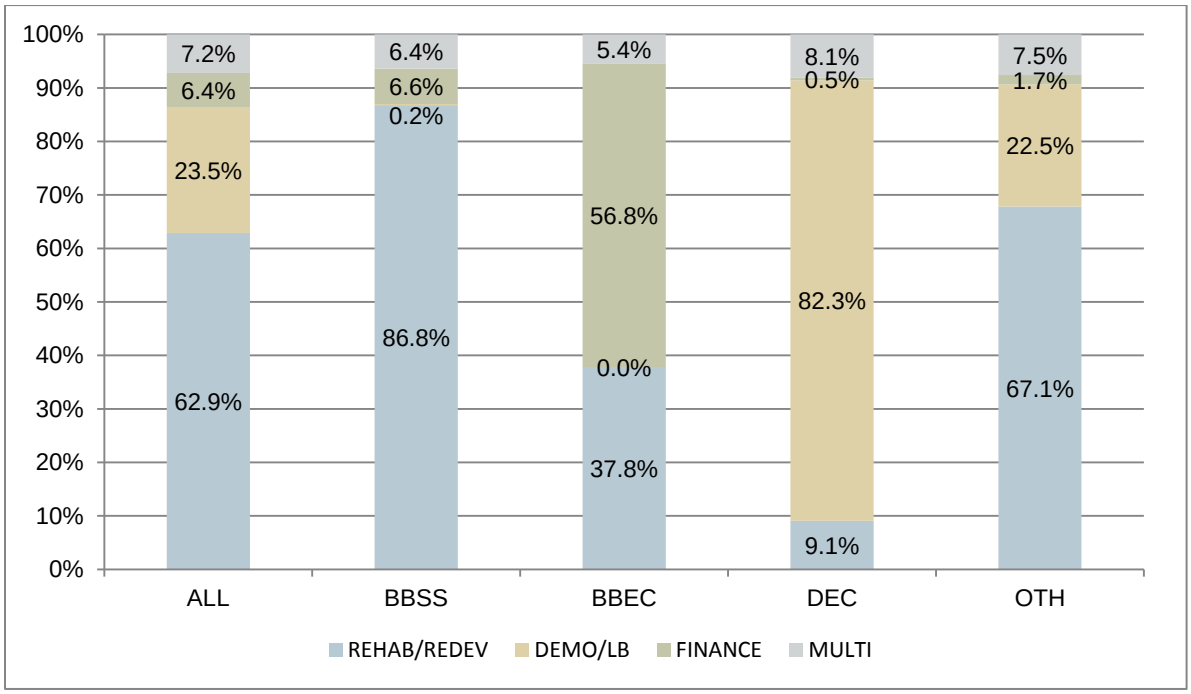
Exhibit 8–9: NSP2-Treated Tracts by Market Type

	All	Boom-Bust Sand States	Boom-Bust East Coast	Lagging/ Declining	Other
NSP2 tracts	862	454	37	198	173
Total tracts	8,305	3,911	971	1,200	2,223
Total counties	19	8	2	3	6

NSP2 = Neighborhood Stabilization Program 2.

The scale of NSP2 production in most tracts was small: the average treated tract contains 7.4 properties, has 14 housing units, and received $1.2 million from NSP2, with median numbers slightly smaller (Exhibit 8–11). For context, the average tract contains 1,715 total housing units, and the average NSP2 tract contains about 4,700 residents and 1,700 total housing units. Thus, the scale of NSP2 per census tract is small, which reduces the likelihood that the impact of NSP2 will be noticeable at the tract level. Unsurprisingly, given the small number of NSP2 properties per tract, most NSP2 properties were not highly spatially concentrated: within NSP2 tracts, the average distance from an NSP2 property to the five nearest NSP2 properties is 0.57 mile. A small number of tracts did experience larger volumes or greater concentration of NSP2 activities, however, with a maximum of 124 properties, 764 units, $20.5 million, and 0.01 mile between properties. These tracts with higher levels of NSP2 activity will be analyzed in more detail below.

Exhibit 8–10: Primary Tract Activity by Market Type



BBEC = Boom-Bust East Coast. BBEC = Boom-Bust Sand States. DEC = Lagging/Declining. DEMO/LB = demolition/lank banking. FINANCE = financing. MULTI = Multifamily. OTH = other. REHAB/REDEV = rehabilitation/redevelopment.

Just as the strategies for implementation vary across market type, there are substantial differences in output size, expenditures, and spatial concentration (Exhibit 8–12). Tracts in L/D markets experienced, on average, nearly 15 properties per tract, compared with 3 to 8 properties per tract in the other three market types. The average per-tract expenditures were considerably lower in L/D markets, however (around $600,000, compared with $1.2 to $1.7 million in the other three groups). The expenditure gap probably reflects several factors: (1) to conduct demolitions, grantees often did not typically acquire properties; (2) L/D neighborhoods had lower initial land values, so when grantees did acquire properties, purchase prices were lower; and (3) on average, conducting demolition cost less than rehabilitating properties.

Exhibit 8–11: Size and Concentration of Tract-Level NSP2 Activity

	NSP2 Properties	NSP2 Units	NSP2 Spent (Dollars)	NSP2 Distance (Miles)	Total Housing Units
Mean	7.37	14.35	1,198,731	0.57	1,715
SD	12.92	53.11	2,107,114	1.00	980
Min	1.00	0.00	425	0.01	0
***p*10**	1.00	0.00	52,879	0.10	789
***p*25**	1.00	0.00	162,500	0.17	1,115
***p*50**	3.00	2.00	425,750	0.36	1,537
***p*75**	8.00	6.00	1,226,990	0.68	2,142
***p*90**	18.00	24.00	3,132,940	1.14	2,693
Max	124.00	764.00	20,500,000	23.35	12,287
N	862	862	862	862	862

Max = maximum. Min = minimum. NSP2 = Neighborhood Stabilization Program 2. SD = standard deviation.

On average, tracts in BBSS and BBEC markets had fewer NSP2 properties (3 or 4 per tract) but more completed units (19 to 21) than in Other markets (8 properties and 14 units). This may reflect grantees' choices to rehabilitate multifamily properties in the Boom-Bust markets, although because of missing and incorrect reporting of structure types and unit counts, these results should be interpreted cautiously. The higher average NSP2 expenditure per property in Boom-Bust markets also likely reflects more expensive purchase prices. The highest spatial concentration of NSP2 properties was in L/D markets—with more properties per tract, they also tended to be closer together. The greatest spatial dispersion was in BBSS markets, with properties averaging 0.75 mile between each NSP2 property and its five nearest NSP2 neighbors. As discussed in Chapter 5, grantees in the BBSS counties generally faced more competition from investors and thus had more difficulty obtaining properties close together. The full distribution of NSP2 metrics by market type is shown in Appendix D–1.

Exhibit 8–12: Treatment Size and Concentration by Market Type

	All	Boom-Bust Sand States	Boom-Bust East Coast	Lagging/Declining	Other
NSP properties	7.37	4.29	3.03	14.75	7.93
NSP units	14.35	19.00	21.19	3.15	13.48
NSP spent (dollars)	1,198,731	1,248,670	1,544,426	606,558	1,671,488
NSP distance (miles)	0.57	0.76	0.44	0.21	0.54
Total housing units	1,715	1,923	1,470	1,198	1,810
N	454	454	37	198	173

NSP = Neighborhood Stabilization Program.

8.4 Estimating Neighborhood-Level Impacts

This section discusses the empirical methods used to estimate tract-level impacts of NSP2 on housing market outcomes. The section also discusses a few important caveats and limitations of the analysis.

8.4.1 General Approach: Differences-in-Difference

To estimate the tract-level impact of NSP2 on various housing market outcomes, we start with a standard difference-in-differences estimation. Housing prices (and other outcomes) for each tract and year are predicted as a function of whether the tract has yet or will at in the future receive any NSP2 investment, as well as controls for housing market and population characteristics. The general form of the regression is shown in Equation 2:

$$(Eq.\ 2)\quad PRICE_{it} = \beta_0 + \beta_1 NSPTRACT_i + \beta_2 POST_t + \beta_3 NSP{*}POST_{it} + \beta_4 X_{it} + PUMAYR + \varepsilon_{it}$$

In the equation, *i* indicates the census tract, and *t* indicates the year. *PRICE* is the median sales price for arm's-length transactions; additional dependent variables and the control variables contained in *X* are listed in Exhibit 8–1 under the headings "Housing market outcomes" and "Population and housing market characteristics." *NSPTRACT* is a binary variable that equals 1 if at least one property in the tract received

NSP2 investment at any time and 0 otherwise.[60] *POST* is a binary time indicator that equals 1 for all years after NSP2 has been implemented and 0 otherwise. For control tracts, *POST* equals 1 in all years after NSP2 has been implemented for any census tract within the same county. For NSP2 tracts, *POST* is set to 1 for any year after NSP2 intervention began in the tract, meaning at least one property has been treated (for rehabilitation/redevelopment or land banking, this implies a property was purchased; for demolition, it indicates the start of demolition activity; for financing alone, the closing date is the beginning of implementation). This is a fairly expansive definition of the posttreatment period because it is unclear a priori when spillover impacts will occur, relative to the stages of NSP2 activity. That is, do positive signals to the neighborhood occur with the acquisition of a property by an NSP2 grantee, the beginning of rehabilitation or demolition, construction completion, or reoccupancy of the completed property? Using the first date of any treatment may introduce noise into the analysis, but existing data do not allow more precise alignment of treatment effects.[61] In practice, only 10 percent of tract-year observations would be classified differently if the posttreatment period was defined after completion of all activities in the tract, so this is unlikely to change the substance or significance of results.

As discussed in Chapter 4, for NSP2 properties that were demolished, the average time needed to complete demolition was less than 2 months. Land banking can occur immediately after property acquisition; many properties put in land banks remained there as of the end of data collection (mean: 298 days). The start date for properties only receiving financing is the closing date. The greatest lag between property acquisition and completion is among rehabilitated or redeveloped properties. As discussed in Chapter 4**,** the average duration of rehabilitation is 176 days and for redevelopment it is 343 days, with quite large variance in duration. The key variable that would indicate impact of NSP2 is *NSP*POST*, the interaction between *NSPTRACT* and *POST*, which equals 1 for all NSP2-treated tracts in the years after NSP2 intervention has begun in that tract. The coefficient on *NSP*POST* indicates whether prices and other housing market outcomes changed in NSP2-treated tracts after program implementation, relative to changes in control tracts during the same period.

All regressions include controls for a number of other factors that influence housing market outcomes and that may be correlated with NSP2 treatment status, noted as *X* in Equation 2. Appendix D–2 shows the coefficients on all control variables, as well as the treatment variables described above. These controls are: various housing market characteristics from 2006 before the housing market collapse; the rate of distressed properties in 2008; number of housing units and structure type; population characteristics such as income, educational attainment, and racial composition; and location in central city versus suburbs. Variable definitions and sources for all control variables are presented in Exhibit 8–1.

In addition, regressions include Public Use Microdata Area (PUMA)-year fixed effects. PUMAs are clusters of geographically contiguous census tracts that have, on average, a total population of 100,000.

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[60] The shortest time period possible for tract-level analysis is annual, due largely to the thin volume of arm's-length sales during our study period. Even using 3-year averages, one-fourth of NSP2-treated tracts had 20 or fewer sales per year, increasing the chance that median prices may reflect idiosyncratic sales rather than conveying systematic information about the value of housing.

[61] Although we have some interim dates of activity, variation in "treatment" process both within and across grantees makes it difficult to interpret these dates. For instance, some grantees doing rehabilitation report that at the date of purchase, the property is fenced and labeled with the grantee's name, thereby showing outward signs of investment. For other grantees, no observable signs of investment occur until construction work begins.

They are commonly used as a proxy for housing submarkets within large metropolitan areas and are included as fixed effects to control for localized economic and social conditions that may affect housing markets (such as proximity to major employers, transportation infrastructure, amenities, or crime rates) that are shared across tracts within a PUMA but are not directly observable. The PUMAs are interacted with year dummies to allow these location effects to vary over time for relatively small geographic areas.[62] All standard errors are clustered by PUMA.

Because NSP2 is anticipated to have positive spillover impacts on a variety of housing market outcomes, the basic model in Equation 2 is estimated using several different dependent variables. These include median housing prices, housing sales volume, rate of properties in any stage of mortgage distress, vacancy rate, and share investor purchases. A fuller discussion of data cleaning and construction of variables derived from foreclosure and sales transaction data is provided in Chapter 3.[63]

8.4.2 Identification of Control Tracts

As illustrated earlier, tracts chosen by grantees for NSP2 investment differed significantly from non-NSP2 tracts along a variety of dimensions prior to NSP2. Therefore, it is reasonable to expect that the trajectory of housing outcomes in NSP2 and non-NSP2 tracts may differ during the recovery period. For the difference-in-differences estimation to be interpreted as a causal impact, the treatment and control tracts must be similar prior to treatment. This implies that the full universe of untreated tracts in NSP2 counties will not be an appropriate control group. The study team considered two possible methods for selecting control tracts: (1) choosing tracts that were initially targeted by grantees to participate in NSP2 but that did not actually receive NSP2 investment or (2) using PSM estimation.

The baseline interviews with grantees suggested there was a certain amount of random noise in the location of purchased properties within initially targeted tracts; for instance, if no foreclosed properties were available for sale in the tract during the NSP2 implementation period or if grantees made unsuccessful bids on some properties. (As shown in Appendix D–3, some counties eventually treated properties in a considerable number of tracts that were not originally targeted, also in part because of property availability.) This suggests that the initially targeted but untreated tracts are quasi-random and would be valid controls. Unfortunately, only three counties offer enough targeted, untreated tracts to provide a reasonable sample size: Los Angeles, Maricopa, and Cook (see Appendix D–3 for counts by county of the treated and untreated tracts).[64] Thus the analysis relies on the second proposed method, PSM, to select appropriate control tracts. All regressions also include a full set of independent side

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[62] PUMAs are created to have roughly constant population size but can vary considerably in geographic size, depending on underlying population density. The NSP2-treated tracts and most control tracts are in fairly dense central-city areas, however, so this is unlikely to be a problem with our sample. Moreover, all regressions include tract-level controls for population density.

[63] All CoreLogic data end in mid-2013. Price and sales are 3-year rolling averages; for instance, sales (2008) is the average number of sales across 2007–09. This is necessary given the small arm's-length sales volume for many tract-year observations. Using 3-year averages reduces noise in the measured variables, providing more reliable regression results. CoreLogic data do not include consistent coverage of mortgage distress before 2006 for most counties in our sample. See Chapter 3 for dates of coverage by county.

[64] For Los Angeles, Maricopa, and Cook counties, the study team also estimated regressions using both targeted, untreated tracts and PSM-matched tracts as control groups; results are qualitatively very similar.

variables to control for factors that could affect both selection of NSP2 tracts and housing market outcomes.

Following the standard procedure, we first estimate a probit model on the probability of each tract receiving NSP2 investment as a function of baseline tract characteristics. Each tract is assigned a propensity score (the predicted value based on the probit model), and for each treated tract, we identify five "nearest neighbor" control tracts (the five untreated tracts with the closest propensity scores, not necessarily geographically contiguous). PSM regressions are estimated in two ways, depending on the intended geographic level of the difference-in-differences models (Equation 2). First, PSM models are estimated by market type, so that each NSP2 tract is matched to five control tracts within the same market type, but not necessarily within the same county. These controls are used in all regressions that pool counties by market type. Second, PSM models are estimated separately by county for the seven largest counties that have sufficient numbers of NSP2 and control tracts to allow county-specific analysis.[65] For these estimates, control tracts are forced to match within the county. Control tracts were matched with replacement, meaning that a single control tract could be assigned to multiple treatment tracts. The pooled market-type PSM estimates produced very close matches for nearly all treated tracts: the median difference in propensity scores between treated and control tracts is less than 0.01 for all market types. Appendix D–4 shows the coefficients from the first stage probit model. Full diagnostics on matching outcomes are shown in Appendices D–5 and D–6.

An issue in the selection of comparison tracts is whether tracts that received NSP1 investments and NSP2 funding should be excluded as possible controls. There was quite a bit of overlap between the two programs: about 54 percent of the 862 NSP2 tracts in sampled counties also received some NSP1 investment. NSP1 had much more dispersed reach, however: 1,759 tracts in these counties received some NSP1 funding, twice the number of NSP2 treated tracts. Conceptually, excluding NSP1-treated tracts from the control group may offer a cleaner comparison of how NSP2 tracts would have fared in the absence of any federally funded intervention. In practice, because NSP1 was so dispersed, most NSP1 tracts had only a small number of NSP1 properties (median: 2), so including NSP1 tracts as possible controls will not substantially alter the results. The only possible exceptions are Cuyahoga and Wayne counties: in these counties, nearly one-half of the non-NSP2 tracts received some NSP1 investment and had higher levels of NSP1 (average of 6 properties, maximum of 56). Including NSP1 properties as potential controls in these 2 counties may underestimate the impacts of NSP2, relative to tracts with no NSP1 or NSP2 investment. Excluding NSP1 properties from the PSM process leads to substantially poorer quality matches for these counties, however, because the NSP1 tracts are better comparisons for NSP2 tracts than tracts that received no NSP funding at all. Specifically, tracts with no NSP are likely to be less distressed than NSP1 or NSP2 tracts, so using them may also introduce bias in the estimates.[66]

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[65] Estimations restricting matches to within the county produce roughly comparable quality matches for the large counties but are infeasible for the small counties due to the small number of tracts.

[66] As a robustness check, PSM was conducted for Cuyahoga and Wayne counties including and excluding NSP1 tracts from potential control tracts, and the county-level analysis (shown in Exhibit 8–15) was estimated using both sets of tracts. Excluding NSP1 tracts from the control group yielded statistically insignificant results on the posttreatment variable for both counties on four of five outcome variables (prices, sales rate, distress rate, and investor purchase shares). The posttreatment coefficient was positive and statistically significant on vacancy rates, implying that NSP2 tracts gained more vacancies after treatment than control tracts. Omitting NSP1 from the comparison, however,

This issue is only a concern for 2 of the 19 counties (and will not affect the results on intensity of NSP2 treatment, discussed below). For consistency, we chose to include NSP1 tracts in the pool of potential control tracts for PSM.

8.4.3 Intensity of NSP2 Treatment

The final piece of tract-level analysis investigates whether housing market outcomes systematically vary by the size or spatial concentration of NSP2 activity (collectively referred to as treatment intensity) within a tract. As noted in Exhibit 8–11, the median NSP2 tract had only three NSP2 properties, received about $425,000 in NSP2 funding, and had a distance between NSP2 properties of nearly 0.4 mile. For each of the metrics of NSP2 outcomes—number of properties, units, dollars spent, and spatial concentration—some tracts reveal a more intensive treatment. The following analysis compares housing prices and other outcomes across NSP2-treated tracts based on the intensity of treatment. Yearly housing prices for each NSP2-treated tract are predicted as a function of the size or intensity of NSP2 investment in the tract, while controlling for other housing market and population characteristics that are expected to affect prices. Equation 3 shows the general regression to be estimated:

$$(Eq.\ 3) \qquad PRICE_{it} = \beta_0 + \beta_1 NSPPROPS_{it} + \beta_4 X_{it} + PUMAYR + \varepsilon_{it}$$

As in Equation 2, *i* indicates the census tract, and *t* indicates the year. *NSPPROPS* is a count of the NSP2-treated properties, while *X* is the same vector of pretreatment housing and population characteristics described in Section 1.4.1. The regression is estimated only on NSP2-treated tracts to assess the effect of treatment intensity (that is, the change in dependent variable associated with a one-unit change in treatment amount). This provides a more precise impact of treatment size than including the control tracts, although results including the full set of control tracts are substantively similar. The regression is estimated separately for each housing market outcome and NSP2 treatment metric. These metrics are total NSP2 properties, posttreatment NSP2 units, NSP2 dollars spent, and the average distance to the five nearest NSP2 properties. This analysis implicitly tests for differential impacts between investments in single-family and multifamily properties because tracts with multifamily NSP2 investments will have more completed NSP2 units. Appendix D–3 shows the distribution of NSP2 outcomes by market type. The four metrics are not strongly correlated with one another, in part because of the difference in strategies: grantees in L/D markets tended to purchase more properties but spend less money per tract and with few posttreatment units because they demolished rather than rehabilitated. Therefore, as a more comprehensive metric of NSP2 intensity, a binary variable is created that identifies "Big" NSP2 tracts if the tract falls into the top decile on any of the four individual metrics. The cutoff values are determined separately for each market type, so the comparison is between intensively treated and normally treated tracts within the market type; values of the 90th percentile per market type are shown in Appendix D–3. Regression results are not sensitive to setting the threshold values at the 80th percentile instead of the 90th. Roughly 20 percent of NSP2-treated tracts were flagged as intensively treated on at least one metric. The analysis of intensively treated tracts was conducted separately for the seven largest counties.

yielded PSM-selected control tracts that were much poorer matches for NSP2 treated tracts (not nearly as disadvantaged prior to NSP2), which raises doubts about the validity of the results.

8.4.4 Caveats and Limitations of Analysis

To accurately identify the impacts of NSP2 on tract-level housing outcomes requires comparing NSP2 tracts to a reasonable comparison group of tracts that did not receive NSP2 investment but faced similar trajectories prior to the intervention, and thus can serve as the counterfactual. The results of PSM suggest that the set of control tracts match NSP2 tracts well, based on observable characteristics such as prior housing market conditions and economic and demographic population traits. The limitation of this method is that unobservable variables cannot be compared among NSP2 and control tracts. If NSP2 tracts were selected by grantees based on unobservable factors that independently impact the trajectory of housing markets in those tracts, then the analysis of NSP2 may be biased.

Qualitative information drawn from grantee interviews suggests several types of unobservable differences between NSP2 tracts and control tracts. These differences are split between those that would suggest an upward bias on the estimated impact and those that suggest a downward bias, however, so it is impossible to determine whether the overall estimates are biased and, if so, in which direction. For instance, some grantees indicated that they chose to target NSP2 investment in tracts with anchor institutions or other existing community development efforts. These types of assets, which are not measurable in the quantitative data, would typically be expected to improve housing market outcomes relative to observably similar tracts. Omitting the presence of anchor institutions would thus tend to overestimate the true positive impact of NSP2, introducing an upward bias in our results. By contrast, if NSP2 grantees faced political pressures to invest in "worst case" neighborhoods along some dimension not captured in the standard economic data (for instance, if NSP2 tracts had lower social capital than control tracts), the omission of these negative conditions would introduce downward bias in the estimated effect of NSP2. Although several grantees reported that their tract selection reflected political pressure, there are no concrete examples that suggest these tracts were in poorer condition. There are several other potentially omitted variables that could introduce bias in either direction, such as the quality of transportation infrastructure (public transit access or highways) or the quality of local public schools.

Besides the potential for selection bias introduced by omitted variables, it is likely that the analysis suffers from measurement error, particularly in the difficulty of defining NSP2 "treatment." Once again, the qualitative analysis of grantee interviews suggests that there are large differences in what an NSP2 investment looks like from a neighborhood's perspective, and thus different potential for positive spillovers. For instance, while some grantees used fences and signs to signal ongoing investment during a holding period, this was not done consistently across grantees. It seems probable that implementation differed in other ways, such as the quality of exterior maintenance or construction work, which would be visible to neighbors and potential investors in NSP2 tracts but are not observable in our data. The inability to determine the first date at which NSP2 properties displayed visual improvement introduces considerable uncertainty into the timing of likely impacts.

In general, the available data do not control for several potentially important unobservable variables or correct possible measurement error in the "treatment" variable. Although the direction or size of the potential bias is unknown, the study team acknowledges the limits in asserting a causal relationship between NSP2 and housing market outcomes from this analysis.

8.5 Findings

In this section, we present results of tract-level regressions analyzing the relationship between NSP2 investment and various housing market outcomes. We begin with models that pool NSP2 tracts across all

19 sample counties, then present results separately by market type and for each of the 7 largest counties. The analysis starts with a general difference-in-differences model, comparing NSP2 tracts to control tracts. Then we investigate whether the intensity of NSP2 treatment is associated with housing outcomes, focusing only on NSP2-treated tracts.

