Collateral Damage:

The Spillover Costs of Foreclosures

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*B*etween 2007 and 2011, 10.9 million homes went into foreclosure.[1] These foreclosures not only have harmed the families that experienced them, they also have had negative effects that extend to the neighborhood, community and wider economy. There are myriad indirect costs of foreclosures, but in this report we focus on one: the economic impact on neighboring homeowners who lose property value as a result of being in close proximity to foreclosures.

This brief is the fourth in a series, updating our last report that was issued in 2009. In this report we estimate not only the total "spillover" cost, but that portion of the cost borne by neighborhoods of color. Our key findings, based on loans that entered foreclosure between 2007 and 2011:

- $1.95 trillion in property value has been lost or will be lost by residents who live in close proximity to foreclosures.[2] These losses include both the spillover impact of homes that have completed the foreclosure process and future losses that will result from homes that have started but not yet completed the foreclosure process.

- Over one-half of the spillover loss is associated with communities of color.[3] Minority neighborhoods have lost or will lose $1 trillion in home equity as a result of spillover from homes that have started the foreclosure process, reflecting the high concentrations of foreclosures in neighborhoods of color.[4]

- On average, families affected by nearby foreclosures have already lost or will lose $21,077 in household wealth, representing 7.2 percent of their home value, by virtue of being in close proximity to foreclosures. Families impacted in minority neighborhoods have lost or will lose, on average, $37,084 or 13.1 percent of their home value.

Importantly, these losses represent only the wealth that has been lost or will be lost as a direct result of being in close proximity to homes that have begun the foreclosure process. We do not include in our estimate the total loss in home equity that has resulted from the crisis (estimated at $7 trillion[5]), the negative impact on local governments (from lost tax revenue and increased costs of managing vacant properties) or the non-financial spillover costs, such as increased crime, reduced school performance and neighborhood blight.[6]

I. BACKGROUND

The massive number of foreclosures that have occurred during the current economic crisis has undercut the economic progress and security of families across the country. When families lose their homes, the resulting damage is multi-faceted. First, there are the immediate financial consequences for those who lose their houses. These costs include physical displacement, drained savings and retirement accounts and devastated credit. Second, there are the longer-term financial consequences of foreclosure for these families. Families who lose a home cannot tap home equity to start a new business, pay for higher education or secure their retirement. Loss of a home also removes a financial cushion against unexpected financial hardships, such as job loss, divorce or medical expenses, and eliminates the main vehicle for transferring wealth inter-generationally.

In addition, foreclosures have ramifications that extend beyond the families who lose their homes. Communities with high concentrations of foreclosures