8.5.1 Changes in Housing Market Outcomes by Market Type

The difference-in-differences model provides little evidence that NSP2 affected housing prices in treated tracts, although there is some variation across market types (Exhibit 8–13). The first three columns combine tracts across all 19 sample counties, starting with only the treatment variables and gradually adding controls. Without any control variables or fixed effects (column 1), the estimation indicates: that NSP2 tracts were initially lower priced 48.6 percent than control tracts and that housing prices were approximately 42.9 percent lower during the post-NSP2 period. The post-NSP2 drop in prices was less about 13 percent in NSP2 tracts than in specified control tracts. Taken by itself, this could suggest that NSP2 was successful at reducing the fall in housing prices. Most of these differences appear to be explained by local market conditions or initial tract characteristics, however: the coefficients on all variables are greatly reduced in magnitude and become statistically insignificant once PUMA-year fixed effects are added (column 2) and then controls for initial tract economic and demographic characteristics (column 3).[67] The coefficient on *NSP*POST* is still positive, implying prices were 1.8 percent higher in NSP tracts after implementation than in the posttreatment control tracts, but this is not statistically different from 0 in the full model, shown in column 3. When the full set of controls is included, the coefficient on *NSPTRACT* is no longer significant, suggesting that any pretreatment differences between NSP2 tracts and the PSM-matched control tracts can be explained by observable characteristics.

[67] In regressions including PSM-matched controls, there are two general approaches to ensure that each treated tract is compared with the appropriate matched controls: either the original matching characteristics can be included or the estimated propensity score. Here, we chose the latter approach, which also allows us to observe coefficients on the specific economic and demographic variables.

Exhibit 8–13: Price Changes in NSP2-Treated Tracts by Market Type

Dep Var: LNPRICE	All			Boom-Bust Sand States	Boom-Bust East Coast	Lagging/ Declining	Other
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
NSP tract	−0.486***	−0.0982**	−0.00958	−0.0206	−0.0251	0.0193	−0.013
	(0.141)	(0.0411)	(0.0256)	(0.0162)	(0.053)	(0.0862)	(0.0347)
Post	−0.429***	−0.0676*	−0.0221	−0.0191	0.0367	−0.0726	0.0266
	(0.0382)	(0.0343)	(0.0353)	(0.0173)	(0.0406)	(0.0826)	(0.04)
NSP*Post	0.299**	0.0427*	0.0288	0.0303*	−0.0384	0.0804	0.0136
	(0.145)	(0.0238)	(0.0182)	(0.0157)	(0.0554)	(0.0664)	(0.043)
Other controls	N	N	Y	Y	Y	Y	Y
PUMA year	N	Y	Y	Y	Y	Y	Y
Observations	12,924	12,924	11,592	6,914	670	2,628	2,385
R-squared	0.024	0.847	0.924	0.927	0.636	0.696	0.738

Dep Var = dependent variable. NSP = Neighborhood Stabilization Program. PUMA = Public Use Microdata Area.

Robust standard errors, clustered by PUMA, in parentheses

****p*<0.01, ***p*<0.05, **p*<0.1

Control tracts selected by propensity score matching (PSM).

Coefficients from ordinary least squares regressions on ln(Price). Sample includes all NSP2-treated tracts (NSP tract = 1) as well as control tracts selected by PSM. Columns 1–3 pool tracts across all 19 counties; columns 4–7 pool tracts within indicated market types. Other controls include percent change in median sales price (2000–06), ln(median sales price 2006), ln(sales 2006), financially distressed properties (2008), central-city dummy, ln(housing units), ln(population density), ln(income), percentage population without high school degree, percentage Hispanic, percentage African-American, and percentage housing units in one- to four-family structures. Robust standard errors, clustered by PUMA, shown below each coefficient. ****p*<0.01, ***p*<0.05, **p*<0.1

The final four columns of Exhibit 8–13 estimate the difference-in-differences specification separately for each market type to test whether NSP2 affected prices differently, either because of underlying differences in housing markets or the variation in grantee strategy and implementation. At best, these models suggest that NSP2 may have slowed price declines in the BBSS tracts: the coefficient on *NSP*POST* is positive and weakly significant. For the other market types, *NSP*POST* is negative but insignificant in BBEC counties and positive but insignificant in L/D and Other counties. Most of the control variables perform as expected in predicting housing prices; coefficients on right-hand side variables are shown in Appendix D–6.

Exhibit 8–14 estimates the same difference-in-differences model using a variety of other housing market outcomes as dependent variables: sales rate, distressed property rate, vacancy rate, and investor purchase

shares.[68] All models include fixed effects for PUMA-year, and thus coefficients should be interpreted as the difference in outcomes across census tracts within the same PUMA and year, or relatively localized housing market. Of the 12 separate regressions estimated, only 2 show coefficients on *NSP*POST* that are significant at the 5-percent level, with another one significant at the 10-percent level. These results suggest that there is not a consistent impact of NSP2 on tract-level outcomes.

In BBSS markets, the coefficient on *NSP*POST* is negative and significant on sales rate, implying about a 6-percent decrease in sales, and weakly significant on distressed property rate. Although a reduction in distressed properties would be a positive impact of NSP2, it is unclear whether a reduction in sales rates is beneficial. Generally, low sales volume is an indicator of a weak housing market, but if the sales are mostly foreclosure auctions or short sales, then reduced sales volume could be a positive indicator. In BBEC markets, the coefficient on *NSP*POST* is positive and significant on distressed property rate, suggesting about a 12.3-percent increase in distressed properties relative to control tracts in the post period. Collectively, these regressions provide little evidence that housing markets in NSP2-treated tracts improved relative to control tracts, after NSP2 implementation. These findings are consistent with the relatively low intensity of NSP2 activity for the median NSP2 tract. Another possible interpretation is that the relationship between NSP2 and tract-level housing outcomes varies by county within market types; because the coefficients show average effects, they may obscure underlying differences across individual counties. The following analysis tests for such variation in the largest seven counties.

[68] The first three variables are all estimated in natural logarithms to adjust for skewed distributions; investor purchase shares are approximately normally distributed.

Exhibit 8–14: Post-NSP2 Changes in Nonprice Housing Outcomes

	Boom-Bust Sand States				Boom-Bust East Coast				Lagging/Declining				Other			
Dep Var:	**LN (Sales)**	**LN (Distress)**	**LN (Vacancy)**	**Investor**	**LN (Sales)**	**LN (Distress)**	**LN (Vacancy)**	**Investor**	**LN (Sales)**	**LN (Distress)**	**LN (Vacancy)**	**Investor**	**LN (Sales)**	**LN (Distress)**	**LN (Vacancy)**	**Investor**
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
NSP tract	0.0558***	0.0602***	0.233***	− 0.51	0.0744	0.0325	0.224*	0.882	0.0128	− 0.0314	0.111*	0.642	0.0835**	0.0759	0.114	1.336
	(0.0207)	(0.0226)	(0.0768)	(0.7)	(0.0649)	(0.0333)	(0.102)	(1.474)	(0.0412)	(0.057)	(− 0.059)	(1.469)	(0.0372)	(0.0545)	− 0.102	− 1.576
Post	0.0383**	0.0299	0.00129	− 0.737	− 0.0203	− 0.0764*	0.177	− 6.268	0.0478	0.0004	0.105***	1.774	0.0633*	0.106**	0.0209	− 0.977
	(0.0186)	(0.0205)	(0.0419)	(0.619)	(0.0545)	(0.0367)	(0.111)	(5.571)	(0.0398)	(0.0515)	(0.0342)	(1.394)	(0.0375)	(0.0442)	− 0.0543	− 1.713
NSP*Post	− 0.0563**	− 0.0425*	− 0.0361	0.874	0.000756	0.123**	− 0.0667	2.08	0.0352	0.0447	− 0.0418	0.744	− 0.002	− 0.0735	0.0338	2.264
	(0.0231)	(0.0254)	(0.0422)	(0.641)	(0.0995)	(0.0457)	(0.0732)	(1.486)	(0.0508)	(0.0739)	(0.0422)	(1.29)	(0.0573)	(0.0544)	(0.0468)	− 1.407
Other controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
PUMA-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	8,298	8,298	8,298	8,288	804	804	804	796	3,168	3,168	3,168	3,135	2,868	2,868	2,868	2,830
R-squared	0.978	0.957	0.675	0.649	0.945	0.89	0.796	0.584	0.934	0.915	0.744	0.54	0.951	0.893	0.642	0.565

Dep Var = dependent variable. FE = fixed effects. LN = natural log. NSP = Neighborhood Stabilization Program. PUMA = Public Use Microdata Area.

Coefficients from ordinary least squares regressions. Sample includes all NSP2-treated tracts (NSP tract = 1) as well as control tracts selected by propensity score matching. Other controls include percent change in median sales price (2000–06), ln(median sales price 2006), ln(sales 2006), financially distressed properties (2008), central-city dummy, ln(housing units), ln(population density), ln(income), percentage population without high school degree, percentage Hispanic, percentage African-American, and percentage housing units in one- to four-family structures. Robust standard errors, clustered by PUMA, shown below each coefficient. ***p<0.01, **p<0.05, *p<0.1

8.5.2 Changes in Tract-Level Housing Market Outcomes by County

Of the 19 sample counties, 7 have a sufficient number of NSP2-treated tracts and control tracts to allow county-specific analysis at the tract level: Los Angeles, Maricopa, and Miami-Dade within the BBSS market; Cuyahoga and Wayne in the L/D market; and Cook and Philadelphia in the Other market. For these counties, a difference-in-differences model is estimated separately for each county, using control tracts estimated by the PSM models that are restricted to match within the county.[69] Exhibit 8–15 presents the estimated impact of NSP2 treatment on each housing market outcome by county. For brevity, the exhibit only shows the coefficient on *NSP*POST*; all models include *NSPTRACT* and *POST* variables, as well as the full set of right-hand side variables and PUMA-year fixed effects. Estimated coefficients on all control variables are shown in Appendix D–2.

Exhibit 8–15: Post-NSP2 Changes in Housing Markets by County

Dep Var	LN(Price)	LN(Sales)	LN(Distress)	LN(Vacancy)	Investor
	(1)	(2)	(3)	(4)	(5)
Cook	0.144	−0.0492	−0.172**	0.0521	−0.786
	(0.121)	(0.0578)	(0.073)	(0.0444)	(4.235)
Cuyahoga	−0.27	0.0961	0.233**	0.0835	0.583
	(0.232)	(0.0651)	(0.0977)	(0.0605)	(4.39)
Los Angeles	0.0321*	−0.0755***	−0.0273	−0.00201	0.5
	(0.0163)	(0.0266)	(0.0293)	(0.0433)	(0.764)
Maricopa	0.0747*	−0.0828	−0.0373	−0.0576	−0.134
	(0.037)	(0.0512)	(0.0631)	(0.0788)	(0.899)
Miami-Dade	0.0868	−0.0181	−0.0366	0.0145	2.034
	(0.0592)	(0.0929)	(0.056)	(0.112)	(3.18)
Philadelphia	0.0128	0.0233	0.0679	0.0134	5.288***
	(0.0272)	(0.0572)	(0.0606)	(0.085)	(2.016)
Wayne	0.238	0.0307	−0.0205	0.0507	0.0709
	(0.142)	(0.0732)	(0.125)	(0.0314)	(1.21)

Dep Var = dependent variable. LN = natural log. NSP2 = Neighborhood Stabilization Program 2.

Coefficients for *NSP*POST*, estimated by ordinary least squares regressions. Sample includes all NSP2-treated tracts (NSP tract = 1) as well as control tracts selected by propensity score matching, with control tracts restricted to match within county. All regressions also include following variables: NSP tract, Post, percent change in median sales price (2000–06), ln(median sales price 2006), ln(sales 2006), financially distressed properties (2008), central-city dummy, ln(housing units), ln(population density), ln(income), percentage population without high school degree, percentage Hispanic, percentage African-American, and percentage housing units in one- to four-family structures. Regressions also include Public Use Microdata Area (PUMA)-year fixed effects. Robust standard errors, clustered by PUMA, shown below each coefficient. ****p*<0.01, ***p*<0.05, **p*<0.1

Focusing on these large counties, which offer the cleanest identification strategy, there is slightly more statistically significant evidence of a relationship between NSP2 and housing market outcomes, although not a consistently positive impact. Focusing first on the results on housing prices (column 1), the

[69] For Los Angeles, Maricopa, and Cook counties, the models were estimated using PSM control tracts and targeted, untreated tracts as controls. Results are quite similar using either set of controls, with slightly smaller standard errors using the PSM tracts because of larger sample size. For brevity and better comparison with other counties, only the results using PSM tracts are shown in Exhibit 8–15.

estimated coefficients on *NSP*POST* are positive and weakly significant for both Los Angeles and Maricopa Counties, and positive though not significant for Miami-Dade County. These results are consistent with the positive and weakly significant estimate on housing prices in the BBSS market. The only significant coefficient on sales volume (column 2) is for Los Angeles County, consistent with the pooled BBSS results, but the sign is also negative.

Focusing on the relationship with distressed properties, Cook County shows some improvement (decrease in distress rate), while NSP2 tracts in Cuyahoga County show higher distress rates post treatment. There are no significant results on vacancy rates. The last housing market outcome, investor purchase shares, shows one significant coefficient on *NSP*Post*: in Philadelphia County, post-NSP2 treatment is associated with higher investor purchase shares. It should be noted that this exhibit presents results from 35 separate regressions. By the rules of probability, we could expect 3.5 coefficients significant at the 10-percent level and 1.7 coefficients significant at the 5-percent level, even if there is no underlying relationship between the variables. Thus from these results, it is difficult to conclude that there is a consistent, significant relationship between NSP2 and several housing market outcomes for the counties studied.

8.5.3 Intensity of NSP2 Treatment and Housing Market Outcomes

The final tract-level analysis examines whether housing market outcomes among NSP2-treated tracts vary by the size or concentration of NSP2 activity. This analysis provides more statistically significant evidence of different housing outcomes, although the impacts vary considerably across counties and by type of outcome. Also, the directions of the relationships are somewhat counterintuitive. Exhibit 8–16 presents regression results using five different measures of NSP2 activity, pooling NSP2 tracts from the seven largest counties.[70]

None of the individual metrics of NSP2 intensity—number of properties, units, dollars spent, or spatial concentration—are statistically significant predictors of housing prices in NSP2 tracts. The binary indicator, Big NSP2, yields somewhat more significant results—but in surprising ways. Tracts with high intensity of NSP2 activity had about 6 percent lower sales rates, 9 percent higher vacancy rates, and 2 percentage points larger investor purchase shares than tracts with normal (that is, relatively sparse) levels of NSP2 activity, controlling for other tract characteristics and PUMA-year fixed effects. This may reflect that the grantees chose to concentrate their NSP2 activity in the most severely distressed tracts that faced more negative housing market trajectories even with a greater intensity of NSP2 investment.[71] Because tract selection strategies varied across counties and grantees within counties, and often seemed driven by idiosyncratic reasons (that is, relationships with existing anchor institutions or history of working in the neighborhood), it is not possible to develop an empirical approach that systematically explains the selection issues, such as an instrumental variable.

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[70] The small sample size raises the potential problem of multicollinearity among the NSP2 treatment metrics and right-hand side control variables. The correlation matrix indicates quite low correlation between the treatment variables and other controls, however (no correlation coefficients above 0.3).

[71] Comparing pre-NSP2 characteristics of high- and normal-intensity NSP2 tracts gives confirmation that high-intensity treated tracts in some counties were initially worse off. In Cuyahoga, Miami-Dade, and Philadelphia counties, high-intensity tracts had significantly lower household incomes, lower housing prices, and higher vacancy rates than normal-intensity tracts, as of 2008.

Exhibit 8–16: Intensity of NSP2 Treatment and Housing Outcomes, Large Counties

Dep Var	LN (Price)					LN (Sales)	LN (Distress)	LN (Vacancy)	Investor
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
LN(NSP properties)	− 0.011								
	(0.013)								
LN(NSP units)		− 0.003							
		(0.009)							
LN(NSP spent)			0.000						
			(0.002)						
LN(NSP distance)				− 0.029					
				(0.054)					
Big NSP					− 0.026	− 0.0603**	0.027	0.0901**	2.080***
					(0.033)	(0.029)	(0.023)	(0.041)	(0.797)
Other controls	Y	Y	Y	Y	Y	Y	Y	Y	Y
PUMA-year FE	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	2,830	2,830	2,830	1,232	2,830	3,408	3,408	3,408	3,391
R-squared	0.93	0.93	0.93	0.916	0.93	0.973	0.957	0.833	0.713

Dep Var = dependent variable. LN = natural log. NSP = Neighborhood Stabilization Program. PUMA = Public Use Microdata Area.

Coefficients estimated by ordinary least squares regressions. Sample includes all NSP2-treated tracts in the seven largest counties (Cook, Cuyahoga, Los Angeles, Maricopa, Miami-Dade, Philadelphia, and Wayne). Big NSP is a binary variable indicating NSP2 tracts with size/concentration of NSP2 investment in the top 10 percentile for any of the four metrics shown. Cutoffs for the Big NSP set are shown separately by market type. Regressions also control for: percent change in median sales price (2000–06), ln(median sales price 2006), ln(sales 2006), financially distressed properties (2008), central-city dummy, ln(housing units), ln(population density), ln(income), percentage population without high school degree, percentage Hispanic, percentage African-American, and percentage housing units in one- to four-family structures. Regressions also include PUMA-year fixed effects. Robust standard errors in parentheses. ***p<0.01, **p<0.05, *p<0.1

The county-specific analysis, comparing intensely treated NSP2 tracts with relatively sparsely treated tracts, shows somewhat more consistent patterns for some housing outcomes and some counties but also hints at the underlying differences across counties (Exhibit 8–17). Focusing first on housing prices (column 1), intensively treated tracts in two counties (Cuyahoga and Maricopa) are positively related to prices, but intense treatment is negatively associated with prices in two other counties (Miami-Dade and Philadelphia) and insignificant in the other three counties. In Maricopa County, intensive NSP2 treatment is associated with lower sales volume, relative to sparse NSP2 treatment (column 2). Intense NSP2 treatment is positively associated with distress rates in Philadelphia County (column 3). Vacancy rates also show more significant associations with NSP2 intensity, but in the opposite direction expected (column 4): intensively treated tracts in Cook, Cuyahoga, Philadelphia, and Wayne counties have higher

posttreatment vacancy rates. The last column shows that in Miami-Dade and Philadelphia counties, high-intensity NSP2 is associated with increased investor purchase shares.

Exhibit 8–17: Intensity of NSP2 Treatment and Housing Outcomes by County

Dep Var	LN(Price)	LN(Sales)	LN(Distress)	LN(Vacancy)	Investor	*N*
	(1)	(2)	(3)	(4)	(5)	
Cook	0.268	0.253	0.132	0.330**	– 4.615	252
	(0.379)	(0.211)	(0.154)	(0.160)	(4.533)	
Cuyahoga	0.652***	0.150	– 0.191	0.194*	– 3.894	204
	(0.170)	(0.149)	(0.133)	(0.108)	(4.511)	
Los Angeles	– 0.015	– 0.013	0.016	– 0.101	– 0.809	1,218
	(0.014)	(0.032)	(0.030)	(0.087)	(1.836)	
Maricopa	0.0592**	– 0.145***	0.007	– 0.039	– 0.084	678
	(0.027)	(0.041)	(0.040)	(0.078)	(0.990)	
Miami-Dade	– 0.120*	0.001	0.062	– 0.014	3.243*	336
	(0.070)	(0.049)	(0.040)	(0.057)	(1.709)	
Philadelphia	– 0.257***	– 0.193	0.260*	0.654***	10.36**	288
	(0.081)	(0.166)	(0.137)	(0.153)	(4.102)	
Wayne	– 0.001	– 0.017	– 0.022	0.202***	0.910	432
	(0.107)	(0.130)	(0.067)	(0.043)	(1.676)	

Dep Var = dependent variable. LN = natural log. NSP2 = Neighborhood Stabilization Program 2. PUMA = Public Use Microdata Area.

Coefficients for Big NSP2, estimated by ordinary least squares regressions. Sample includes all NSP2-treated tracts in each county indicated. Big NSP is a binary variable indicating NSP2 tracts with size/concentration of NSP2 investment in the top 10 percentile for any of the four metrics shown. Cutoffs for Big NSP set separately by market type. Regressions also control for: percent change in median sales price (2000–06), ln(median sales price 2006), ln(sales 2006), financially distressed properties (2008), central-city dummy, ln(housing units), ln(population density), ln(income), percentage population without high school degree, percentage Hispanic, percentage African American, and percentage housing units in one- to four-family structures. Regressions also include Public Use Microdata Area (PUMA)-year fixed effects. Robust standard errors clustered by PUMA in parentheses. ***p<0.01, **p<0.05, *p<0.1

An alternative reading of Exhibit 8–17—looking across rows rather than down columns—suggests some possible interpretations of a few counties. In particular, the results are most robust and consistent for Philadelphia County: higher NSP2 intensity is associated with lower prices, more distress, more vacancies, and higher investor purchases. One interpretation of these results is that grantees in Philadelphia County chose to focus NSP2 most intensely in the worst tracts (in ways that are not observable in other control variables), so that these tracts faced the worst housing outcomes even with additional investment. Checking the list of Philadelphia County's Big NSP2 tracts with the grantee data indicates that in 3 of the 11 tracts, the grantee was a nonprofit with longstanding experience in the neighborhood, conducting primarily rehabilitation and redevelopment. In the other 8 tracts, the City of

Philadelphia demolished large numbers of units. The heterogeneity of grantee and treatment type makes it difficult to draw clear conclusions about whether these neighborhoods were the "worst of the worst." The results from Miami-Dade County would also be consistent with this interpretation: high-intensity NSP2 tracts had lower housing prices and higher investor purchase shares than more lightly treated tracts in that county. For Cuyahoga and Maricopa counties, however, the signs on high NSP2 intensity go in opposite directions (higher prices and higher vacancies for Cuyahoga County and higher prices and lower sales in Maricopa County). The remaining counties—Cook, Los Angeles, and Wayne—show few significant results.

The dependent variable that shows the most significant results is vacancy rate; notably, all significant coefficients are positive and in counties that conducted at least some demolition and land banking. This raises the possibility that U.S. Postal Service vacancy data are picking up vacant properties that were land banked under NSP2, or if the vacancy data are observed with lags (see Chapter 7 for more discussion of these data), we may observe that high-intensity demolition was targeted in tracts with particularly high vacancy rates.

8.6 Conclusion

One of the main goals of NSP2 is to break the downward spiral of distress in neighborhoods that suffered badly during the foreclosure crisis. This chapter examined the context of housing markets in NSP2 tracts during the housing bust and recovery periods and described tract-level NSP2 outputs. The chapter also analyzed the impacts of NSP2 on various housing market outcomes.

NSP2 grantees targeted neighborhoods that had weaker initial housing markets and economic conditions prior to NSP2. Before NSP2 implementation, NSP2 tracts had lower housing prices and lower population income and educational attainment, as well as higher rates of mortgage distress, vacancy, and investor purchases. Initial NSP2 tract characteristics varied somewhat across market types, with tracts in L/D markets generally having the weakest economic conditions.

Housing outcomes in NSP2 tracts changed dramatically during the housing boom, bust, and recovery periods. Housing prices and sales volume increased rapidly during the boom years (2000 to 2006), collapsed during the bust (2007 to 2009), and stabilized somewhat during the recovery (2010 to 2013). The rates of financial distress (properties in foreclosure and REO) spiked during the bust, then declined somewhat, but remain at fairly high levels. Vacancy rates and investor purchase shares also rose during the bust and recovery years, implying that neighborhoods may have experienced emptying out and a transition toward more renter-occupied units. All these trends were most pronounced in the BBSS and BBEC counties and least volatile in the L/D markets.

The average NSP2 tract received relatively sparse treatment under the program: on average, NSP2 tracts saw treatment of seven properties and expenditures of $1.2 million. Activities were generally not spatially concentrated, with tract-level average of 0.57 mile between each NSP2 property and the five nearest NSP2 properties. A small number of tracts in each market type received higher intensity treatment, however. Strategy varied considerably across market types, with BBSS and Other markets mostly implementing NSP2 through rehabilitation and redevelopment, BBEC grantees mostly providing standalone financing, and grantees in L/D markets mostly undertaking demolition and land banking.

The relatively low intensity of NSP2 treatment likely contributed to quite limited impacts of NSP2 on housing market outcomes for average NSP2 tracts. Regression results indicate few very statistically significant postimplementation differences in housing outcomes between NSP2 tracts and control tracts.

At best, there is weak evidence that prices increased in treated tracts in BBSS markets, notably Los Angeles and Maricopa counties.

We find more statistically significant results among tracts that received intensive NSP2 treatment (either greater size or spatial concentration of NSP2 investment) for the largest seven counties. These relationships also differ quite a bit across counties. The most robust evidence suggests that intensively treated tracts in Philadelphia County experienced worse housing outcomes—lower prices and higher rates of distress, vacancy, and investor purchases—than sparsely treated NSP2 tracts in the county. In three other counties (Cook, Cuyahoga, and Wayne), results suggest higher vacancy rates among intensively treated tracts, compared with sparsely treated tracts. This may imply that grantees chose to focus concentrated NSP2 investment in tracts with the highest prevalence of vacant or abandoned properties—in other words, tracts in greatest need of help.

9. The Impact of NSP2 on Crime

Recent research suggests that the presence of foreclosures results in increased crime in the neighborhoods surrounding the foreclosed properties (Baumer, Wolff, and Arnio, 2012; Goodstein and Lee, 2010; Immergluck and Smith, 2006b; Jones and Pridemore, 2012; Kirk and Hyra, 2012; Stucky, Ottensman, and Payton, 2012; Wallace, Hedberg, and Katz, 2012). The potential mechanisms for this impact are multifaceted. First, periods of vacancy for the foreclosed property may create opportunities for burglary, theft, and other crimes related to unauthorized use of the property itself. Second, the presence of a vacant property or turnover of neighborhood residents may reduce the extent of neighborhood monitoring by reducing the number of residents or weakening the relationships between neighborhood members. Lastly, the presence of a foreclosure—and any associated reduction in maintenance—may attract crime to the extent that it creates a source of blight or alters perceptions about the risk of arrest. Although the existing evidence does not disentangle these potential mechanisms, three studies use causal research designs to provide evidence that the relationship is causal—foreclosures result in crime (Cui 2010; Ellen, Lacoe, and Sharygin, 2013; Williams, Galster, and Verma, 2014).[72]

An assumption that the findings of these studies apply to all types of neighborhoods, including the neighborhoods that were the focus of Neighborhood Stabilization Program 2 activities, may be false, for several reasons. First, each study is specific to the city examined by the empirical analysis. As a result, the findings may not be generalizable to all cities or to the specific cities and neighborhoods where NSP2 investments were made. Second, the existing evidence studies periods prior to the NSP2 period from February 2010 to February 2013 and, therefore, measure the impact of crime under different market conditions than were present during the period of NSP2 implementation. Lastly, the measures of foreclosure and crime are often aggregated to yearly counts and to census tracts or larger geographies. Only two studies—Ellen, Lacoe, and Sharygin (2013) and Cui (2010)—analyze quarterly data for geographies smaller than a census tract.

The first component of the analysis in this chapter therefore examines the impact of foreclosures on violent crime and property crime, using data from the first quarters from 2007 to 2013 for neighborhoods that received NSP2 investment. The analysis applies a variation of the methodology used by Cui (2010), producing estimates for three of the cities in this study's sample for which data on crime incident reports could be obtained from the city police department—the City of Chicago (Cook County), City of Cleveland (Cuyahoga County), and City of Denver (Denver County). Analysis of these data provides insight into whether foreclosures increased violent and property crime in the neighborhoods where NSP2 activities occurred.

The second component of the analysis measures the impact of NSP2 activities on violent crime and property crime. We hypothesize that NSP2 activities are likely to reduce violent crime and property crime on and near NSP2 properties. First, NSP2 investments may reduce crime by reducing vacancy or signaling the involvement of a local organization in monitoring the property. Additionally, acquisition of a property by an NSP2 grantee or demolition of a blighted structure may reduce access to vacant units,

[72] An important caveat is that foreclosure-related vacancy may drive this relationship. For example, Cui (2010) does not find a significant impact of foreclosures on crime among all foreclosures in her sample, finding significant impacts only when she isolates periods of foreclosure-related vacancy.

removing opportunities for vandalism, trespassing, theft, and other crimes that might occur on the property. It is also possible, however, that NSP2 activities may increase crime to the extent that they increase the length of vacancy or create opportunities for theft (for example, installing air conditioning units or other appliances).

Thus, the research questions for the analyses in this chapter are:

1. Is the presence of a foreclosure associated with changes in violent crime and property crime on or near the foreclosed properties?

2. Is NSP2 investment associated with changes in violent crime and property crime on or near the NSP2 property? To what extent does the impact vary for different NSP2 activities?

9.1 Analysis Approach and Data Sources

The analysis approach for examining the impact of foreclosures and NSP2 activities on violent crime and property crime relies on Geographic Information Systems software to determine the location of individual properties and crimes. For each property in our sample, we identify all violent and property crimes that occur within 250 feet in any direction.[73] This distance focuses on the areas immediately proximate to the property under the hypothesis that the largest impacts of a foreclosure or NSP2 activity will appear on the property itself and in the streets and alleyways immediately adjacent to the property. The area defined by this ring is referred to hereafter as the *proximate area*.

The analysis compares the crime incidence in the proximate area to two *comparison areas* that fall outside the proximate area but within the same immediate neighborhood. The two comparison areas are defined as concentric rings that fall just outside the proximate area and include equal area to the proximate area. The first ring includes the area between 250 and 354 feet from the property. The second ring includes the area between 354 and 433 feet from the property. The analysis uses a difference-in-differences estimation strategy that compares the trend in crime outcomes in the proximate area to the trend in the comparison areas.

This approach reflects the need to balance two potentially conflicting objectives: (1) the comparison areas should be close enough to the property to share all of the unobserved attributes of the neighborhood, and (2) the comparison areas should be far enough from the property that the incidence of crime will not be affected by the foreclosure or by NSP2 investment. In order to satisfy the first criterion, our approach defines comparison areas in the immediate vicinity of each property. Our approach to the second objective reflects the hypothesis that the impact of foreclosures and NSP2 activities will be largest on or in immediate proximity to the property itself. To the extent that the impact of a foreclosure or NSP2 activity on crime extends beyond the immediate vicinity of the property, 250 feet, the analysis may

[73] This ring is smaller than the rings used for the analysis of home prices presented in Chapter 10 because of differences in the analysis objectives. This chapter hypothesizes that the impacts of foreclosure and NSP2 activities will be largest on the foreclosed/NSP2 property itself or along the street and alleyways immediately proximate to the property. Because the location of many crimes are coded to the middle of the street, the analysis uses a 250-foot ring in order to identify the set of crimes that might have originated on or near each property. This objective is different than the purpose of the rings in Chapter 10, which seek to measure the impact of foreclosures on sale prices of surrounding homes, an impact that is likely to have a greater reach than 250 feet from the NSP property.

understate the true impact of foreclosures or NSP2 activities—measuring the difference between the average impact in the proximate area and the average impact in the comparison areas.

9.1.1 Model for Estimating the Impact of Foreclosure on Crime

The first component of the analysis seeks to determine whether foreclosures affect the incidence of violent and property crime on or near the foreclosed properties. The base estimation equation for this analysis is:

(Eq. 1) $Crime_{itc} = \alpha + \beta_1 P_i + \beta_2 T_t + \beta_3 R_i + \beta_4 FC_{it} + \beta_5 R_i * FC_{it} + \beta_6 X_{it} + \varepsilon_{itc}$

In this equation there is an observation for each ring, *C*, associated with property, *i*, in quarter, *t*. The data set is a balanced panel, with 75 observations for each observed property—3 rings (proximate area, comparison area 1, and comparison area 2) and observations for 25 quarters from the first quarters of 2007 to 2013. The outcome $Crime_{itc}$ is the number of crimes observed in quarter, *t*, and area, *C*, for property, *i*. The independent variables use a difference-in-differences structure to isolate variation across time and between the proximate and comparison areas. The property fixed effects, P_i, remove any factors that are constant for all 3 rings and 25 quarters associated with a property. The inclusion of these fixed effects means that the model compares the crime outcomes in a proximate area to the comparison areas for the same property, isolating variation across quarters and between the proximate and comparison areas.

The model also includes quarter fixed effects, T_t, to control for the trend in crime outcomes across time. To account for differences in this trend across subareas, the model estimates this trend separately for four subareas—defined by grouping police districts (Chicago and Denver) or census tracts (Cleveland)—in each county using quarter-subarea fixed effects. These fixed effects control for any overall increase or decrease in crime that occurs in the subarea as a whole. The model also includes a set of tract-level, time-varying covariates, X_{it}, that control for changes in tract characteristics across time. Taken together, this difference-in-differences structure isolates variation across quarters and between the proximate and comparison areas that cannot be explained by the overall trend in the subarea or by changes across time in the tract characteristics.

The key independent variables for the analysis are the indicator for the proximate area, R_i, and two measures of foreclosure, FC_{it}, that reflect stages of the foreclosure process:

- *Distress*. A property is defined to be in distress during the period between the initial foreclosure filing and the foreclosure sale.[74] Distress is defined only for properties that eventually experience a foreclosure sale because property owners who cure their mortgage may continue to inhabit and maintain their properties. The distress period is defined to begin during the quarter of the foreclosure notice and continue through the quarter prior to the foreclosure sale.

[74] Foreclosure filings include notice of default, notice of foreclosure, and lis pendens notices depending on the county and its defined foreclosure processes. For each property, we identify any observed foreclosure sale and each preceding foreclosure filing associated with the sale. For a small number of properties, the data include earlier filings that suggest that the property may have experienced a foreclosure filing, cure, and subsequent redefault prior to the eventual foreclosure. In these cases, we define the period of distress to begin during the quarter of the earliest foreclosure filing that precedes the foreclosure sale with no interceding property transaction record.

- *Foreclosure/ REO*. A property is defined to be in foreclosure/REO during any quarter in which a foreclosure sale occurs or the property remains in REO with no subsequent sale to a new owner. The foreclosure/REO period is defined to begin during the quarter of the foreclosure sale. For properties that enter REO, the foreclosure/REO period continues through the quarter prior to any resale to a new owner. REO properties with no observed resale are coded to remain in REO through the end of the analysis period, February 2013.

These definitions imply that a property cannot be simultaneously in distress and foreclosure/REO during the same quarter. If the foreclosure notice and foreclosure sale occur during the same quarter, the property is coded to experience foreclosure/REO with no prior distress period.

The interaction of the foreclosure measures with the proximate ring R_i*FC_{it} produces coefficient estimates that measure the impact of distress and foreclosure/REO on crime. These estimates identify whether, during periods of distress and foreclosure/REO, the number of crimes is significantly higher in the proximate area relative to the comparison areas and to other quarters—after controlling for the subarea trend and changes in tract characteristics.

This analysis approach is analogous to the methodology used by Cui (2010), with adjustments that reflect the use of different data sources[75] and improvements to the model specification for the three cities examined by this analysis.[76] The analysis estimates separate models for violent crime and for property crime using OLS (ordinary least squares) regression methods. The reported results apply clustered standard errors at the block group level.[77]

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[75] The most substantive difference is that we do not have access to longitudinal information about vacancy at the property level to examine the relative importance of foreclosure versus vacancy.

[76] The analysis data set for this chapter includes properties both with and without an observed foreclosure, rather than limiting the analysis to only foreclosed properties. The inclusion of properties without an observed foreclosure improves the estimates for the subarea crime trends, particularly in the final quarters of the analysis period. When the data set is limited to properties with an observed foreclosure, the trend estimates must be identified with respect to a decreasing number of properties that have not yet reached foreclosure and an increasing number of properties that have exited REO. Because post-REO properties may continue to affect nearby crime, we include both properties with and without an observed foreclosure in the analysis sample. An additional benefit of this approach is that it allows the same sample to be used for the analyses of NSP2 activities described in the next section. The set of NSP2 activities includes both properties with and without an observed foreclosure.

[77] A limitation of the estimation approach is that the distance rings associated with neighboring properties frequently overlap, which means that individual crimes often contribute to the crime counts for several properties. This overlap results in correlation between the error terms of different observations, which violates the independence of error terms assumption of OLS. This issue does not bias the estimated coefficients. Traditional heteroskedaticity-robust standard errors may be smaller than the standard errors that would occur in a sample of equal size where the rings for each property did not overlap, however. We therefore use standard errors clustered at the block group level. Although this approach may not account for rings that overlap across block group boundaries, it produces more conservative estimates and may better address issues related to serial correlation that can arise in difference-in-differences analyses (see Cameron and Miller, forthcoming; Bertrand, Duflo, and Mullainathan, 2004).

9.1.2 Model for Estimating the Impact of NSP2 Activities on Crime

The second component of the analysis examines the impact of NSP2 activities on crime using a similar difference-in-differences estimation approach. The base estimation equation is:

(Eq. 2) $Crime_{itc} = \alpha + \beta_1 P_i + \beta_2 T_t + \beta_3 NSP2_{it} + \beta_4 R_i + \beta_5 R_i * NSP2_{it} + \beta_5 FC_{it} + \varepsilon_{itc}$

This equation relies on the same data set structure and model as Equation 1, retaining measures of foreclosure, FC_{it}, as covariates that control for any changes in crime associated with periods of foreclosure. The model then adds measures of NSP2 investment, $NSP2_{it}$, in order to measure the impact of NSP2 activities on crime. The primary measure of NSP2 investment is an indicator variable that identifies the period of NSP2 investment, beginning with the quarter that the property is acquired by the NSP2 grantee or, if the property is not acquired, the quarter that the first NSP2 activity starts. The period of NSP2 investment is then defined to include all subsequent quarters through the end of the analysis period—even if the property is reoccupied—under the hypothesis that any effect of NSP2 should continue beyond the period of rehabilitation or demolition. The results reported in Section 9.2 also include extensions of this model that separate the measure of NSP2 investment by activity type and by stage of the NSP2 intervention. The specific measures used for these analyses are defined as part of the discussion of the findings in Section 9.2.

Interpreting the estimates from this difference-in-differences model estimating the impact of NSP2 investment, Equation 2, is analogous to interpreting Equation 1 examining the impact of foreclosures. The interaction of the measure of NSP2 investment with the proximate ring, $R_i * NSP2_{it}$, produces the coefficient estimates that measure the impact of NSP2 activities on crime. These estimates identify whether, during the period of NSP2 investment, the number of crimes is significantly lower in the proximate area relative to the comparison areas and to prior quarters—after controlling for the subarea trend and changes in tract characteristics.

An important limitation of this approach is that the analysis cannot distinguish whether changes in the incidence of crime reflect new crime or the displacement of crime from one area to another. For example, the demolition of a property may displace crime from the demolished property into other vacant units on nearby blocks. Instead, the methodology focuses narrowly on measuring the impact of NSP2 investment on or near the NSP2 property.

9.1.3 Data and Measures

The first data source for the analysis is the Foreclosure and Transaction data described in Chapter 3. These data include all properties with an observed transaction between 2000 and February 2013. The analysis sample for each city—Chicago, Cleveland, and Denver—contains all residential properties that have at least one transaction record since 2000 and that are located in a census tract with at least one NSP2 property.

For each property, the property transaction data contain information about the presence of foreclosure notices, foreclosure sales, and the duration of any REO period. This information is used to construct the measures of distress and foreclosure/REO defined in Section 9.2.1. Although it is unlikely that these data are exhaustive of all foreclosure sales, they provide information about distress and foreclosure/REO for a large sample of properties in each city for the 25 quarters in the analysis period from the first quarters of 2007 to 2013.

The second data source for the analysis is crime data collected from the local police department in each city. The coverage of the available data reflects the jurisdiction of the city's police department, which includes all NSP2 tracts in Denver County but excludes a small number of NSP2 tracts in Cook County and Cuyahoga County. These exclusions limit the analysis geography to NSP2 tracts in each county's primary city—Chicago, Cleveland, and Denver. Crime incident reports for 2007 were not available in Denver, so the Denver data include the period from the first quarters of 2008 to 2013, while the Chicago and Cleveland data include the full analysis period from the first quarters of 2007 to 2013.

The crime data include extensive information on the crime incident reports recorded by each city's police department, including a point location for each crime incident report. Incident reports document incoming reports of crime to the police department, regardless of whether the crime is confirmed or an arrest is made. Such data may not be representative of actual crime to the extent that there are neighborhood-level differences in the likelihood that an incident is reported to the police. Conversely, the advantage of analyzing incident reports is that they may be less likely than arrest data to reflect changes in policing strategy or targeted policing of specific neighborhoods. Although the data exclude a small number of incident reports that might reveal sensitive information (for example, offenses involving children), the data otherwise provide nearly complete information on crime incident reports in NSP2 tracts.

The analyses examine the crime incident reports for both violent crime and property crime. Following the Federal Bureau of Investigation's Uniform Crime Reporting definitions, these categories are defined as follows:[78]

- *Violent Crime*. Violent crimes are all crimes related to homicide, rape, robbery, and aggravated assault or battery.

- *Property Crime*. Property crimes are all crimes related to burglary, theft, auto theft, and arson.

An important limitation of the Uniform Crime Reporting standards is that an incident with multiple offenses is categorized according to the most severe offense committed. As a result, the set of property crime incident reports observed in each city may omit some property crimes that were committed during the same incident as a violent crime. With this limitation in mind, the cities' reliance on standardized reporting procedures increases the reliability of the offense categories and the comparability of the data across cities. For the purposes of this analysis, the only requirement is that any data limitations do not differ systematically between the proximate and comparison areas.

The final source of data is the tract-level measures created for the tract-level analysis of the impact of NSP2 activities reported in Chapter 8. To control for time-varying changes in each census tract, the estimation models control for tract-level changes in the number of home sales, the median sales price, and the number of vacant units. These measures were created from the property transaction data and the U.S. Postal Service vacancy data.

[78] The Denver crime data categorize crimes using the National Incident Based Reporting System. For the analysis in this chapter, the Denver data have been reclassified to Uniform Crime Reporting categories.

9.2 Findings

9.2.1 Descriptive Statistics

The analysis sample for each city contains properties in census tracts that contain NSP2 activities and that are covered by the crime data available to the study team. In each city, these data are for the analysis period, from the start of 2007 through the end of February 2013. Exhibit 9–1 describes the number of properties, foreclosures, and NSP2 activities that occurred during this period in the sample census tracts. The first panel shows the number of census tracts and properties, along with the frequency of foreclosure notices and sales in each county. This information shows that the analysis data include large samples of properties and foreclosures in each city—Chicago, Cleveland, and Denver.

The figures in Panel 1 of Exhibit 9–1 reflect variation across the three counties studied in the coverage of foreclosure notices. Although the information on foreclosure sales is likely to be relatively complete, the proportion of foreclosure sales with an observed foreclosure notice varies substantially. Only 2,732 of the 7,422 foreclosure sales in Cleveland (37 percent) have an observed foreclosure notice, compared with 1,226 of the 1,606 foreclosure sales in Chicago (76 percent) and 7,918 of the 9,698 foreclosure sales in Denver (82 percent). The lower level of data completeness in Cleveland reflects missing data on foreclosure notices resulting from gaps in the coverage of preforeclosure information for Cuyahoga County. These gaps in the completeness of the data imply that our estimates may underestimate the impact of distress to the extent that unobserved distress periods occur among other properties.

Panel 2 of Exhibit 9–1 describes the NSP2 properties that are located within the analysis tracts. For each city, the "NSP2 Tracts" column shows the total number of NSP2 properties that are located within the analysis geography and that were acquired or have an activity start date prior to the end of February 2013. These counts differ from the total counts of NSP2 properties reported in Chapter 4 because the analysis geography for this chapter excludes some NSP2 properties and because the activity start dates for some NSP2 properties are missing or occur after the end of February 2013.

Exhibit 9–1: Number of Properties, Foreclosures, and NSP2 Activities by City

	Cleveland		Chicago		Denver	
	N		*N*		*N*	
Panel 1: Properties and foreclosures						
Census tracts	79		40		29	
Properties	28,890		16,882		35,223	
Distress: Properties with a foreclosure notice prior to foreclosure/REO	2,732		1,226		7,918	
Foreclosure/REO: Properties with an observed foreclosure sale	7,422		1,606		9,698	
Panel 2: NSP2 activities						
	NSP2 Tracts	Matched Sample	NSP2 Tracts	Matched Sample	NSP2 Tracts	Matched Sample
Acquisition and rehabilitation	54	47	95	83	105	98
Redevelopment	7	2	1	1	4	0
Land banking	23	23	8	8	1	0
Demolition	479	400	81	61	0	0
Financing	1	0	2	0	0	0
Total	564	472	187	153	110	98
Percent with a successful match		84		82		89

NSP2 = Neighborhood Stabilization Program 2. REO = real estate owned.

Panel 2 also describes the match rate between NSP2 properties and the Foreclosure and Transaction Data for properties in the analysis sample. The analysis data set for each city includes all recorded transactions in the Foreclosure and Transaction Data between 2000 and February 2013 for properties located in NSP2 tracts. Unsuccessful matches may reflect the property's not having had a transaction since 2000, a property type that is excluded from the data, or missing information. For example, the lower match rates among redevelopment properties likely reflect grantees' purchase of vacant land or nonresidential lots for development. The overall match rates show that the matched data include more than 80 percent of all NSP2 properties in the analysis census tracts in each city.

Exhibit 9–2 displays the total number of violent and property crimes that occurred in the analysis census tracts between 2007 and February 2013. These counts show that aggravated assault and robbery account for more than 90 percent of violent crimes and that theft and burglary account for approximately 80 percent of property crimes in each city. The category definitions and reporting procedures differ slightly across counties, so comparison across counties may reflect differences in the reporting procedures in addition to differences in the relative incidence of crime. Nonetheless, these figures provide insight into types of crime that contribute to the measures of violent crime and property crime in each city.

Exhibit 9–2: Number of Crime Incident Reports by Type

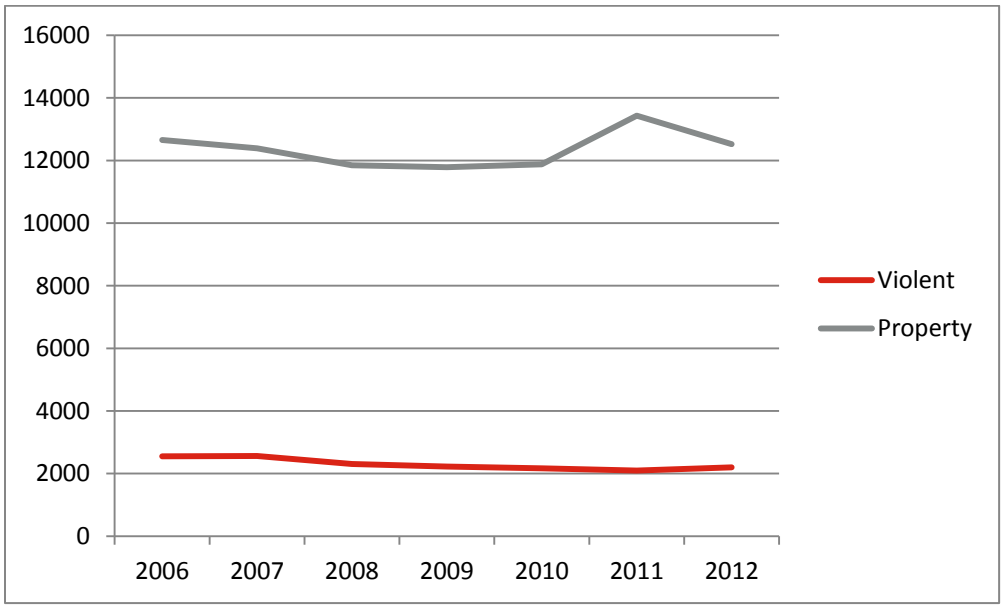
	Cleveland 2007–13		Chicago 2007–13		Denver 2008–13	
	N	Percent	*N*	Percent	*N*	Percent
Violent crime: Total	16,456	100	22,805	100	4,421	100
1A: Homicide	230	1	422	2	81	2
1B: Rape	1,184	7	961	4	304	7
1C: Robbery	8,930	54	9,567	42	1,616	37
1D: Aggravated assault/battery	6,112	37	11,855	52	2,420	55
Property crime: Total	88,235	100	60,778	100	26,078	100
2A: Burglary	28,051	32	13,891	23	8,064	31
2B: Theft	45,956	52	36,124	59	12,239	47
2C: Auto theft	12,971	15	10,341	17	5,509	21
2D: Arson	1,257	1	422	1	266	1

Note: Totals reflect the total number of crime incident reports for 79 Neighborhood Stabilization Program 2 (NSP2) census tracts in Cleveland, 40 NSP2 census tracts in Chicago, and 29 NSP2 census tracts in Denver.

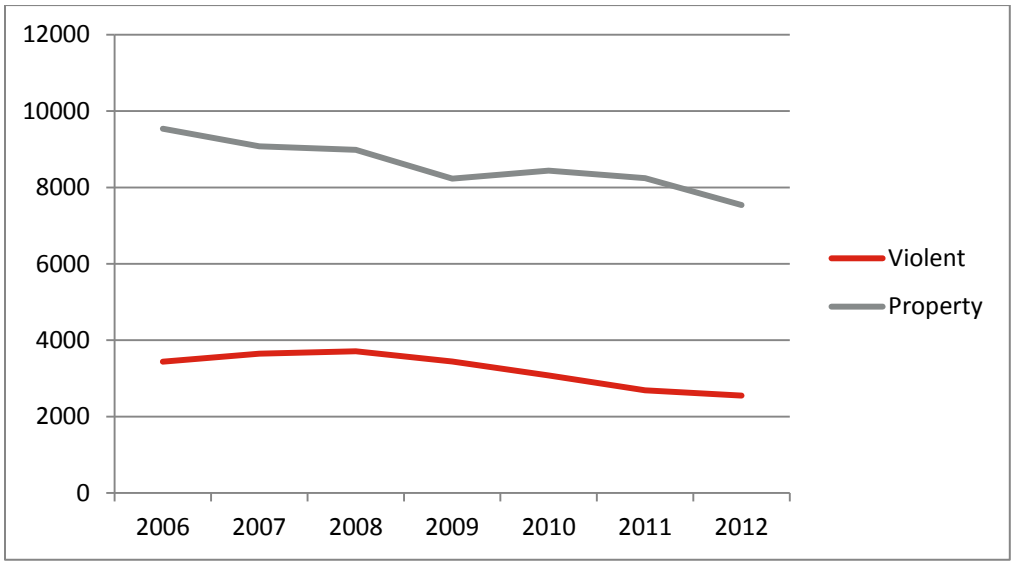
Exhibit 9–3 graphs the trend in violent and property crimes for the census tracts with NSP2 investments in each city. These graphs show that each city has 3 to 6 times more property crimes than violent crimes. They also reveal different trends in the patterns of crime across time. During the analysis period, the number of violent and property crimes remains steady over time in Cleveland, decreases steadily in Chicago, and increases slightly in Denver.

Exhibit 9–3: Trends in Crime Incident Report Counts by Year and City

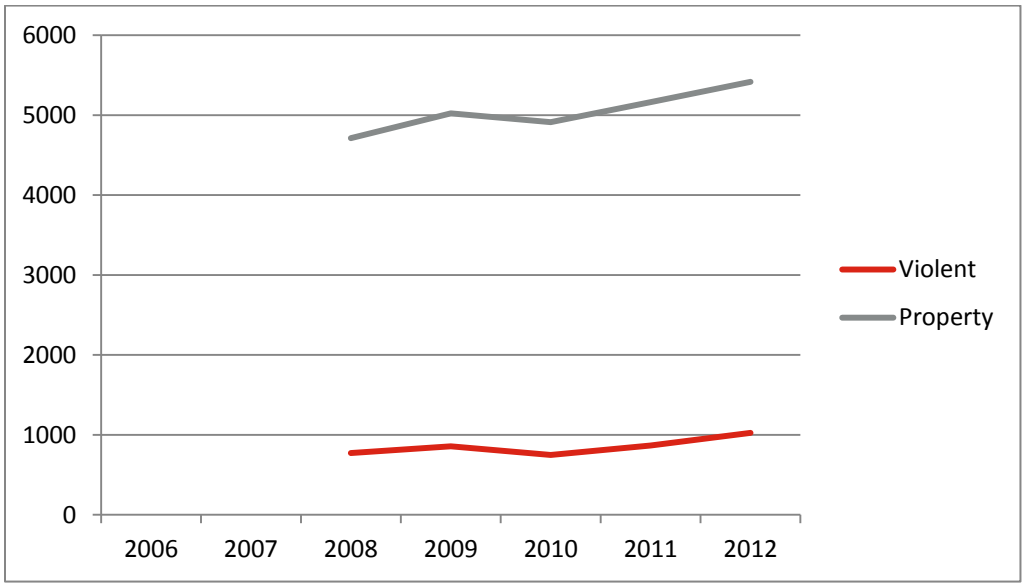
Panel A: Cleveland



Panel B: Chicago



Panel C: Denver



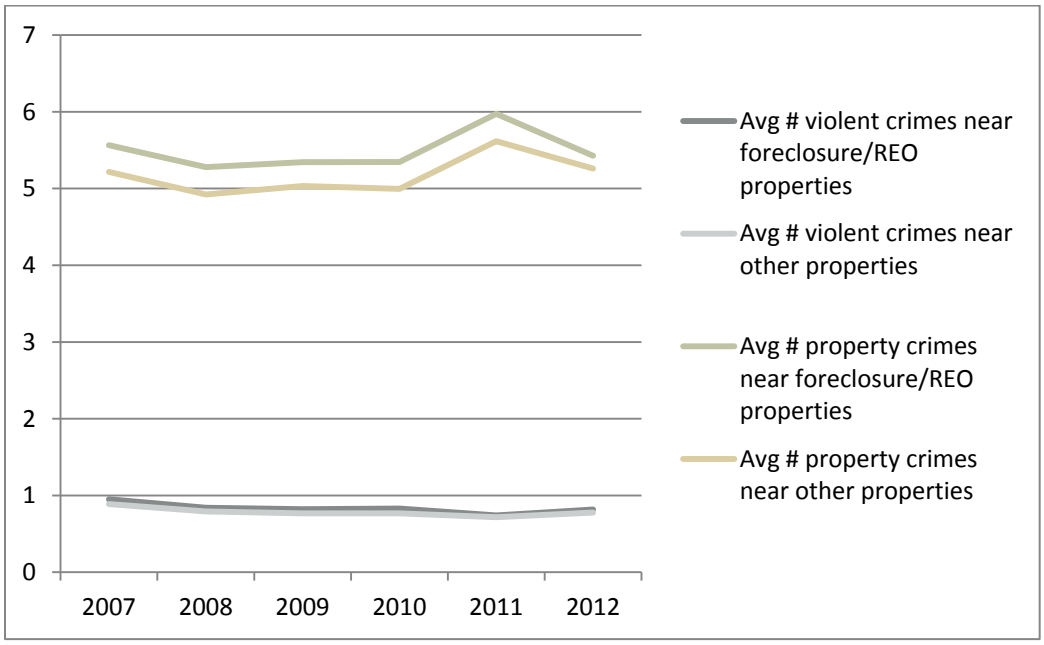
9.2.2 Impact of Foreclosure on Crime

The first component of the analysis examines whether the presence of distress and foreclosure/REO is associated with changes in the incidence of violent and property crime within 250 feet of foreclosed properties. Exhibit 9–4 provides descriptive information that compares the trends in violent and property crime, separating properties that experience a foreclosure sale during the analysis period from properties with no foreclosure. Comparison of the trends for properties with and without a foreclosure provides insight into whether the properties that experience foreclosure may be concentrated in areas with substantially different levels of crime. These figures suggest that foreclosure/REO properties have slightly higher levels of crime nearby, suggesting that foreclosures may be slightly more likely to appear in areas with higher crime. The trends in crime for properties with and without foreclosure/REO are nearly identical, however, and the gap between the lines does not increase over time. Thus, this descriptive

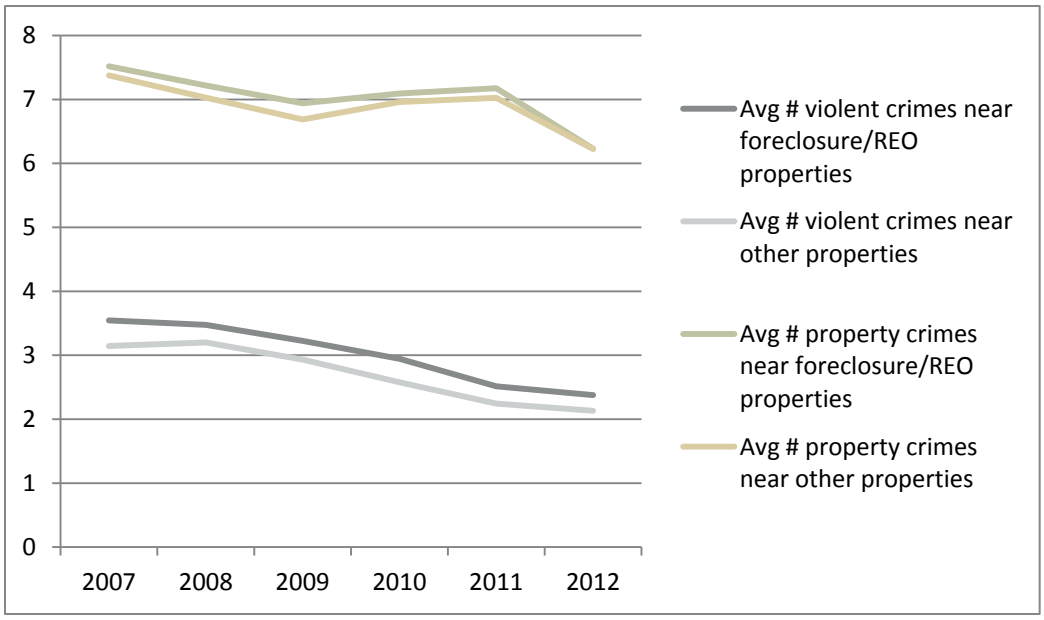
information fails to provide evidence that foreclosure/REO properties produce long-term increases in nearby crime.

Exhibit 9–4: Trends in Crime Incident Reports Within 433 Feet of Properties With and Without a Foreclosure/REO

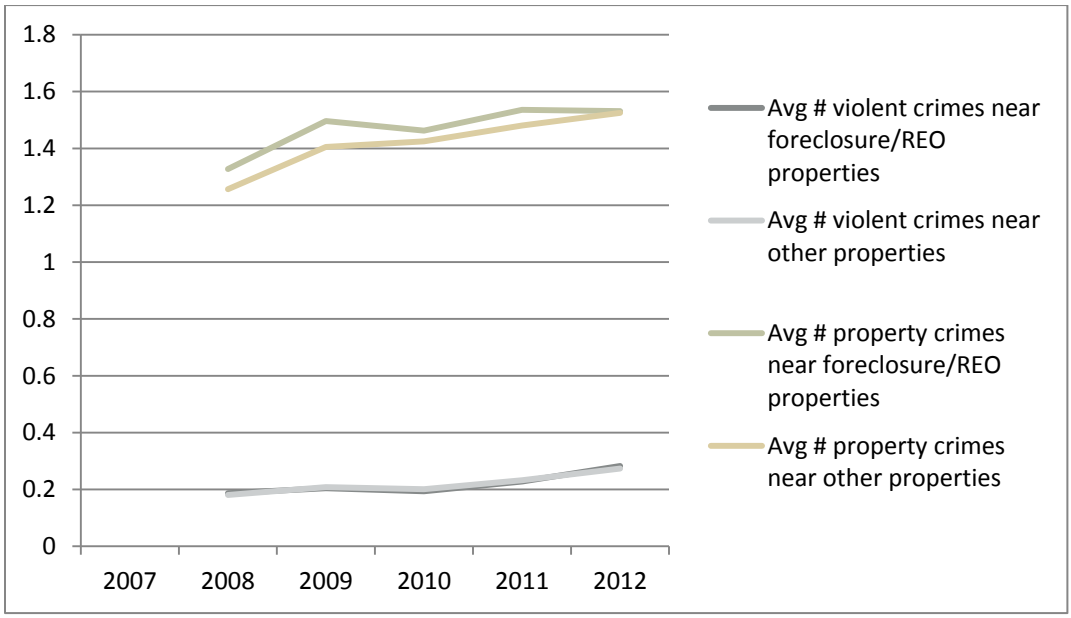
Panel A: Cleveland



Panel B: Chicago



Panel C: Denver



REO = Real Estate Owned.

Exhibit 9–5 shows the regression estimates for the model that examines the relationship between foreclosures and crime. The model tests whether, during the periods of distress and foreclosure/REO, the number of crimes in the proximate areas of affected properties is significantly different from the number of crimes in the comparison areas and in previous periods. The property-level fixed effects control for all factors that may be unique to the property and constant over time. The subarea-quarter fixed effects control for the general trend in crime rates across time within each of the four subareas. The tract-level covariates control for tract-level changes across time using measures of sales volume, home prices, and vacancy. Taken together, this structure isolates variation between the proximate and comparison rings across time.

The interaction terms shown in Exhibit 9–5 provide the impact estimates for the effects of distress and foreclosure/REO on crime. The estimates test whether the number of crimes per property in the proximate area is significantly different than the number of crimes in the comparison areas during the periods of distress and foreclosure, after controlling for all other factors. The estimates for violent crime (top panel) do not show any statistically significant effect of either distress or foreclosure/REO on violent crime in any of the three cities.

In Cleveland and Chicago, the estimates for property crime (bottom panel) similarly do not show any significant impact of distress or foreclosure/REO on property crime. In each of these models, this finding is a failure to reject the null hypothesis, and it is possible that this result is due to a lack of precision in the estimates. For example, the data's low coverage of foreclosure filings in Cleveland means that measurement error may bias the estimated impact of distress toward 0. Alternatively, foreclosure may impact crime only during periods of vacancy, which cannot be observed in the available data.

In contrast, for properties in Denver, the impact estimates show statistically significant *reductions* in property crime during periods when a property was in distress. The coefficient of −0.017 implies that, on average, there were that many fewer property crimes during each quarter of distress in the area immediately proximate to the property than in the comparison areas and previous quarters—after

controlling for the other variables in the model. The average number of property crimes per quarter in Denver was 0.349, so this coefficient represents a 4.9-percent reduction from the average number of crime incident reports. The coefficient of −0.013 for periods of foreclosure/REO is slightly smaller and does not reach the threshold for statistical significance.

A possible explanation for the negative effect of distress on crime in Denver is that the property turnover associated with foreclosure resulted in less monitoring of the property and, therefore, fewer incident reports. Alternatively, property owners in distress but still occupying the property may have been less willing to report property crimes after they received a foreclosure notice. The findings for Denver contrast with the estimates for Cleveland and Chicago—and with the findings from previous research—so this result may also suggest that the relationship between foreclosure and crime depends on the underlying attributes of the neighborhood. In Denver's case, the city's relatively low levels of crime may contribute to the absence of violent and property crime incident reports among foreclosed properties.

Exhibit 9–5: Estimated Impact of Distress and Foreclosure/REO on Crime

	Cleveland		Chicago		Denver	
	Coef.	**S.E.**	**Coef.**	**S.E.**	**Coef.**	**S.E.**
Panel 1: Violent crime						
Proximate area	– 0.0200**	0.005	– 0.0509**	0.015	– 0.0028	0.002
Comparison area 1	– 0.0091	0.006	– 0.0596**	0.018	– 0.0018	0.001
Distress	0.0035	0.004	– 0.0086	0.014	– 0.0006	0.001
Foreclosure/REO	0.0029	0.003	– 0.0037	0.016	0.0005	0.002
Proximate* distress	– 0.0076	0.008	0.0001	0.026	– 0.0008	0.002
Proximate* foreclosure/REO	– 0.0032	0.006	– 0.0048	0.023	– 0.0021	0.002
Property fixed effects	Yes		Yes		Yes	
Subarea-quarter fixed effects	Yes		Yes		Yes	
Tract-level covariates	Yes		Yes		Yes	
Panel 2: Property crime						
Proximate area	0.0111	0.020	– 0.0732	0.038	0.0088	0.007
Comparison area 1	– 0.0078	0.016	– 0.0985	0.035	0.0001	0.005
Distress	0.0056	0.013	– 0.0075	0.024	0.0055	0.004
Foreclosure/REO	– 0.0046	0.012	0.0024	0.031	0.0052	0.005
Proximate* distress	0.0033	0.024	– 0.0008	0.053	– 0.0173*	0.007
Proximate* foreclosure/REO	0.0025	0.018	0.0289	0.057	– 0.0130	0.008
Property fixed effects	Yes		Yes		Yes	
Subarea-quarter fixed effects	Yes		Yes		Yes	
Tract-level covariates	Yes		Yes		Yes	
N observations	1,513,275		820,050		1,459,710	
N properties	20,177		10,934		23,170	

Coef. = coefficient. REO = Real Estate Owned. S.E. = standard error.

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

Taken together, the findings shown in Exhibit 9–5 do not support the hypothesis that foreclosures produced additional crime in NSP2 neighborhoods between the first quarters of 2007 and 2013. This

result suggests that previous findings about the impact of foreclosure on crime should not be extrapolated to all cities or to the types of neighborhoods targeted by NSP2. This conclusion is subject to the limitations of the data and methodology used for this analysis, however. For example, the lack of longitudinal vacancy data at the property level means that the analysis was not able to isolate the impact of foreclosures on crime among properties that experienced extended vacancies. Additionally, the methodology focuses on the foreclosed property and the areas immediately adjacent to the property, under the hypothesis that the largest impacts of crime with appear on or near the foreclosed property itself. Although this approach isolates the impact of an individual foreclosure, it does not capture neighborhood-level changes that may occur as a result of multiple foreclosures. Given these limitations, future research should complement this analysis by using other methodologies to examine the impact of foreclosures on crime in at the neighborhood level in the neighborhoods targeted by NSP2 during the years of the foreclosure crisis.

The estimated coefficients for the remaining covariates shown in Exhibit 9–5 reflect the design of the model. First, the coefficients for the proximate area and comparison area 1 reflect the average difference between the number of crimes in each of these rings and the number of crimes in comparison area 2. These estimates control for any differences in the overall level of crime across rings. Second, the measures of distress and foreclosure/REO control for any variation in crime during the periods of distress and foreclosure/REO that is common to all three rings. The presence of nonsignificant estimates with coefficients near 0 implies that the incidence of crime does not consistently increase or decrease in all three rings during periods of distress and foreclosure. This finding implies that the average incidence of crime across all three rings does not significantly differ from the overall trend for the subarea.

In order to interpret these estimates as the impact of foreclosures on crime, the analysis approach must eliminate the potential for reverse causality to explain the estimates. Because increases in crime may affect the desirability and potential sales value of nearby homes, it is possible that property owners' decisions to default and banks' decisions to foreclosure on a property may be influenced by changes in neighborhood crime. As a result, the direction of causality in estimates of the association between foreclosure and crime requires examination. In particular, the estimated coefficients do not differentiate between the order of crimes and foreclosure actions that occur during the same quarter.

In order to determine whether reverse causality is present, the analyses in Exhibit 9–5 were replicated using variations of the causality test implemented by Ellen, Lacoe, and Sharygin (2013), which is based on the approaches taken by Schuetz, Been, and Ellen (2008) and Campbell, Giglio, and Pathak (2011) for analyses of home prices. This test involves replicating the estimates in Exhibit 9–5 after including a measure that reflects future foreclosures. A significant association between crime in the current quarter and the appearance of foreclosures in future quarters would indicate either that the estimation approach does not adequately eliminate the influence of reverse causality or that some omitted variable influences both crime and foreclosure.

Appendix E–1 presents the results from this causality test for each county using two specifications of future foreclosures. The appendix presents results for a model that includes measures that identify whether the property experiences distress and foreclosure/REO in the next quarter. This specification tests whether there is a short-term association between crime in the current quarter and foreclosure actions in the next quarter—which would raise concerns about reverse causality within the same quarter. Appendix E–2 presents results for a model that includes measures that identify whether the property experiences distress and foreclosure/REO in the 12 months following the end of the quarter. This

specification tests whether there is a longer term association between crime and future foreclosures—which would raise concerns about omitted variable bias.

The results in Appendices E–1 and E–2 pass the first specification in all cases, failing to suggest that the results are due to reverse causality. In other words, the results do not provide any evidence that crime leads to foreclosure in the short term, reducing concerns that the impact estimates reflect the impact of crime on foreclosures within the same quarter. The second panel shows that the models pass the second specification in all cases except for the measure of future distress in Cleveland. This result may be due to chance, as the tests in Appendices E–1 and E–2 include a total of 24 variables—2 variables in 4 models for 3 cities. Significance at the 5-percent level suggests that a random variable would produce 1 significant coefficient out of 20. Alternatively, the result may suggest that the model specification does not adequately control for omitted variables associated with both distress and crime in Cleveland. Because the estimates in Exhibit 9–5 do not show a significant impact of either distress or foreclosure/REO on either violent crime or property crime, this interpretation does not change our overall conclusions from Exhibit 9–5.

9.2.3 Impact of NSP2 Activities on Crime

The second component of the analysis tests whether the NSP2 activities have an impact on the incidence of crime on or near NSP2 properties. Appendix E–3 provides descriptive information about the trends in violent and property crime near NSP2 and non-NSP2 properties. For each city, the first set of graphs shows the cumulative number of NSP2 properties in each year and also shows separately properties with activities related to acquisition, rehabilitation, or redevelopment and properties with land banking and demolition activities. The second and third sets of graphs for each city show the trends in violent crime and property crime, respectively, for properties with no NSP2 investment and for properties with NSP2 investment, as well as for NSP2 properties separated by activity type.

Exhibit 9–6 presents the regression estimates that test whether NSP2 interventions significantly alter the incidence of violent and property crime in the proximate areas surrounding NSP2 properties. The model tests whether the number of crimes in the proximate area changes significantly following the NSP2 investment relative to the number of crimes in the comparison areas. The basic structure of the model is similar to the model used to examine the impacts of distress and foreclosure/REO on crime. The property-level fixed effects control for all factors that may be unique to the property and constant over time. The subarea-quarter fixed effects control for the trend in crime rates across time within each of four subareas. The tract-level covariates control for tract-level changes across time using measures of sales volume, home prices, and vacancy. The model also includes measures of distress and foreclosure/REO to control for any changes in crime during the periods of distress and foreclosure/REO. Lastly, the indicators for the proximate area and comparison area 1 control for differences in the average number of crimes between rings.

A key variable for the analysis is the measure of NSP2 activity, which identifies the period of NSP2 investment as beginning with the quarter of acquisition. For properties that are not acquired, this measure identifies the quarter of the start date for the earliest NSP2 activity identified by the grantee. The period of NSP2 investment then continues through the end of the analysis period. In the model, the noninteracted measure of NSP2 investment, NSP2 Activity, identifies whether the level of crime changes consistently in all three rings following NSP2 investment. The interaction of the NSP measure with the proximate ring, Proximate*NSP2 Activity, then provides the impact estimate, measuring the extent to which the relative incidence of crime in the proximate area compared with the comparison areas changes following NSP2 intervention.

The estimates do not show any impact of NSP2 activities in Chicago or Denver but find that NSP2 activities significantly reduced property crime in Cleveland. The estimated coefficients in both Chicago and Denver suggest that the incidence of crime on or near NSP2 properties following NSP2 intervention does not differ significantly from the level of crime in comparison rings during the same period. Moreover, the estimates for the noninteracted term suggest that the trend in crime rates for the proximate and comparison rings do not differ significantly from the broader trends in each subarea.

Although these results suggest that NSP2 activities did not significantly impact crime outcomes in Chicago and Denver, the small number of NSP2 properties in each city limits the precision of the estimates. The 153 NSP2 properties for Chicago include 83 rehabilitation properties, 61 demolition properties, 8 land banking properties, and 1 redevelopment property. The 98 NSP2 properties in Denver are all rehabilitation properties. In contrast, the 472 NSP2 properties in Cleveland include 400 demolition properties, as well as 47 rehabilitation properties, 23 land banking properties, and 2 redevelopment properties.

In Cleveland, the estimates shown in Exhibit 9–6 suggest that the NSP2 intervention resulted in a significant decrease in property crime. The coefficient of −0.144 implies that the number of property crimes in the proximate area was lower than the average for the comparison areas and prior quarters by an average of 0.144 crimes per quarter during the period following NSP2 intervention—after controlling for the other variables in the model. The average number of property crimes per quarter in Cleveland is 1.33, so this coefficient represents an 11-percent reduction from the average number of crime incident reports. Additionally, the negative coefficient on the estimate for the noninteracted measure of NSP2 activity suggests that the number of property crimes across all three rings decreased relative to the estimated trend for non-NSP2 properties in the same subarea. The decrease is not significant at the 5-percent level, however.

The finding on property crime in Cleveland is subject a concern about reverse causality: NSP2 grantees may have responded to changes in crime by acquiring properties or starting NSP2 activities within the same quarter. The implementation analysis reported in Chapter 5 does not suggest that such thinking was pervasive in Chicago and Denver but suggests that grantees in Cleveland considered crime when making decisions about the location and timing of demolitions.

Appendix E–4 shows the results of a test for reverse causality that replicates the estimates in Exhibit 9–6 after including measures that reflect NSP2 activity in future quarters. The first panel presents results when the model includes an indicator variable for whether NSP2 intervention was initiated in the next quarter. This specification tests whether there is a short-term association between crime in the current quarter and NSP2 investment in the next quarter—which would indicate that NSP2 grantees consider changes in crime and respond quickly. Appendix E–5 presents results when the model includes an indicator variable for whether NSP2 intervention was initiated at any point during the 12 months following the end of the quarter. This specification tests whether there is a longer term association between crime in the current quarter and NSP2 investment in future quarters—which would raise concerns about omitted variable bias.

Exhibit 9–6: Estimated Impact of NSP2 Intervention on Crime

	Cleveland		Chicago		Denver	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Panel 1: Violent crime						
Proximate area	– 0.0202**	0.005	– 0.0510**	0.015	– 0.0035	0.002
Comparison area 1	– 0.0091	0.006	– 0.0596**	0.018	– 0.0022	0.001
NSP2 activity	0.0078	0.010	0.0286	0.023	– 0.0087	0.010
Proximate* NSP2 activity	– 0.0362	0.027	– 0.0030	0.048	0.0154	0.019
Distress	0.0009	0.003	– 0.0083	0.012	– 0.0002	0.002
Foreclosure/REO	0.0019	0.002	– 0.0052	0.012	0.0001	0.001
Property fixed effects	Yes		Yes		Yes	
Subarea-quarter fixed effects	Yes		Yes		Yes	
Tract-level covariates	Yes		Yes		Yes	
Panel 2: Property crime						
Proximate area	0.0124	0.020	– 0.0727	0.038	0.0071	0.007
Comparison area 1	– 0.0078	0.016	– 0.0985**	0.035	0.0001	0.005
NSP2 activity	– 0.0528	0.030	– 0.0211	0.043	0.0022	0.020
Proximate* NSP2 activity	– 0.1440**	0.053	0.0835	0.071	0.0267	0.026
Distress	0.0056	0.011	– 0.0077	0.019	– 0.0003	0.004
Foreclosure/REO	– 0.0032	0.009	0.0121	0.022	0.0009	0.004
Property fixed effects	Yes		Yes		Yes	
Subarea-quarter fixed effects	Yes		Yes		Yes	
Tract-level covariates	Yes		Yes		Yes	
N observations	1,513,275		820,050		1,459,710	
N properties	20,177		10,934		23,170	

Coef. = coefficient. NSP2 = Neighborhood Stabilization Program 2. REO = Real Estate Owned. S.E. = standard error.
*p<.05; **p<.01

The results for Cleveland reported in Appendix E–5 pass the test for longer term associations between crime and future NSP2 activity, failing to raise concerns about omitted variable bias or delayed responses by NSP2 grantees to changes in crime. The results in Appendix E–4 show positive associations between crime in the current quarter and the start of NSP2 activity in the next quarter, however, with the coefficients significant at the 5-percent level in the model for violent crime and at the 10-percent level in the model for property crime. These results are consistent with the implementation analysis's finding that crime was a consideration when the NSP2 grantees in Cleveland determined the timing and location of demolitions.

This result suggests that the estimated impact of NSP2 activities shown in Exhibit 9–6 for Cleveland may be biased to the extent that crime leads to NSP2 activities. The positive association between crime and future foreclosures, however, implies that the estimated impacts of NSP2 activities may *understate* the decrease in crime that is due to NSP2 activities—rather than contribute to the finding that NSP2 properties in Cleveland experienced significant reductions in property crime. As a further precaution, we replicate the estimates in Exhibit 9–6 using a measure of NSP2 investment that excludes the first quarter

of NSP2 investment, including quarters in which the entire quarter falls after the start of NSP2 investment.[79] The results for all models are robust in sign and significance to the estimates in Exhibit 9–6.

The remainder of this section presents estimates from extensions of the analysis presented in Exhibit 9–6 that further explore the impact of NSP2 activities on crime by using alternative measures of NSP2 activity. Exhibit 9–7 replicates the estimates for a model that separates NSP2 properties by activity type. The first measure of NSP2 activity includes all properties where the grantee reported an acquisition and rehabilitation or a redevelopment activity. The second measure includes all properties with a land banking or demolition activity and no investments related to acquisition and rehabilitation or redevelopment. The number of NSP2 properties is fewer than 100 for all categories except demolition/land banking in Cleveland, so the coefficients may not be precisely estimated.

The estimates for property crime suggest that the impact of NSP2 activities on property crime in Cleveland results entirely from land banking and demolition activities. The coefficient of −0.157 on the impact estimate for demolition properties is slightly larger than the estimate in 9–6. In contrast, the estimated impact of rehabilitation and redevelopment properties is not significantly different from 0. Conversely, the estimates for violent crime show the reverse pattern. The estimates imply that properties with rehabilitation and redevelopment activities significantly reduced the incidence of violent crime on or near these properties, whereas demolition and land banking activities do not significantly reduce violent crime near those properties. The impact estimates for Chicago and Denver do not show significant impacts of either type of NSP2 activity.

Exhibit 9–8 shows the results of a final specification, which separates the measure of NSP2 activity into three stages of the NSP2 intervention. The first measure identifies any quarter in which a property was acquired by the NSP2 grantee but NSP2 activities had not yet started. The second measure captures the period of NSP2 activity, identifying the quarter when NSP2 activities started and any subsequent quarters prior to the completion of all NSP2 activities. The third measure captures the period following completion of all NSP2 activities, identifying the quarter when all NSP2 activities are completed and all subsequent quarters through the end of the analysis period.[80] The impact estimates for Chicago and Denver do not show significant impacts of either type of NSP2 activity.

[79] This measure will understate the impact of NSP2 activities to the extent that it excludes the start of NSP2 investment during the prior quarter. We prefer the measure in Exhibit 9–6 because it captures the work period of the NSP2 activity. Because the work period is frequently less than 30 days for demolitions, the revised measure frequently captures only the period after NSP2 activities are completed.

[80] If the start and completion of NSP2 activities occur in the same quarter, the second measure identifies the quarter when NSP2 activities occurred and the third measure identifies all subsequent quarters.

Exhibit 9–7: Estimated Impact of NSP2 Intervention on Crime by Activity Type

	Cleveland		Chicago		Denver	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Panel 1: Violent crime						
Proximate area	– 0.0202**	0.005	– 0.0510**	0.015	– 0.0035	0.002
Comparison area 1	– 0.0091	0.006	– 0.0596**	0.018	– 0.0022	0.001
NSP2 activity (AR/RD)	0.0363	0.023	0.0301	0.028	– 0.0087	0.010
NSP2 activity (DE/LB)	0.0041	0.012	0.0308	0.036		
Proximate* NSP2 activity (AR/RD)	– 0.0883**	0.029	0.0366	0.062	0.0154	0.019
Proximate* NSP2 activity (DE/LB)	– 0.0291	0.030	– 0.0874	0.060		
Distress	0.0009	0.003	– 0.0083	0.012	– 0.0002	0.002
Foreclosure/REO	– 0.0202	0.005	– 0.0510	0.015	– 0.0035	0.002
Property fixed effects	Yes		Yes		Yes	
Subarea-quarter fixed effects	Yes		Yes		Yes	
Tract-level covariates	Yes		Yes		Yes	
Panel 2: Property crime						
Proximate area	0.0124	0.020	– 0.0727	0.038	0.0071	0.007
Comparison area 1	– 0.0078	0.016	– 0.0985**	0.035	0.0001	0.005
NSP2 activity (AR/RD)	0.0854	0.095	– 0.0268	0.056	0.0022	0.020
NSP2 activity (DE/LB)	– 0.0694*	0.032	– 0.0075	0.069		
Proximate* NSP2 activity (AR/RD)	– 0.0449	0.127	0.1117	0.089	0.0267	0.026
Proximate* NSP2 activity (DE/LB)	– 0.1574**	0.057	0.0235	0.103		
Distress	0.0058	0.011	– 0.0077	0.019	– 0.0003	0.004
Foreclosure/REO	0.0124	0.020	– 0.0727	0.038	0.0071	0.007
Property fixed effects	Yes		Yes		Yes	
Subarea-quarter fixed effects	Yes		Yes		Yes	
Tract-level covariates	Yes		Yes		Yes	
N observations	1,513,275		820,050		1,459,710	
N properties	20,177		10,934		23,170	

AR = acquisition/rehabilitation. Coef. = coefficient. DE = demolition. LB = land banking. NSP2 = Neighborhood Stabilization Program 2. RD = redevelopment. REO = Real Estate Owned. S.E. = standard error.

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

Note: AR/RD properties include all properties with a rehabilitation or redevelopment activity. DE/LB properties include all properties with a demolition or land banking activity and no rehabilitation or redevelopment activity.

Exhibit 9–8: Estimated Impact of NSP2 Intervention on Crime by Stage of NSP2 Intervention

	Cleveland		Chicago		Denver	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
Panel 1: Violent crime						
Proximate area	–0.0202**	0.005	–0.0510**	0.015	– 0.0035	0.002
Comparison area 1	– 0.0091	0.006	–0.0596**	0.018	– 0.0022	0.001
Acquisition period	0.0225	0.026	– 0.0042	0.036	0.0379	0.057
Activity period	0.0181	0.017	0.0405	0.041	– 0.0316	0.021
Completion period	0.0036	0.012	0.0398	0.028	– 0.0068	0.008
Proximate* acquisition period	– 0.0304	0.035	0.0731	0.076	– 0.0542	0.065
Proximate* activity period	– 0.0399	0.029	– 0.0341	0.068	0.0791	0.071
Proximate* completion period	– 0.0359	0.033	– 0.0282	0.055	0.0024	0.012
Distress	0.0010	0.003	– 0.0083	0.012	– 0.0002	0.002
Foreclosure/REO	0.0019	0.002	– 0.0052	0.012	0.0001	0.001
Property fixed effects	Yes		Yes		Yes	
Subarea-quarter fixed effects	Yes		Yes		Yes	
Tract-level covariates	Yes		Yes		Yes	
Panel 2: Property crime						
Proximate area	0.0124	0.020	– 0.0727	0.038	0.0071	0.007
Comparison area 1	– 0.0078	0.016	–0.0985**	0.035	0.0001	0.005
Acquisition period	– 0.0104	0.066	0.0175	0.062	0.0239	0.058
Activity period	0.0314	0.057	– 0.0269	0.065	0.0079	0.037
Completion period	– 0.0794*	0.037	– 0.0378	0.049	– 0.0027	0.025
Proximate* acquisition period	–0.3576**	0.115	0.0297	0.134	0.0779	0.101
Proximate* activity period	– 0.1524	0.113	0.1990	0.132	0.0097	0.065
Proximate* completion period	– 0.1168*	0.057	0.0408	0.074	0.0264	0.026
Distress	0.0056	0.011	– 0.0076	0.019	– 0.0003	0.004
Foreclosure/REO	– 0.0030	0.009	0.0121	0.022	0.0009	0.004
Property fixed effects	Yes		Yes		Yes	
Subarea-quarter fixed effects	Yes		Yes		Yes	
Tract-level covariates	Yes		Yes		Yes	
N observations	1,513,275		820,050		1,459,710	
N properties	20,177		10,934		23,170	

Coef. = coefficient. NSP2 = Neighborhood Stabilization Program 2. REO = Real Estate Owned. S.E. = standard error.

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

In Cleveland, the results do not show clear evidence that the impact of NSP2 activities on crime is concentrated during any single period. Similar to Exhibit 9–6, the estimates for violent crime do not show

any significant impact of NSP2 activities. For property crime, the coefficients for all three periods are negative, with the size of the coefficient estimate decreasing from the acquisition period to the NSP2 activity period and completion period. The lack of an acquisition period for many demolition properties and the absence of statistical significance for the NSP2 activity period, however, prevent strong conclusions about the timing of NSP2 impacts in Cleveland. Instead, the most conclusive finding from these estimates is that NSP2 properties continue to show a significant reduction in property crime during the completion period. The median NSP2 property in Cleveland was observed for five quarters from completion of the NSP2 activity through the first quarter of 2013, so this finding suggests that the impact of demolition activities in Cleveland did not immediately disappear following completion of the NSP2 activity.

9.3 Conclusion

This chapter seeks to answer two questions about the incidence of crime near NSP2 properties in Chicago, Cleveland, and Denver. First, the analysis examines the impact of foreclosures on crime, exploring the extent to which the findings in NSP2 neighborhoods are consistent with the estimates from previous studies of other cities. Second, the analysis seeks to determine whether the investments made by NSP2 grantees reduced the incidence of crime on or near NSP2 properties.

The estimated impacts of foreclosure on crime do not support the hypothesis that foreclosures resulted in additional violent and property crime on or near properties that have a foreclosure filing or that experience a foreclosure sale. The analysis examines crime outcomes between the first quarters of 2007 and 2013 for properties in census tracts that received NSP2 investment. The results do not find any evidence that violent or property crime increased on or near properties in distress or foreclosure/REO in NSP2 tracts in Cleveland or Chicago. In Denver, the analysis finds significant reductions in property crime during period of distress. Interpretation of these results is subject to the limitations of the data and methodology used for the analysis. With that caveat in mind, the results suggest that existing evidence from other cities and time periods cannot be extrapolated to other cities or to the types of neighborhoods that were the focus of NSP2. Instead, the literature would benefit from further research that focuses on a variety of neighborhoods affected by the foreclosure crisis. Additionally, such research should examine the extent to which estimated impacts are robust to alternative methodologies and to different types of neighborhood contexts.

The analyses of NSP2 properties show significant reductions in violent and property crime near NSP2 properties in Cleveland but do not find significant impacts of NSP2 activities on nearby crime in Chicago or Denver. In Cleveland, the estimates for violent crime suggest that rehabilitation and redevelopment activities significantly reduced the incidence of violent crime within 250 feet of the NSP2 property but that no significant changes in violent crime were observed near demolition and rehabilitation properties. Conversely, the estimates for property crime do not show significant changes in property crime near rehabilitation and redevelopment activities but show significant reductions in property crime near demolition and land banking properties. Extensions of this analysis further suggest that the impact on property crime is sustained following completion of NSP2 activities—with the median NSP2 property observed for five quarters.

The estimates for Chicago and Denver may reflect limited statistical power, as the estimates seek to measure the average effect for 153 NSP2 properties in Chicago and 98 NSP2 properties in Denver—compared with 473 NSP2 properties in Cleveland. Alternatively, NSP2 activities may have had minimal effect on violent and property crime near NSP2 properties in these cities. Further research using larger

samples would be necessary to determine the extent to which the findings observed in Cleveland are present in other cities.

Lastly, the findings in this chapter are subject to the limitations of the data and methodology used for the analysis and should be interpreted within the context of the analysis design. First, the methodology focuses on changes in violent and property crime within 250 feet of each property under the hypothesis that the largest impacts of foreclosures and NSP2 activities will occur on or near the property itself. The estimated impacts therefore do not capture any broader impacts experienced by all properties in the neighborhood. They also cannot distinguish whether the impacts reflect changes in the overall incidence of crime or displacement of crime to other areas. Second, the analysis follows NSP2 properties through the end of February 2013 and therefore does not provide insight into the longer term impacts of NSP2 investment.

10. The Impact of NSP2 on Housing Values

In this chapter, we describe the statistical approaches used to estimate the impacts of foreclosures on individual house prices and the potential mitigation effects of Neighborhood Stabilization Program 2 (NSP2). The analysis makes use of microlevel data from 19 counties and exploits more than 1 million sale transactions from 2007 to 2013. Our original goal was to explore four key questions:

1. Do foreclosures impact the values of neighboring homes?
2. Does NSP2 activity mitigate the impact of foreclosure?
3. Is the impact of NSP2 stronger in areas with concentrated activities?
4. What is the mechanism for NSP2 impact?

Although the literature on foreclosure is maturing, only a handful of papers have looked at the potential effectiveness of NSP activities (see Chapter 2). These papers are based on case studies and are largely qualitative. In contrast, this chapter summarizes this study's efforts to use analysis of a large sample to tease out generalizable results from NSP2 activities. Though case studies have wide application, they are implicitly local and specific in nature. In contrast, the foreclosure crisis was national in scope and unprecedented in scale. Moreover, the set of government responses to it spanned housing markets across the country. NSP2 activities were designed to concentrate investment in particular types of neighborhoods, but the 19 counties we include in our analysis span small and large cities, urban and suburban areas, and growing and declining regions. We approached the four research questions by asking what could be generalized from across these diverse housing submarkets. Though case studies have begun to describe the crisis and responses, there is less on which to base a general response to a broad housing crisis. The goal of the large sample analysis was to learn from the NSP2 activities in a way that could help shape future policy.

To answer the research questions about the impact of NSP2 on individual house prices, we use a set of three complementary analytic approaches that differ somewhat from the work conducted by others to answer similar questions about spillover effects. This analysis has evolved significantly since the research project began, moving from a straightforward hedonic analysis to an exploration of omitted variables, sample selection, and the size of NSP2 investments relative to the size of the foreclosure crisis.

To summarize the results, we found the systematic spillover effect of foreclosures that other researchers have found. We did not, however, find evidence that permits useful generalizations about the effectiveness of NSP2 activities. There was ample evidence that NSP2 activities were statistically significant in explaining house prices but many cases in which the direction of the impact—negative instead of positive—was unexpected. Moreover, the results were fragile, with signs and significance changing in response to apparently benign changes in sample sizes or parameterizations. Thus, the analysis cannot provide definitive conclusions about the independent effect of NSP2 on surrounding home prices.

This chapter reviews the three statistical approaches undertaken to identify the independent effect of NSP2 activity on surrounding house prices and provides documentation of the instability of the results.

The chapter also moves beyond these results to take a closer look at the underlying structure of NSP2 and the interaction between these activities and local house price dynamics. Although the large-scale analysis provided systematic evidence of negative foreclosure spillovers and supported the motivation for

intervention in the first place, the results of the NSP2 analysis suggest that some of the standard assumptions used at the outset were mistaken. Rather, this large-scale analysis revealed the importance of understanding neighborhoods as the right unit of analysis. One of the conclusions is that NSP2 activity was itself an indicator of neighborhood-level price dynamics and that the other control variables used in the analysis were insufficient to allow for a clean estimate of the effect of NSP2 activities on foreclosure. Over the course of the analysis, we came to understand that the size of these unobserved neighborhood-level price dynamics swamped the size of the NSP2 activities. The combination of imperfect neighborhood proxies and the scale of these price movements left finding the individual contributions of NSP2 difficult.

The chapter is organized first around the empirical approaches used and their appropriate usage. In the same section, we address the assumptions imposed in practice and examine them. We provide selected summary statistics and sample results to speak to the heterogeneity in the data that resisted clean interpretation. Stepping back from the microlevel results, the final section of the chapter places the underlying structure of the approach to large-scale analysis in two important contexts. The first is the scale of the housing crisis that had become clear by 2009 and that motivated the set of NSP2 activities. The second attempts to understand what could generate the inconsistent results from the analyses. We conclude with our interpretation of the results and provide suggested guidance for how NSP-type activities might be shaped in the future.

10.1 Empirical Approaches to Impact and Assessment

Our set of empirical approaches is organized around house prices as the dependent variable. In each, we look to changes in house prices as evidence of both the spillovers from foreclosure and the mitigating effects of NSP2 activities. Both of these explanatory variables are among many contributing factors that influence house prices. Thus it is essential to design the approaches to control for the multitude of other factors, thereby cleanly identifying the effects of both foreclosures and NSP2 activity on house prices. We began our analysis with a direct assessment of NSP2 activity by using traditional hedonic analysis. We then sought more robust results, first by looking at the indirect impacts of NSP2 by conditioning foreclosure results on local NSP2 activity and second by using a differences-in-differences approach. These approaches are detailed below.

10.1.1 The Direct Assessment of NSP2 by Traditional Hedonic Analysis

The central tool used in this report is a hedonic analysis. Rosen (1974) established the method for determining marginal willingness to pay, and it has been applied many times in the literature to assess the independent value of housing characteristics on overall house prices. These include property characteristics such as the size of the lot and living area, the number of bathrooms, the existence of a pool, and the quality of the structure, among others. The characteristics of the neighborhood also influence house prices, but these were mostly aggregated into locational fixed effects so that locational amenities and disamenities like schools, weather, and crime were not explicitly enumerated and instead treated as fixed effects. We focused on two particular local amenities: exposure to foreclosure activity and exposure to NSP2 activity. Like the existing literature, our prior belief on the impact of foreclosure was that foreclosure activity would be a disamenity. The empirical question was whether or not NSP2 activity would be a significant amenity. In our context, we are most interested in the marginal cost of a foreclosure on surrounding homes and the impact of NSP2 activities on mitigating foreclosure. The basic framework is given by Equation 1.

(Eq.1) $\ln p_{ijt} = \alpha + x_i\beta + T_t + FE_j + T_t{*}FE_j + g(FCL_{it}) + h(NSP2_{ijt}) + \varepsilon_{it}$

In Equation 1, p is the observed sale price of an arm's-length sale of dwelling, *i*, in neighborhood, *j*, at time, *t*; *x* is a vector of dwelling attributes; T_t is a set of dummies to capture aggregate price changes over time; and FE_i is a set of geographic fixed effect. The geographic fixed-effect dummies should capture the "club"-type amenities that contribute to dwelling values but exist beyond the property lines. We interacted the time and tract fixed effects to allow for different aggregate price movements within tracts.[81] We did this so that measured price effects on foreclosure and NSP2 activity would be free of local price movements.

The literature on foreclosure has used several variants on Equation 1 to offer different characterizations of foreclosure. That is, it may be that each additional foreclosure imposes the same cost on surrounding homes. It could also be that costs are nonlinear, with marginal impacts changing at different levels of foreclosure activity. The same argument can be used with regard to NSP2 activity. NSP2 activity impact may be a function of the number of surrounding NSP2 sites nearby, the amount of NSP2 dollars invested, and the types of activity. For these reasons g() and h() are reported as generic (unknown form, unspecified) functions of each in Equation 1. The data will dictate which functional form will be used.

Following Harding, Rosenblatt, and Yao (2009) and Ihlanfeldt and Mayock (2013), we started our analysis with Equation 2.

(Eq.2) $\ln p_{ijt} = \alpha + x_i\beta + T_t + FE_j + T_t{*}FE_j + \sum_{w \in W} g(FCL_{it}) + \sum_{z \in Z} h(FCL_{it}) + \varepsilon_{it}$

Augmenting the basic hedonic in Equation 1, the variables w and z refer to our parameterization of the windows on foreclosure and NSP2 activity, taking Harding, Rosenblatt, and Yao's (2009) "ring" approach.

Specifically, these two right-hand side variables included spatial and temporal variables capturing foreclosure and NSP2 activity over time and space relative to each observed house sales price in the data. The need for a spatial dimension of foreclosure is obvious, but how it should be parameterized is not. That is, clearly we would expect an adjacent foreclosure to have a greater impact on a house sales price than would a foreclosure several miles away. Theory offers no guide as to whether the impact is linear or nonlinear or over what horizon, however. We started our analysis using Harding, Rosenblatt, and Yao's (2009) rings: three distance rings, at 0 to 300 feet, 300 to 500 feet, and 500 to 1,000 feet from the subject house sale. Our slight variation on these rings is with regard to time: we include separate spatial rings for different temporal windows around the time of sale. We wanted to allow the effect of foreclosure to be manifest before, during, and/or after a sale. We did this because the mechanisms that might link a home in distress to the price of another house may operate at different points in the arc over the life of a distressed property. Indeed, the notice of default may trigger behavioral changes in local sellers and buyers; the appearance of blight can happen before or after the notice of default. We wanted to be able capture any effects of foreclosure before, during, and/or after a sale.

[81] Other researchers have used census block groups as the locational fixed effects. We found that too many block groups were too thinly populated to use this approach. Although theoretically appealing, the results added little significance to the measured effects of foreclosure.

We developed many different specifications to explore the robustness of the results. For example, we offered several characterizations of foreclosure activity, including distinct periods of foreclosure from the notice of default to foreclosure sale and from REO status to property disposition. We parameterized the intensity of foreclosure activity in several ways. First, we included the count—the number of different types of foreclosure activity within a window of time and distance ring. Second, we included an increasing impact measure: foreclosure count and count-squared, keyed to several different thresholds (by one foreclosure, two foreclosures, and three or more foreclosures or by one and two or three or more). We also looked at measuring NSP2 activity by, the amounts invested, the count of activities within the various spatial rings (and the square of the counts) at thresholds of activity, and a simple indicator of any activity. In short, we imposed no strong prior assumptions on the parameterization of either the cost of foreclosure or the benefit of NSP2 activity.

We then looked to establish patterns among the results with regard to foreclosure spillovers. The wide variation among characterizations of foreclosure activity and their parameterizations were attempts to let the data determine the external cost of foreclosure—over what distance, at what intensity, and during what time period. In order for the results to be interpreted as independent effects of foreclosure at a distance, several assumptions are typically imposed without testing. The first of these is reverse causality. In this case, a concern is that rather than foreclosure being causal, it could be that lower prices cause foreclosure. We lean on the literature that has gone to some lengths to test reverse causality (Gerardi et al., 2012). Their logic, to which we subscribed, is that interacting time and spatial fixed effects solve the problem of reverse causality. By using interacted time and location-fixed effects, the coefficient on foreclosure activity should have been free of local price movements and should capture the independent effect of foreclosure spillover on house sale prices nearby. The second assumption that is required of hedonic analysis is that the overall specification is correct. If misspecified, the marginal coefficients may not be cleanly interpretable. The third assumption is that there are no omitted variables that are correlated with foreclosure activity variables and the subsequent NSP2 activity variables. We discuss these assumptions below.

This direct hedonic approach to measuring the impact of a foreclosure on surrounding house prices indicated a systematic negative externality. Though we used many different forms of the specifications on foreclosures, the most robust included combining the period from the notice of default through the foreclosure sale with the subsequent period from that sale to the REO disposition. We used this combined period as "distressed." House prices were influenced by exposure to properties in distress within 500 feet. Recall, we originally defined three rings: 0 to 300 feet, 300 to 500 feet, and 500 to 1,000 feet. These narrow rings were not as stable as using two rings: from 0 to 500 feet and 500 to 1,000 feet.

With regard to the temporal windows, the most consistent results indicated that house sales were most impacted when distressed properties nearby occurred in the period of house sale and the two preceding quarters. Given the 19 counties, the number of subsamples, and the many various combinations of foreclosure specifications in the regressions, it is not surprising that there was no one specification provided clear and consistent patterns regarding foreclosure activity.

The standard practice in this type of analysis is to report the evidence from the regressions, to discuss the patterns and whether or not they seem reasonable, and then to move on to more specific tests. In this case, the results were not reasonable and also were fragile, likely due to the effects of omitted variables that are correlated with NSP2 activities. Consider the case of Denver County and Cuyahoga County (see Exhibit 10–1). The fragility of the NSP2 variables (not shown on the exhibit) belies otherwise good statistical fits of the models: the coefficients shown on the exhibit for property characteristics are broadly

consistent with other findings in the literature, the aggregate price index tracked that of the Federal Housing Finance Agency index for the two metropolitan statistical areas, and the foreclosure results were generally significant and negative. The R-square values in the base regression for the full counties were approximately 70 to 80 percent. Adding more refined variables on foreclosure simply moved the significance around among the variables but did not change the overall explanatory power of the models.

Exhibit 10–1: Sample Regression Results From Cuyahoga and Denver Counties

Variable	County: Cuyahoga		County: Denver	
	r^2 = 0.688	Obs. = 98,719	r^2 = 0.783	Obs. = 48,514
	Coef.	*t*-Stat	Coef.	*t*-Stat
(Intercept)	9.58	69.2	10.51	214.4
log (building SF +1)	0.33	35.4	0.14	31.6
log (land SF +1)	0.09	17.9	0.13	27.6
Total rooms	– 0.02	– 10.0	0.03	24.8
Total baths	0.16	40.4	0.10	44.2
Pool	0.04	2.0	0.09	7.8
Fireplace	0.11	19.3	0.10	29.1
Condition type AVERAGE	– 1.74	– 22.1	– 0.69	– 30.8
Condition type EXCELLENT	– 1.47	– 15.7	– 0.59	– 18.9
Condition type FAIR	– 2.00	– 25.3	– 0.78	– 25.6
Condition type GOOD	– 1.61	– 20.3	– 0.72	– 32.3
Condition type POOR	– 2.25	– 27.7	– 0.82	– 27.4
Condition type UNSOUND	– 2.04	– 8.8	– 0.85	– 13.9
Condition type VERY GOOD	– 1.47	– 18.2	– 0.70	– 28.5
Absent owner	– 0.46	– 86.5	– 0.12	– 32.0
Distress within 1,000 feet	0.00	– 18.8	0.00	– 26.7

Coef. = coefficient. Obs. = observations. SF = single-family.

Given the great heterogeneity among counties, it was obvious that pooling across counties was problematic, but it also became apparent that pooling observations within counties was often inappropriate. By sampling within counties from those tracts that had neither been targeted for NSP2 activity nor been treated with NSP2 activity, the tracts' implicit prices on property characteristics changed significantly from the pooled results. The regressions based on the remaining sample of sales in tracts that had been either targeted or treated (about one-third of the sales observations) resulted in R-squares of approximately 50 percent; the implicit prices on building size, on lot size, on baths all changed markedly. For Denver, the value of a fireplace in the not targeted/not treated tracts was 3 times higher than for the sales in tracts that had been targeted or treated. The 10-percent premium in the former sample was a sharp contrast to the 8-percent penalty for having a pool in the latter subsample.

This was our first indication that we would be unable to discern clear and robust results of NSP2 activity. In the first specifications of Equation 2, we used the most flexible form—using quarterly windows of time from three quarters before a house sale to three quarters after. We used all three spatial rings and several flexible specifications for foreclosure (with foreclosure and REO states treated independently and with some nonlinear forms). Our results first led us to return to check our data before returning to find again the same pattern. The range of results at times indicated negative and significant effects within one ring while indicating a positive and significant effect in an adjacent ring. Among the study team, the priors were somewhere between negative and 0—reflecting the apparent external cost of foreclosure but also the reflecting the heterogeneity within the housing markets we were examining. A disadvantage of large-scale analysis is that averaging over the population can mask local effects. Neither economic theory nor our expectations suggested that the results of foreclosure ever would be positive and significant, however.

Our response was to check our data and to use larger rings, pooling both temporal and spatial rings. At that point, patterns more consistent with theory and our expectations became discernable. This fragility in the more narrowly defined rings suggested that the variables were identifying something more than the independent effect of foreclosure.

With a broad pattern identified in the spillover results, we then added the NSP2 variables to estimate variations on Equation 2, looking both for their direct influence on house prices but also at the estimated variables on foreclosure activity. We found statistical significance, but often of the wrong sign. Moreover, the addition of the NSP2 variables led to signs on foreclosure flipping. Where we had found some broad pattern in the foreclosure results, we found little around which to build a consistent story about the effectiveness of NSP2 activity, about the role of clustering of NSP2 activities within a smaller geographic area, or about the success of NSP2 activity by type (acquisition and rehabilitation, demolition, land banking, finance, or redevelopment). We considered particular mechanisms that could directly or indirectly be beneficial to NSP2. For example, there are 119 NSP2 properties that were investments of $1 million or more (the average investment not including these is just over $100,000). Did large investments have different effects than typical amounts—did, perhaps, larger multifamily investments result in different spillovers than those of single-family investments? The small number of larger investments across many counties precluded a separate analysis. We attempted to use dollars and dollars-squared, however, to see if the magnitude of the investments mattered in a nonlinear fashion. Again, there was no trend reliable enough to warrant suggesting one.

The set of results for Cuyahoga County illustrate the inconsistency. We moved methodically from the full county (with tract-fixed effects and tract/quarter interactions) to tracts that were targeted by the grantees to the tracts that received NSP2 activity. We also looked at tracts that received more concentrated activity. Within each of these subsamples, we explored a wide variety of parameterization for both foreclosure and NSP2. In the case of Cuyahoga County, our first attempt to capture the independent effect of NSP2 was by using the total amount of dollars invested in any NSP2 activity. The result was positive and significant, but the foreclosure variables were uneven. We used six variables for foreclosure: indicators if one, two or three, or four or more foreclosures occurred within 0 to 500 feet and between 500 to 1,000 feet from an arm's-length sale. In this regression, the variable on two or three foreclosures within 500 feet was *also* positive and significant, and none of the other coefficients on foreclosure were significantly negative. By moving the same regression across different subsamples, the variables on foreclosure moved but were either positive or insignificant, while the NSP2 variable was generally insignificant.

This fragility was present throughout the many regressions across the counties in the study. In some cases, the NSP2 activity was associated with positive results but not consistently enough to draw clear conclusions about effectiveness. The significantly lower fit of the model in the tracts that were targeted or treated further suggests that the standard set of regressors did not work in neighborhoods where NSP2 activity occurred. In other words, in neighborhoods where NSP2 activity was targeted, there was more unexplained variation in house prices than variation explained by the model. Moreover, it appeared that NSP2 variables were picking up some of the unexplained variation, so that the NSP variables were not just associated solely with the possibly mitigating effect of NSP2 activities. In sum, our intended approach, which has been a workhorse for housing economists, proved ineffective at providing clear evidence on the success of NSP2 investment. There was no robust pattern among any of the key variables.

10.1.2 NSP2 Activity as Conditioning Foreclosure

Our second approach to understand the effectiveness of NSP2 intervention asked whether or not NSP2 activity might condition how house prices responded to foreclosures nearby. Though we determined that the average spillover from foreclosure was broadly significant at close distances, it may be that this average effect masked variation across neighborhoods. Specifically, we wanted to know whether or not the measured coefficient on foreclosure (and other characteristics) changed in and out of areas that had received NSP2 activity. The approach uses the following equation:

(Eq.3) $\ln p_{ijt} = \alpha + x_i\beta + T_t + FE_j + T_t{*}FE_j + \varepsilon_{it} \mid j = NSP, j \neq NSP$

In this approach, we excluded the NSP2 variables in Equation 2. The effect of NSP2 activity would appear if the coefficients on foreclosure were less negative. This would be potential evidence of NSP2 mitigation. In particular, we were interested in learning whether concentrated NSP2 activity had differential effects on foreclosure relative to scattered or no NSP2 activity.

In this approach, we selected different samples of house sales by NSP2 activity. Because NSP2 activity varied over the sample time period, we attempted two versions of sampling. The first was to partition the sales transactions by levels of NSP2 activity at the time of sale. In the second version, we split the sample by ever receiving NSP2 activity. These results suggested that, again, pooling the samples was inappropriate. Not only did foreclosure variables change in the partitioned samples, but so too did the implicit prices on house characteristics. Importantly, the results on foreclosure activity did change, but never consistently and often in ways that were at odds with theory.

10.1.3 NSP2/Foreclosure and Differences-in-Differences

Our final attempt to measure NSP2 impacts was a differences-in-differences approach. This approach seemed appropriate, not only because of the evidence of distinct housing submarkets within a county but also because of evidence from elsewhere in this evaluation of NSP2 that much NSP2 activity was targeted at neighborhoods that experienced the largest impact of the housing bust. As such, NSP2 activity would be correlated with lower house prices, other things held constant. Our locational fixed effect was not defined by a cohesive neighborhood within a single or distinct housing submarket. Rather, we used tracts because block groups were too thinly populated to be consistently useful. The U.S. Census Bureau attempts to create cohesive tracts, but there certainly is heterogeneity within tracts. We have only two spatial variables in the models, and these variables are the only means of capturing omitted spatial variables. For example, assume house prices are significantly impacted by access to passenger rail stations. Access to rail stations is not available in our data and not included in the regression. If foreclosure is correlated with station locations, then the effect of stations will be embedded in the coefficients on exposure to foreclosure. In a cross-sectional analysis, it is not possible to disentangle these effects.

The differences-in-differences approach acknowledges this potential omission and seeks to identify an independent variable's contribution to an outcome by looking at two places at two different points in time. In this way, the omitted variables would be removed if they remain unchanged over time. So long as the relative difference between the treatment and the control areas remains constant, the relative change in the treated area against the relative change in the control tracts would capture the effect of treatment. To execute the difference-in-differences approach, we split the sample into two periods—the first from 2007 to 2009 and the second from 2010 to 2013. The first roughly corresponds with pre-NSP2 activity, while the second is roughly consistent with the beginning of NSP2 funding awards. We then looked at sales that

had roughly equivalent exposure to foreclosure in the first half of the sample but would then have different NSP2 activity exposure in the second.

Our results met the same fate as the other two approaches. We could not construct a simple narrative around NSP2 intervention and the outcomes. Coefficients were again too inconsistent to be interpreted directly as the marginal benefit of NSP2 activity. Although useful, the differences-in-differences approach is not without its own assumptions. Key among them is that of the "parallel shift." In order for differences-in-differences to control for the underlying population parameter, changes in the treated and control areas have to be the same. In the case of the housing downturn and recovery, we find different changes in prices by submarkets. Indeed some of the same neighborhoods that were targets for NSP2 intervention had worse price declines and slower and less robust recoveries than the rest of the markets. This violates the "parallel shift" assumption and undermines the appropriateness of the differences-in-differences approach in our context.

10.2 Understanding the Findings

The three statistical approaches used in the analysis of the effects of foreclosures and of NSP2 activity on individual house prices were designed to produce clean estimates of the benefits of NSP2 activities. The instability of the parameters suggests that omitted variables are correlated with the way we parameterized NSP2 activities and that the omitted variables had an important impact on house prices. Given the parsimonious nature of hedonic regressions, omitted variables are always an issue. An example of an obvious omission in essentially all house price analyses is the interior quality of the house. There is little that can be done to correct for it because there are no widely available data sources on interior quality. The question becomes how much correlation exists between interior quality and the variables that are available and how big the independent effect is that contributes to other, estimated coefficients. In theory, every element in an appraisal report should be found in hedonic analyses. These data do not exist.

In the case of controlling for structure quality for the purpose of constructing a house price index, it may be less problematic to exclude interior quality if some other included variable is correlated with it. The goal there is to measure aggregate prices—using other coefficients to soak up structural and locational variation, not interpret the other coefficients directly. The problem becomes relevant, however, if the goal is to interpret specific coefficients of independent variable when the effects of those variables are comingled because of correlation among included and excluded variables. This is precisely the case of the NSP2 analysis. We structured three different statistical approaches specifically to identify the individual and independent contribution of NSP2 activity on surrounding house prices.

This section of the chapter attempts to address two questions. First, what omitted variables are correlated with NSP2 activity? Second, could any of the omitted variables be statistically significant in their own right? The first question is necessary to ask because the parameter instability we found in the standard hedonic approaches suggests something at work beyond simple noise. The estimated coefficients were statistically significant but not consistently positive or negative, which conflicts with accepted theory that strongly suggests that the effect of NSP2 activity on surrounding house prices should not be negative. Our findings contradict this theory and suggest omitted variables that are comingled with the effects of NSP2 activity. The second question is relevant because, while omitted variables are common, their effect may be small relative to the effect of the independent variable of interest for answering the research question, thus still allowing the effect of that variable to be observed. In our case, we found large movements in the estimated parameters on NSP2 activity from ostensibly benign changes in parameterization and subsamples, suggesting that whatever was omitted was important to house prices.

An obvious choice of the omitted variable is neighborhood price levels. We included tract-level dummies and quarterly tract-time interactions in the regressions. Tracts are designed by the U.S. Census Bureau to be contiguous small areal units for the purpose of providing stable data points over time. They generally contain between 1,200 and 8,000 people; 4,000 is the target population. Tracts are often considered proxies for neighborhoods as housing submarkets, but the homogeneity of the housing stock is not listed among the criteria for tract boundary design. Such homogeneity often does not exist, however. Census block groups are units within tracts, but these, too, are organized around geography rather the homogeneity of the housing stock and housing characteristics.

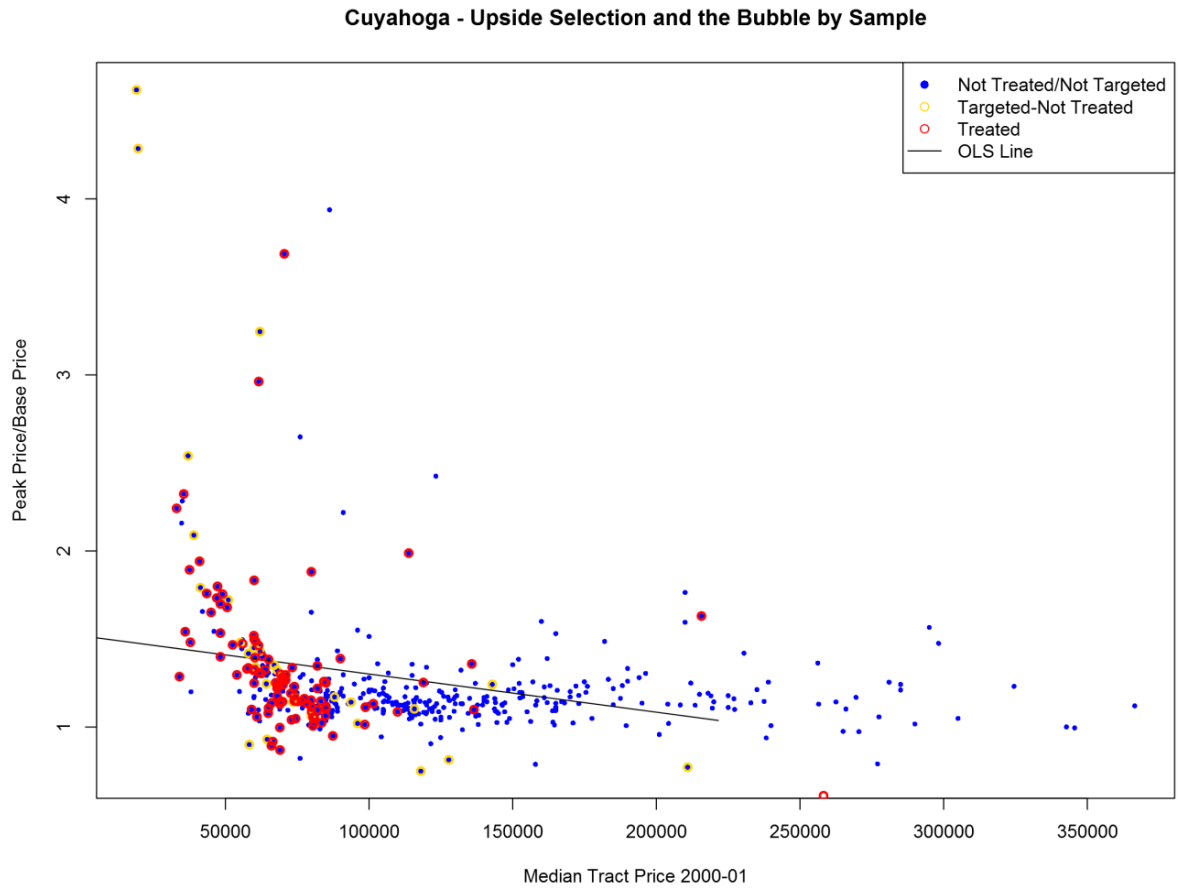
We started our analysis with block groups but retreated to tracts after discovering how thin many of the cells were at the block level. Block groups are small by design, and, in addition, the period from 2007 to 2013 had an unusually low level of arm's-length transactions. The majority of estimated coefficients on block group-time interactions were insignificant.

If house prices were homogeneous within tracts or at least varied and drawn at random from within tracts, then our controls for neighborhood should be appropriate, even if at the tract rather than the block group level.

We do not have systematic proof of how the controls in the models failed to capture neighborhoods and their idiosyncratic price movements. Moreover, we would also have to establish proof that NSP2 activity was correlated with house price movement in neighborhoods but not in tracts. We pursued the following exercise. First, we examined the nature of selection of NSP2 tracts and then extended it to a lower level of geography. Do tracts that end up with NSP2 activities behave differently, both before NSP2 was initiated and after commencement? If so, is there reason to believe that that dynamic could be at work within neighborhoods below the tract level that were correlated with the purposeful clustering of NSP2 activities?

10–2 shows the relative median house price appreciation by tracts between 2000 and 2001 and 2006 and 2007 in Cuyahoga County. The s help explore the question: Was there extraordinary appreciation during the housing boom in tracts that ultimately ended up being treated with NSP2 funds? The red dots show the NSP2 tracts, and it is clear that tracts in Cuyahoga County disproportionately benefited from the rise in prices. The vertical axis measures median tract house price appreciation and indicates that almost all tracts in Cuyahoga County saw some appreciation during the bubble. Note, however, that the line tilts up for tracts that had lower price levels in 2000 and 2001. All tracts saw prices appreciate, but the lower end tracts saw a much higher relative gain.

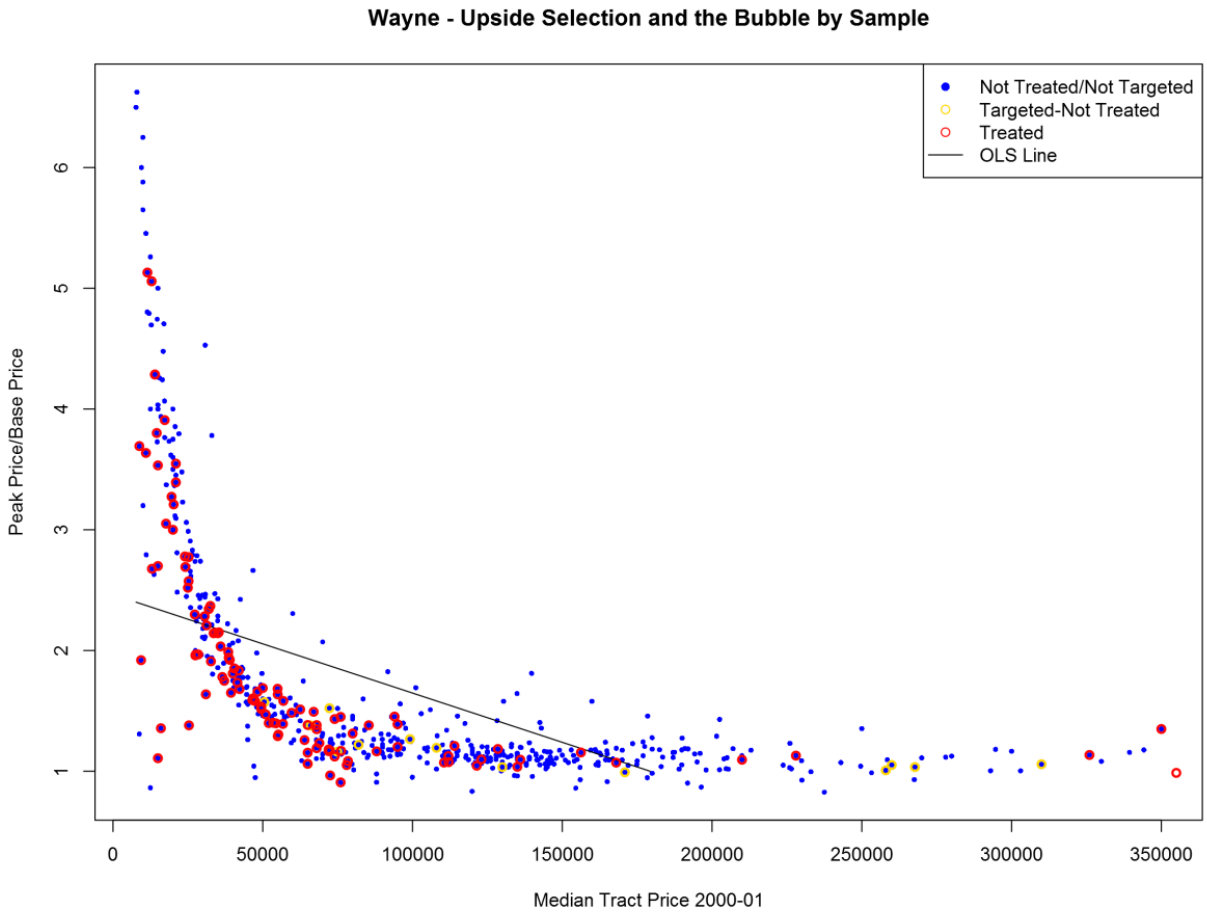
Exhibit 10–2: Relative Median House Price Appreciation by Tracts in Cuyahoga County, 2000–01 and 2006–07



OLS = ordinary least squares.

The same is true of Wayne County but to a much greater extent (Exhibit 10–3). Here, modest house price appreciation occurred in tracts above $75,000, but below this level, there was a much greater appreciation. We know that job growth in both Cuyahoga and Wayne counties was not robust and that union power waned during this period. What likely caused the price rise was the access to mortgage credit. Lower income households were able—some for the first time—to borrow funds and buy homes, pushing up demand for ownership.

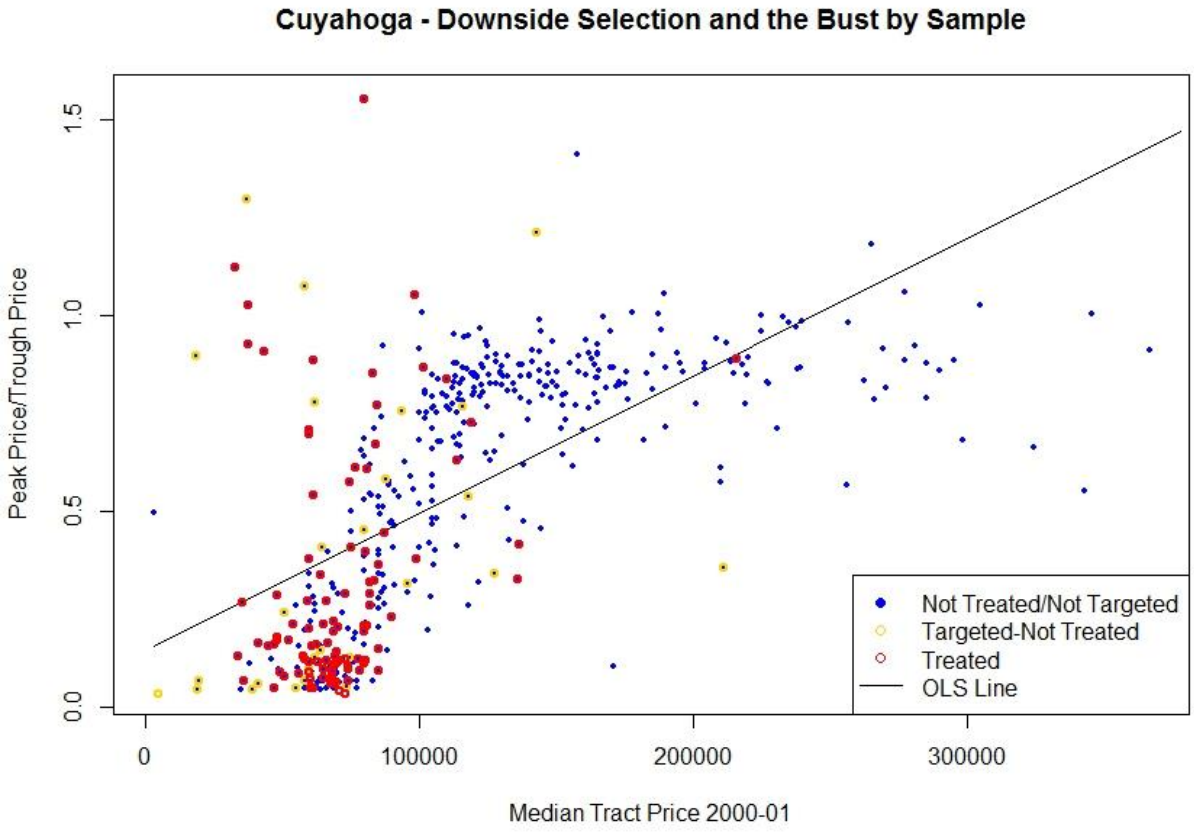
Exhibit 10–3: Relative Median House Price Appreciation by Tracts in Wayne County, 2000–01 and 2006–07



OLS = ordinary least squares.

Exhibits 10–4 and 10–5 show a similar dynamic as prices came down. The exhibits help explore the question: Did NSP2 tracts fall further during the bust? Again, the answer is clear. The observation from the previous two slides is that NSP2 tracts were systematically above their relative prices within the broader house price hierarchy in Cuyahoga and Wayne Counties. This was a function of subprime lending—large and new forms of housing capital flowed into neighborhoods that had previously not been able to get regular debt. When mortgage lending cooled nationally, it froze in these neighborhoods. Access to housing debt was essentially shut off. House prices in these neighborhoods fell all the way back to where they were relative to pricing in other tracts in 2000 and 2001.

Exhibit 10–4: Relative Median House Price Depreciation by Tracts in Cuyahoga County, 2000–01 and 2006–07



OLS = ordinary least squares.

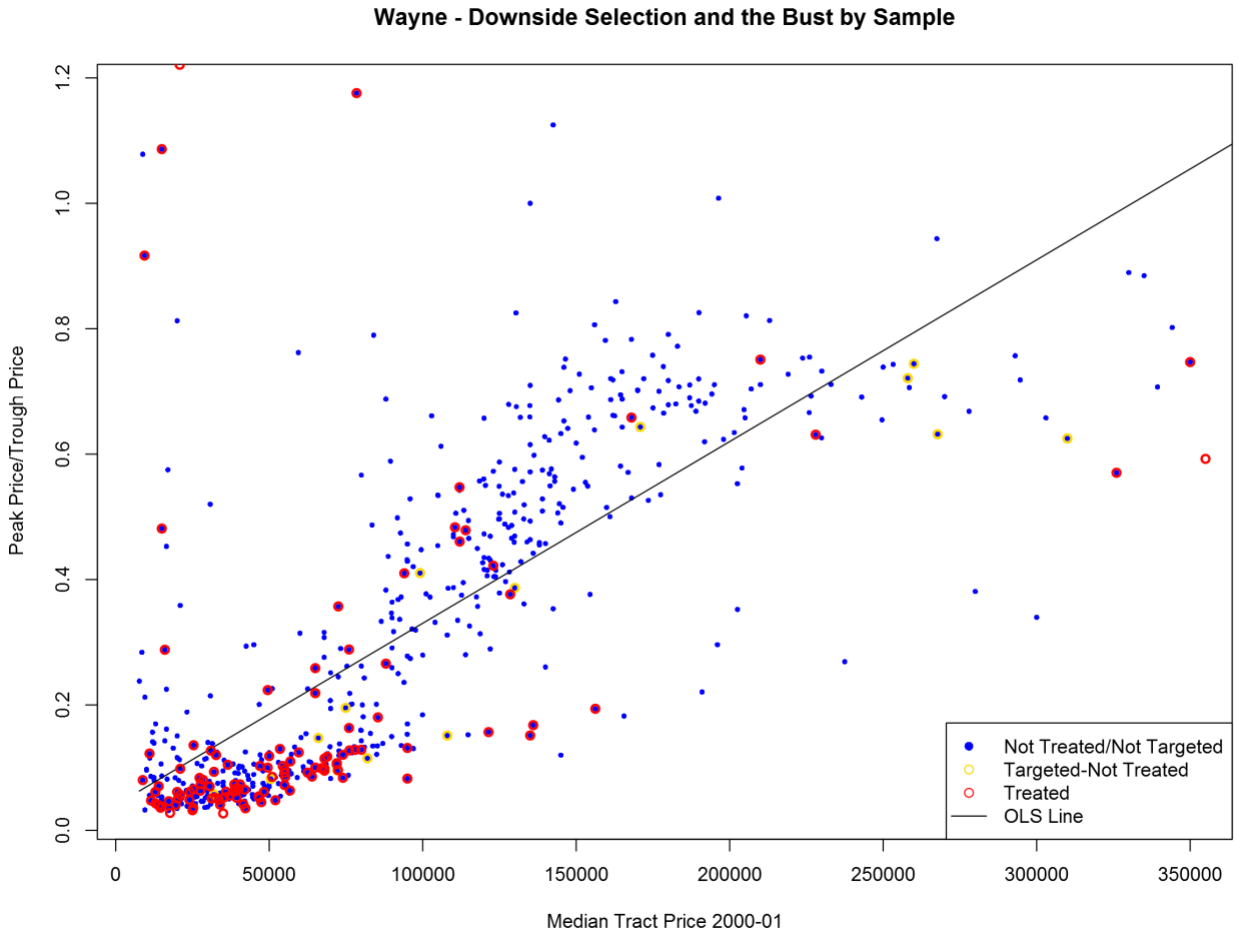
In both counties, the red dots are largely pooled with the highest house price depreciations at the tract level. There are scattered exceptions, but the pattern is clear: NSP2 activities generally were targeted to places that had the furthest to fall with regard to tract-level prices.

This selection dynamic is important but still leaves some open questions with regard to why the regression models were inconsistent. The basic structure of all the microbased models was inclusion of controls for tracts and tract*quarter interactions. If tract prices were homogeneous within tracts, these figures should not help explain the inconsistency.

There is ample evidence that neighborhoods and tracts are not the same unit and that there are always variations in house prices within tracts. The question is whether or not they are systematically different over the study period from 2007 to 2013 and systematically different in places that received NSP2 activities. Moreover, the question about using block groups becomes more relevant in this context. The study team chose against block groups because the supporting data were thin at this granular level, but it is possible that block groups would have been a better proxy for neighborhoods and thus a better choice. We cannot prove that a different choice of the unit of geography would have enabled us to find consistent

coefficients showing the effect of NSP2 activities, but the three figures shown on Exhibit 10–6 suggest that a different unit of geography is needed.

Exhibit 10–5: Relative Median House Price Depreciation by Tracts in Wayne County, 2000–01 and 2006–07

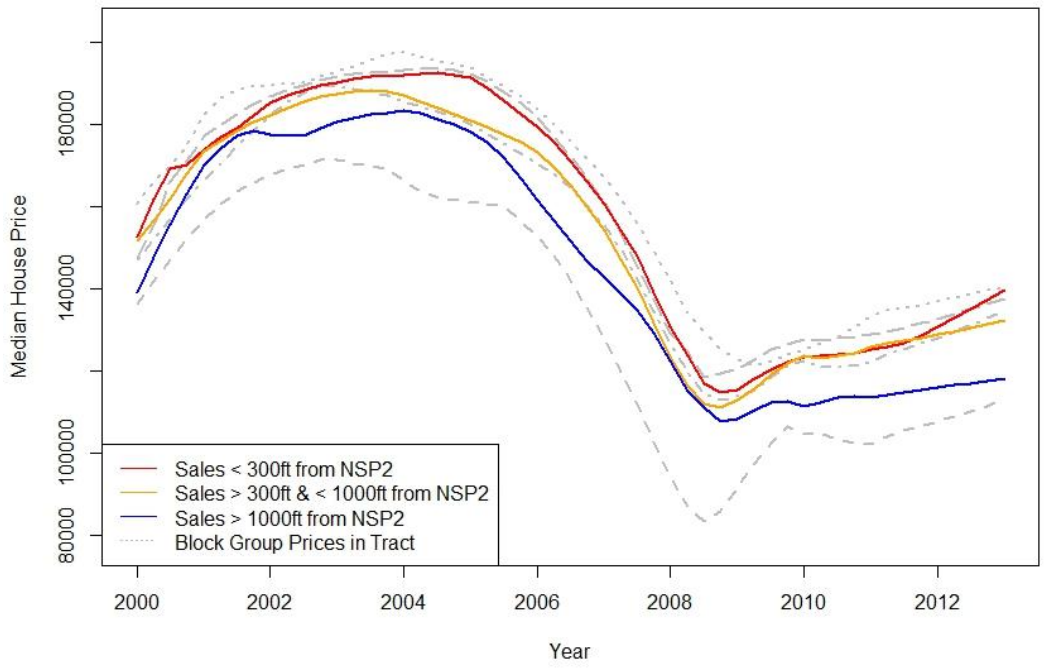


OLS = ordinary least squares.

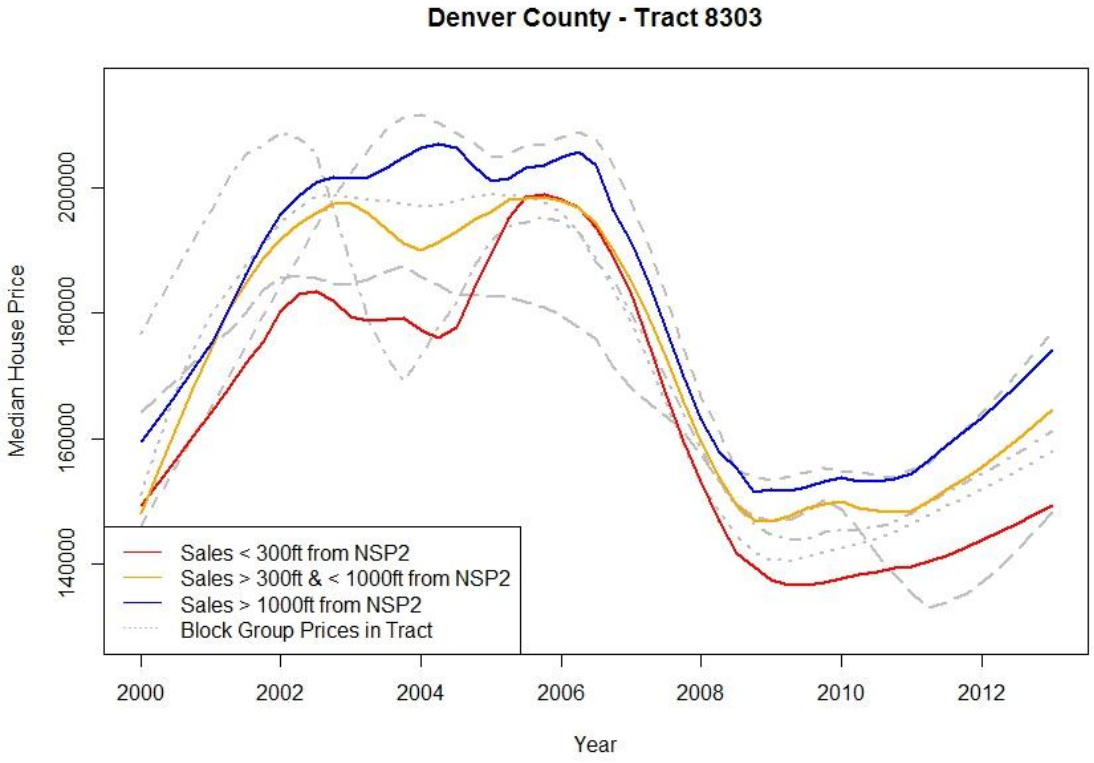
Exhibit 10–6 (Panels A, B, and C) show median house prices for different samples within three tracts in Denver County. These three tracts are all in the northeast of Denver County, where much of the NSP2 activity took place. Focusing first on the gray dashed and dotted lines, these are the formal census block group price series. Clearly there are broad correlations among them, but they are neither identical in levels nor identical in movements over time. The second set of lines—the solid lines—are the same sales observations but now pooled by proximity to NSP2 activity. In particular, the proximities follow those in the rings used in the regressions described earlier in this chapter. The red line is constructed of house sales from 2000 to 2013 that were within 300 feet of an NSP2 activity whenever it occurred. The orange line is analogous for sales that are between 300 and 1,000 feet from NSP2 activity, while the blue line is for all other sales. In Tract 8311 (Panel A), it is readily apparent that there has been asymmetric migration in house prices across this sampling. Moreover, this taxonomy of sales by proximity to NSP2 activity does not map directly on to block group price movements.

Exhibit 10–6: Median House Price by Block Group and Proximity to NSP2 Activities

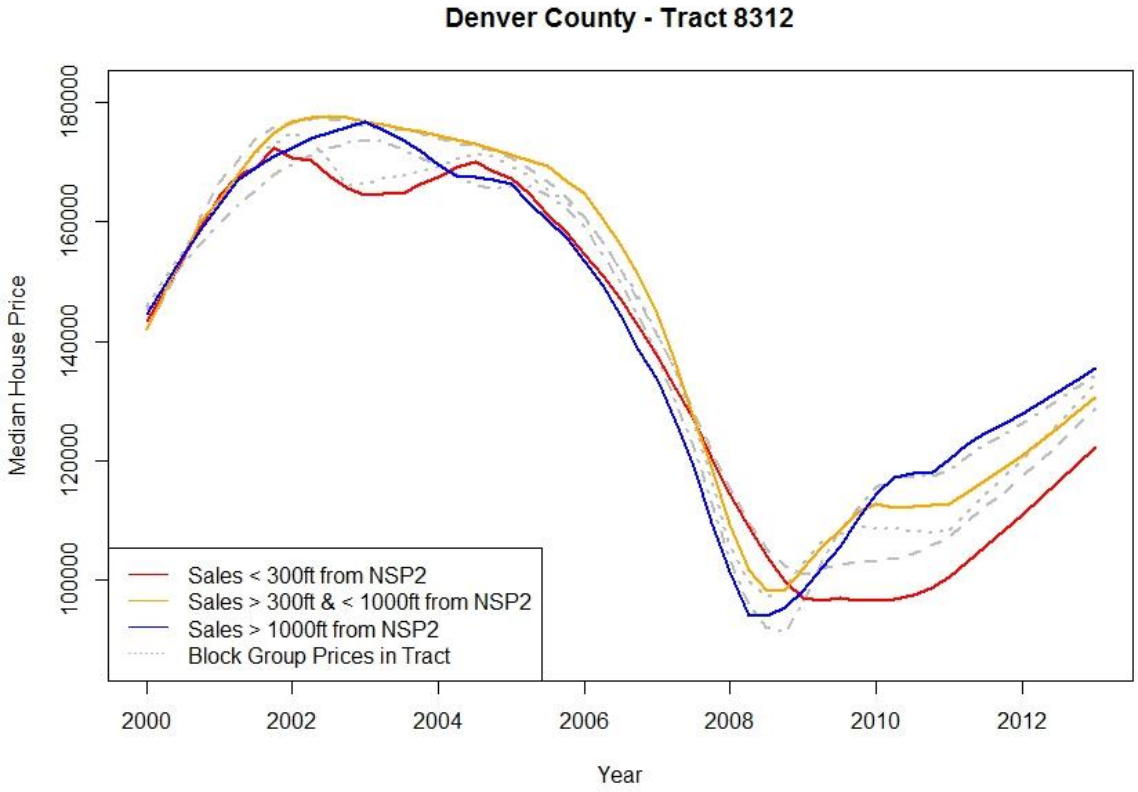
Panel A



Panel B



Panel C



ft = feet. NSP2 = Neighborhood Stabilization Program 2.

The figures for Tract 8303 (Panel B) and Tract 8312 (Panel C) are analogous in structure but report important differences. In Tract 8311, the median price for those closest to NSP2 activity were highest throughout and increased relative to those further away by the end of the sample. This might suggest a benefit of NSP2 activity. In Tract 8303, however, the reverse was true: house prices were lowest throughout and fell further behind by the end of the sample. Finally, Tract 8312 suggests that the ordering could switch. In 2007, all three solid lines were essentially the same. By 2008, those furthest from NSP2 activity had fallen the most. By 2010, however, these areas had the highest prices and remained that way.

The analysis is suggestive but offers the best understanding of what may have been an important omitted variable. In all three of the statistical approaches, there is an explicit attempt to isolate NSP2 activity from neighborhood price movements. These three figures show that there is local systematic variation in levels and changes in house prices that are correlated with NSP2 activity and not controlled for in our geographic and time-fixed effects. Furthermore, the three figures show that the underlying pattern among the samples defined by proximity is not consistent.

The remaining question is the size of local house price movements relative to the size of the NSP2 activity. If NSP2 activity was large, then the correlation among omitted variables may not mask the pattern among the true NSP2 effects. How big is the value of NSP2 relative to the kinds of price movements that were occurring in these markets?

As big as NSP2 was from a financial perspective—$1.9 billion—it is small relative to the size of the housing crisis. Nationally, about 12 million households were underwater and technically in default from 2007 to 2012. The size of the equity lost during that time period dwarfs NSP2. Some 6,300 properties were touched by NSP2 activities in the 19 counties included in this study. Of these 6,300 properties, about half were treated through demolition, with 2,400 demolitions occurring in Wayne and Cuyahoga counties alone, leaving approximately 3,500 properties to be spread around 17 other counties that are comprised of millions of housing units.

Although a well-designed natural experiment can make up for small samples, the converse is not necessarily true. In this case, we have large data sets, but the program was designed to invest with some urgency in local housing markets—not for ex post assessment. A potential significant empirical challenge is the small size of the program relative of size of the house price movements after 2007. In fact, despite the sizable investment, NSP2 was not nearly large enough to register against the backdrop of the changes in housing markets during this window of time.

Exhibit 10–7 compares the relative scale of the NSP2 investment and the timing of the flows relative to changes in aggregate house values in Cuyahoga County (Panel A) and Denver County (Panel B). Clearly, the motivation for NSP2 was to arrest that decline in aggregate housing wealth. An interesting question is how large the size of that wealth was relative to the size of the NSP investments.

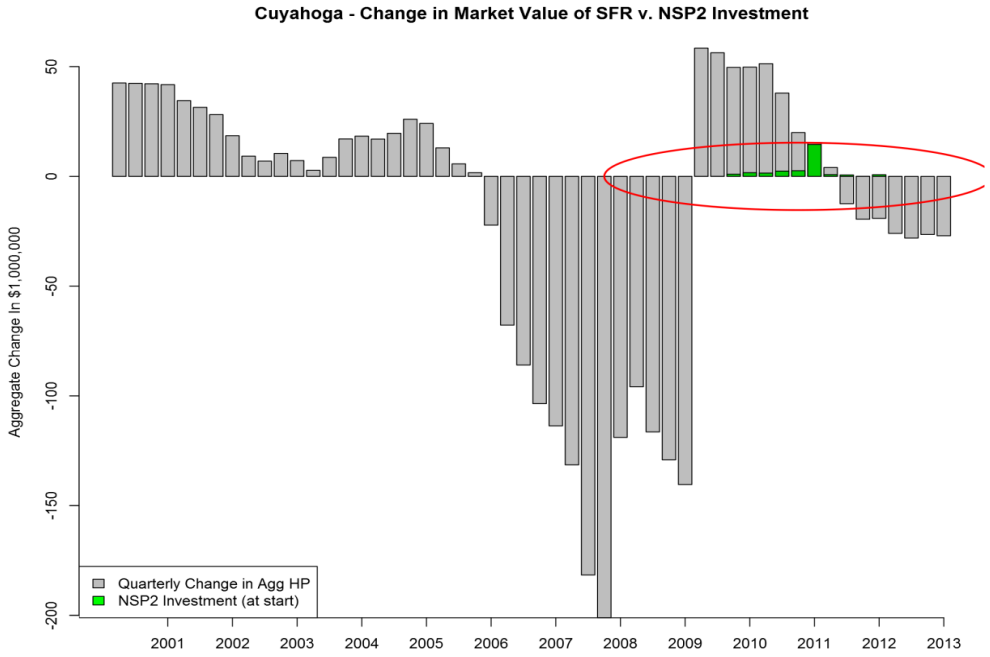
The exhibit is based on rough calculations for the aggregate value of homes only in tracts that received NSP2 activity. First, an index of median house prices is calculated using all arm's-length transactions. Knowing that not all homes trade in each quarter, the index is smoothed using a kernel smoother to measure a moving average of changes in values. The gray boxes in the bar charts reflect the sharp differences between the bubble and the bust and between the types of experiences Cuyahoga and Denver Counties had with fall and recovery. The figures illustrate the size of the NSP2 investments relative to the aggregate movements. Note that these relative measures are for NSP2 against only tracts that received NSP2 activity and not the value of the housing stocks in the respective counties. In both, NSP2 investments are very small relative to the aggregate tract values in treated tracts. Moreover, the timing suggests that NSP2 investments were made at or slightly after the market turned back up again.

10.3 Conclusion

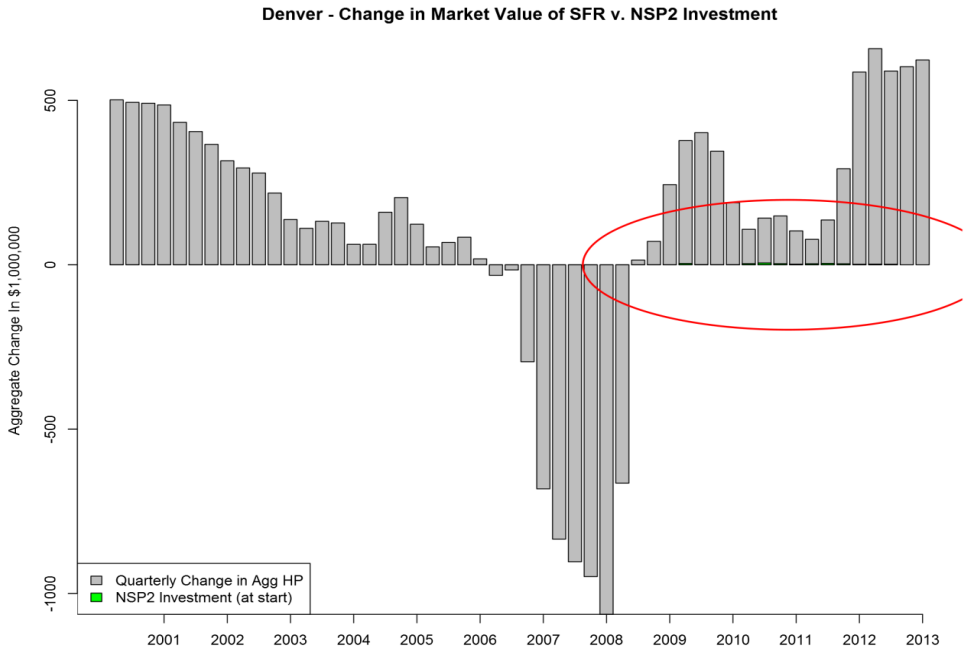
A major thrust of the study team's approach to assessing NSP2 was to establish a formal statistical analysis and provide a set of generalizable results for the effect of foreclosures and of NSP2 activities on individual house prices by using a very large data set across 19 counties. This stands in some contrast to the case study approach used by others. Case studies can prove highly useful to make local dynamics clear and highlight specific mechanics at work in the foreclosure process. Case studies implicitly make generalization difficult, however. The goal of this chapter was to use large-scale analysis with the hope of appealing to large samples to rigorously measure the impact of NSP2 on house values in a more generalizable fashion.

Exhibit 10–7: Scale of NSP2 Investments Relative to Changes in Aggregate House Values

Panel A



Panel B



Agg HP = aggregate house price. NSP2 = Neighborhood Stabilization Program 2. SFR = Single Family Residence.

In the introduction to this chapter, we established four research questions. The first question, whether foreclosures impact the value of neighboring homes, is essential for establishing the motivation for intervention and for providing a benchmark against which the NSP2 activities can be measured. Though there is a growing literature on the external costs of foreclosure, it is fragmented. The literature is scattered by geography, by timing, and by data availability. Moreover, it is becoming clear that foreclosure is a complex dynamic, and the literature demonstrates that researchers are still working through understanding the underlying mechanics of a foreclosure's impacts on surrounding homes. That said, the literature at this point is finding consistent evidence of a foreclosure spillover. We find the same. Our answer to Question 1 is that foreclosure significantly led to lower house prices within 500 feet of a sale.

Question 2 is an open-ended inquiry into the benefits of NSP2. The NSP2 uses of funds permitted local grantees to land bank properties, to rehabilitate homes, and to help finance affordable home purchases, among other activities. This chapter reports on the first systematic microlevel analysis of NSP2 activities using a large data set across different areas in which NSP2 operated. Question 3 asked about the concentration of NSP2 activity, while Question 4 asked about specific mechanisms that could explain the net effect found. What we learned is that analysis of the effects of such interventions is challenging even when using large data sets when treatments are relatively small, highly nonrandom, and heterogeneous. To be clear, we find no evidence that NSP2 positively or negatively affected nearby house values systematically because of the absence of any meaningful and robust pattern among the counties and submarkets.

The lesson from this chapter is that assessment requires careful forethought—the Law of Large Numbers does not protect us from omitted variables and selection bias. In the case of NSP2, the mandate to put more investment to work quickly and effectively was inherently in tension with a program designed for ease of measurement after the fact. We found that the U.S. Department of Housing and Urban Development was right to think that foreclosure spillovers were a significant drag on house prices and, therefore, was correct to implement an intervention in an effort to overcome an apparent market failure. Taken together, however, the results simply cannot speak systematically to the effectiveness of the NSP2 interventions.

A significant objective of NSP2 was to concentrate investment in particularly challenged neighborhoods. Grantees to which NSP2 funds were allocated were given some freedom with regard to make appropriate investments so that they could make best use of the funds. What we learned from the grantees is that their plans evolved as the market did. Our first response to this was positive—that is, because grantees were not necessarily focusing their NSP2 interventions in places most likely to succeed, we did not need to worry about selection bias that could favor a positive result. A second sort of selection may have been working instead, however. Because investors returned to the market ahead of the implementation of NSP2 funding, grantees were often left looking at properties that had the worst prospects. Indeed, a larger than anticipated share of NSP2 funding ended up in multifamily investments precisely because opportunities for good investments in single-family residences were hard to find. This may have resulted in NSP2 activities in neighborhoods with lower prices. If neighborhoods and tracts were synonymous, then our tract-level variables should have captured local prices levels and local price movements. Tracts and neighborhoods appeared to be not synonymous, however. Although there is more to be done to understand both the broader question about the effect of foreclosure and how it could have been mitigated, the immediate lesson from this research is that, if an evaluation of the effect of an intervention is a priority, much thought needs to take place before funds are allocated. In the case of NSP2, the clear mandate was to get funds in the hands of grantees who knew the impacted neighborhoods and who had a ready plan to put the funds to use. In the case of NSP2, this goal turned out to be at odds with evaluation, leaving no clear indication of program success or failure.

11. Conclusion

This study analyzed Neighborhood Stabilization Program 2 investments in 19 counties by 28 lead NSP2 grantees to understand what investments were made, the challenges and successes of implementing NSP2, and whether the investments had a detectable impacts in the neighborhoods where these investments occurred. The key research questions were:

1. What housing investments were made by NSP2 grantees and what factors contributed to the type and number of investments?

2. How was NSP2 implemented by grantees and how did this vary across markets?

3. Do neighborhoods with high concentrations of foreclosures show signs of visual blight?

4. How did NSP2 and other financially distressed neighborhoods and properties change over time in terms of vacancy rates, housing tenure, volume of sales, and level of financial distress?

5. Does increased crime accompany periods of financial distress, and what effects do NSP2 investments have on reducing the incidence of crime?

6. What is the impact of NSP2 on prices of nearby houses?

The findings for each research question are summarized below, followed by a discussion of NSP2 viewed through three broader public policy perspectives.

11.1 Summary of Findings

1. What Housing Investments Were Made by NSP2 Grantees and What Factors Contributed to the Type and Number of Investments?

Through spring 2013, NSP2 grantees working in the 19 sample counties had treated a total of 6,354 properties and expended $1.88 billion in NSP2 and leveraged funds. About one-half of these properties are located in Lagging/Declining markets (3,156), almost one-third are in Boom-Bust Sand States markets (1,948), about 10 percent are located in Boom-Stable markets, and the remainder are in Boom-Bust East Coast (374) and Slow Growth markets (235). The majority of the properties are one-unit properties, but many are multifamily properties, particularly in BBEC markets.

Acquisition and rehabilitation activities are the core of NSP2. Of all NSP2 funding, 50 percent (representing 2,386 properties) supported this activity. Grantees located in BBSS and SG markets relied on acquisition and rehabilitation significantly more than grantees in other market types (50 percent of all activities in BBSS markets and 85 percent of all activities in SG markets). The specific activities grantees undertook in the acquisition and rehabilitation category were diverse and included the rehabilitation of both single-family and multifamily properties, homeownership, and rentals. Single-family properties were typically targeted for homeownership while multifamily properties were more likely to be rental properties. Rentals, in turn, were typically targeted to lower income beneficiaries.

Across all of the counties in the sample, more NSP2 properties were treated with demolition than with any other activity, but wide use of this activity was isolated to a few counties. In total, 3,004 properties were demolished (47 percent of all NSP2 properties), but demolition accounted for only 2 percent of all spending.

Financing as a standalone activity (not used in combination with acquisition and rehabilitation or redevelopment) was a key activity in both BBEC and BBSS markets but scarcely pursued in the other markets. For a few grantees, such as those in Ingham and Wayne counties (Michigan), where the grantee's partnerships included longstanding land banks, land banking was a major activity, but the majority of grantees did not use land banking as part of their NSP2 strategy.

Almost 500 properties were redeveloped by 20 grantees in 16 counties. Redevelopment was most heavily used as a strategy in BS markets, where 20 percent of NSP2 properties were redeveloped. A few grantees in the BBEC and BBSS markets also relied heavily on redevelopment, including grantees in Kings, Miami-Dade, and Sarasota counties.

2. How Was NSP2 Implemented by Grantees and How Did This Vary Across Markets?

NSP2 was implemented in many different market environments using many different approaches. Although all grantees had access to the same five activities, the activities were used in different combinations with diverse organizational and partnership structures and with varying degrees of success owing to local market conditions and other factors. Few features of the NSP2 implementations were universal across grantees.

Key features of grantees' program designs varied by the neighborhoods they targeted, their specific approaches to conducting NSP2 activities and the mix of these activities, and the tenure of the housing they intended to produce (homeownership versus rental). In targeting neighborhoods, the prevailing consideration for grantees was to coordinate their NSP2 investments with other community development activities. Grantees also considered the level of distress in the targeted areas. Grantees were as likely to target areas with longstanding revitalization needs as to target neighborhoods with underlying strengths.

In general, grantees approached particular NSP2 activities in similar ways, as described below:

- Financing assistance was most commonly used to provide second mortgages and downpayments.
- Acquisition and rehabilitation was often used as an opportunity to renovate troubled properties to very high standards without the projects having to meet a rigid cost-benefit analysis. Without the opportunity provided by NSP2, some grantees felt that the properties they rehabilitated would have been ignored by the private market and remained sources of blight.
- The few grantees that used land banking did so for a variety of property types, including vacant lots, properties acquired but deemed unsuitable for rehabilitation, unfinished condominium projects, and commercial developments.
- Grantees opted for demolition either to remove blight in response to an overabundance of abandoned properties or when a property was deemed too expensive to rehabilitate.

- Grantees undertook redevelopment to construct large numbers of affordable multifamily units or to create high-quality single-family housing units for purchase by low-income buyers.

Grantees' activities were not static and often changed in response to changing market conditions or unanticipated obstacles in implementing other activities. The three most common changes that grantees adopted were eliminating the financing activity, shifting their acquisition focus from single-family properties to multifamily properties, and shifting their acquisition focus away from foreclosed properties. These changes were precipitated by two significant challenges in implementing NSP2: difficulty with foreclosure acquisition and the NSP2 timeline. Nearly all grantees said they faced challenges acquiring properties in the originally targeted tracts because competition with investors resulted in fewer than expected available foreclosures. The majority of grantees reported that the grant timeline was a challenge, especially the expenditure deadlines.

Challenges to acquiring foreclosures had several consequences. First, almost all grantees reported higher than expected rehabilitation costs. A key reason for this was that competition from investors for foreclosures forced them to acquire properties with substantial rehabilitation needs. Second, although most grantees across the five market types intended to concentrate activities within their target neighborhoods, they were not able to concentrate activities at the level they had planned.

Implementation of NSP2 activities by grantees was facilitated by the dedication, flexibility, and skill of their own staffs, their partnerships, the technical assistance provided by the U.S. Department of Housing and Urban Development, and the flexibility of NSP2. Grantees also overwhelmingly reported that working with partner organizations helped them implement NSP2. Partnerships expanded grantees' staff capacity and expertise as well as their financial resources, which enabled grantees to take on larger scale projects and increased grantees' likelihood of achieving intended outcomes.

3. Do Neighborhoods With High Concentrations of Foreclosures Show Signs of Visual Blight?

Although the literature has demonstrated that foreclosures have a negative spillover effect on nearby housing prices, the mechanisms that create the spillover effect are not well understood. Studies frequently hypothesize that the effect results from reduced maintenance of foreclosures, which makes them identifiable, signaling neighborhood instability to potential homebuyers. Studies have not been able to measure the extent to which foreclosed properties show visual blight or can otherwise be identified from the street, however. A related hypothesis is that foreclosures may produce a "contagion effect," whereby a foreclosure has spillover effects on neighboring properties, resulting in reduced maintenance and increased foreclosure risk for those homes as well.

This study measures and describes the extent of visual blight on foreclosed properties and on neighboring properties. A Visual Tracking Survey (or windshield survey) of foreclosed and nearby properties was conducted three times over a 1-year period. The observers completed an instrument that documented signs of damage, disrepair, and other indicators of disinvestment in the property. Because of the intensive resources needed for the VTS, its use was limited to two counties: Cuyahoga County, Ohio, and Palm Beach County, Florida. Within each of these counties over a 1-year period, surveys were conducted of approximately 50 blockfaces (covering 500 properties) in census tracts targeted by the NSP2 grantee and with high levels of concentrated foreclosures. Observers compared the exterior conditions of financially

distressed and nondistressed properties to determine whether the distressed properties were more likely to show signs of visual blight.

The observations revealed that properties in financial distress tend to have more signs of damage, disrepair, and blight than properties not in financial distress, though the observers could not determine whether the findings of visual blight reflect differences in preforeclosure maintenance or changes that occurred during the foreclosure process. A similar limitation applies to the analysis of visual distress among neighboring properties. The extent of visual blight among nondistressed properties is similar on blockfaces with high and low levels of foreclosure in Cuyahoga County. In Palm Beach County, non-financially distressed properties on blockfaces with a high level of financial distress had a few more signs of visual distress than properties on blockfaces with lower levels of financial distress.

A final finding is that the two counties differed in both the level and the trajectory of visual blight during the observation period. Properties in Cuyahoga County showed more signs of visual distress, with no clear change in the overall level between March 2012 and March 2013. Properties in Palm Beach County showed slightly fewer signs of visual distress, as well as reductions in the overall level of blight over the course of the visual observations. This pattern may indicate that Cuyahoga County had not reached the end of the foreclosure crisis by March 2013, whereas Palm Beach County had started on the path to recovery.

4. How Did NSP2 and Other Financially Distressed Neighborhoods and Properties Change Over Time in Terms of Vacancy Rates, Housing Tenure, Volume of Sales, and Level of Financial Distress?

The study analyzes trends in housing market indicators for census tracts with and without NSP2 investment and vacancy and tenure outcomes for NSP2 properties and other distressed properties. Neighborhood stability outcomes are tracked on a variety of measures over time from the beginning of the housing boom in 2000 through early 2013. The measures include housing prices, sales volume, financially distressed properties, vacancy rates, and investor purchases. This tract-level analysis uses a difference-in-differences approach, comparing housing outcomes in census tracts with NSP2 investments to comparison census tracts selected through propensity score matching. Each NSP2 tract was matched to five similar but untreated tracts in the same county. To address whether housing market outcomes varied by the size or concentration of NSP2 activity, outcomes in tracts with especially large NSP2 investment are also compared with outcomes in tracts with less NSP2 investment. The analysis of concentrated NSP2 activity focuses on the 7 largest of the 19 counties due to sample size constraints.

The average NSP2 tract received relatively sparse treatment under the program: on average, NSP2 tracts had seven treated properties and expenditures of $1.2 million. Activities were generally not spatially concentrated, with a tract-level average of 0.57 mile between each NSP2 property and the five nearest NSP2 properties. A small number of tracts in each market type received higher intensity treatment, however.

The relatively low intensity of NSP2 treatment likely contributed to quite limited average impacts of NSP2 on housing market outcomes. Regression results indicate few very statistically significant postimplementation differences in housing outcomes between NSP2 tracts and control tracts. At best, there is weak evidence that prices increased in treated tracts in BBSS markets, notably Los Angeles and Maricopa counties. More statistically significant results are found among tracts in the largest seven

counties that received intensive NSP2 treatment. These relationships differ considerably across counties, however. The evidence suggests that intensively treated tracts in the city of Philadelphia experienced *worse* housing outcomes—lower prices and higher rates of distress, vacancy, and investor purchases—than sparsely treated NSP2 tracts in the county. In three other counties (Cook, Cuyahoga, and Wayne), results suggest higher vacancy rates among intensively treated tracts compared with sparsely treated tracts. This may simply show that grantees chose to focus concentrated NSP2 investment in tracts with the highest prevalence of vacant or abandoned properties—in other words, tracts in greatest need of help.

At the property level, the study also provides a descriptive analysis of the vacancy and tenure status of NSP2 properties at the end of the study period in early 2013, which was shortly after the February 11 program deadline for expending 100 percent of NSP2 funds. At the time of the analysis, many of the properties being rehabilitated were not finished and occupied, which could be an important factor in limiting the effect of NSP2 on tract- and property-level outcomes in the study. The cumulative effect of acquisition and rehabilitation activities in many counties was to transition investor-owned properties to homeowner-occupied units. A large majority (77 percent) of acquisition and rehabilitation properties were investor owned before the NSP2 intervention. According to the NSP2 grantee data, grantees anticipated that 60 percent of these properties would be homeowner occupied following NSP2 intervention.

5. Does Increased Crime Accompany Periods of Financial Distress, and What Effects Do Neighborhood Stabilization Program 2 Investments Have on Reducing the Incidence of Crime?

Recent research suggests that the presence of foreclosures in a neighborhood results in increased crime (Cui, 2010; Ellen, Lacoe, and Sharygin, 2013; Immergluck and Smith, 2006b). The study examines the relationship among foreclosures, NSP2 investments, and crime in the neighborhoods where NSP2 investments were made, focusing on three cities where property-level data on crime incident reports could be obtained—City of Chicago (Cook County), City of Cleveland (Cuyahoga County), and City of Denver (Denver County).

In Chicago and Denver, the results did not show a significant reduction in either property or violent crime from NSP2 investments. In Cleveland, however, the study found that demolition and land banking activities significantly reduced property crime and that rehabilitation and redevelopment activities significantly reduced violent crime. The reason for the difference in findings across the study areas cannot be conclusively determined. It may reflect the smaller sample sizes in Chicago and Denver or a difference in the neighborhoods selected for NSP2 investments. The implementation analysis found that the grantee in Cleveland considered crime rates when selecting properties for NSP2 investment, whereas crime was not mentioned as a consideration by the grantees in either Denver or Chicago.

6. What Is the Impact of NSP2 on Prices of Nearby Houses?

In addition to the neighborhood-level impacts discussed above, the study also estimates the impact of NSP2 investments on housing values at the property level. Previous literature found that foreclosures have a spillover effect on the sales prices of surrounding houses, raising the concern that foreclosures can lead to a vicious cycle of continuing foreclosures. Consistent with the literature, the property-level analysis found that foreclosures were associated with lower prices for nearby properties. To determine if NSP2 mitigated the effect of foreclosures on nearby housing prices, the study regressed housing sale

prices on the presence of nearby foreclosures and the presence of nearby NSP2 investment properties (for example, within 1,000 feet), controlling for property-level characteristics and census tract characteristics. The results did not show any systematic effect of NSP2 on nearby housing sale prices. Alternative specifications of the NSP2 variable were tried—the amount of nearby NSP2 expenditures, the number of NSP2 properties nearby, and various threshold measures of concentrated NSP2 activity. The alternative specifications did not produce different results.

The lack of consistent findings may be explained by omitted variable bias (that is, unobserved differences across blocks and neighborhoods for which data were not available). If NSP2 investments were directed to neighborhoods with unobserved characteristics that resulted in worse price outcomes, then the independent effect of NSP2 activity would be conflated with the neighborhood outcomes. As discussed earlier, some grantees chose to invest in the most distressed areas, and most grantees had to be opportunistic in some of their investments, selecting properties that private investors did not want or properties that were easily obtainable to meet the expenditure time lines. These selection factors could have led them to choose properties in areas of a census tract with a worse price trajectory than other nearby areas.

11.2 Perspectives on NSP2

From a broader public policy perspective, NSP2 can be viewed through multiple lenses. Originally conceived as a stabilization program, it was designed to arrest the immediate impacts of the foreclosure crisis in the hardest hit areas. The program was funded under the American Recovery and Reinvestment Act of 2009 (ARRA), an economic stimulus program, and thus the program can also be viewed as a form of economic stimulus for the broader economy. Lastly, the manner in which NSP2 was implemented suggests that the program also acted as part of communities' long-term neighborhood revitalization plans, consistent with the objectives of the Community Development Block Grant program. Indeed, grantees often invested in neighborhoods that had revitalization needs that predated the foreclosure crisis.

Stimulus Program. ARRA, the funding legislation for NSP2, was enacted with the goals of job preservation and creation, infrastructure investment, energy efficiency, assistance to the unemployed, and state and local fiscal stabilization. Because of these stimulus goals, NSP2 had very tight expenditure deadlines, requiring 50 percent of the award to be expended within 2 years and 100 percent within 3 years. Grantees generally met these expenditure deadlines, though at times they struggled to do so and made some investments based on the ease of obtaining the property rather than on their strategic vision for the program. NSP2 supported $1.03 billion in NSP2 activities in the 19 study counties, and grantees leveraged an additional $850 million in these counties, increasing the amount of stimulus to $1.88 billion.

Discussions with NSP2 grantees during the evaluation's site visit interviews also suggest that the program succeeded in supporting the local economy. Grantees consistently reported that NSP2 enabled local government agencies and nonprofit agencies to hire new staff or hold onto staff that otherwise might have been laid off. Several grantees also reported that NSP2 activities provided critical work for their contractors, helping to keep small businesses solvent and providing jobs to construction workers, plumbers, and electricians for whom work was scarce during the housing downturn. All of the NSP2 grantees met the expenditure deadlines, so the program delivered its economic stimulus in the intended timeframe.

Stabilization Program. An immediate objective of NSP2 was to lessen the impact of foreclosures on their surrounding neighborhoods by (1) slowing decline in home prices by putting a floor under falling home

prices and (2) lessening the spillover effects of foreclosure and vacancy for nearby property owners until the foreclosed property could be reoccupied or converted to another productive use.

The evaluation findings do not provide any evidence that NSP2 activities arrested the overall decline in home prices in NSP2 neighborhoods. The neighborhood-level analysis suggests that the home price trajectories of NSP2 tracts were similar to the trajectories of non-NSP2 tracts—and the findings for other neighborhood stability outcomes are the same. The most likely explanation for this result is that NSP2 intervention was relatively small compared with the number of foreclosures in each tract. Given the scale of NSP2, the impacts of NSP2 investments would have to be substantial to arrest the decline in home prices for the neighborhood as a whole.

The evaluation's findings for the second approach to neighborhood stabilization—lessening spillover effects—are less clear. The property-level analysis examines the spillover effect of NSP2 investments on neighboring home prices. Because the analysis was not able to isolate and measure the independent effect of NSP2 investments apart from other neighborhood characteristics, the examination of spillover effects was inconclusive. This is a limitation with the methods available for measuring the impacts of NSP activities and not a limitation of the program itself.

There are two main caveats to the evaluation's findings. First, the analyses sought to measure *systematic* impacts that appeared across NSP2 tracts and properties within each of the selected counties. It is possible that NSP2 investments in fact arrested the decline in home prices in some individual neighborhoods, whereas the average impact was found to be statistically insignificant. Future research might attempt to identify a subset of neighborhoods where NSP2 investments arrested the decline of home prices. Such an exploration would likely need to identify ideal conditions and data sources for measuring the impact of NSP2 investments apart from other unobserved neighborhood characteristics.

Second, the end of the analysis period may have been too early to capture the impact of NSP2. The most recent outcomes described in the study were measured when approximately 27 percent of the property investments were not complete and another 16 percent had been completed within the previous 3 months. The impacts of these NSP2 properties on nearby housing values are unlikely to be captured by the study if (1) there is a lag between the completion of NSP2 investments and the effects on housing values or (2) if the effects are triggered by the completion of the investment activities, rather than the "signaling" effects of starting the investment.

Neighborhood Revitalization Program. A final way to consider the role of NSP2 is as a complement to grantees' longer term neighborhood revitalization strategies. Approximately one-half of the study grantees reported purposely targeting areas with longstanding distress, and almost all grantees reported that they chose areas to coordinate with other community development activities. Viewed through this lens, it is likely too early to draw conclusions about the impact of NSP2 investments on neighborhood revitalization outcomes. Indeed, the literature on neighborhood revitalization suggests that altering the outcomes of distressed neighborhoods requires concentrated investment over a multiyear timeframe (Pooley, 2014; Galster et al., 2006, 2004). Coupling NSP with other community development programs is a promising sign that distressed neighborhoods will continue to be revitalized beyond the timeframe of NSP2.

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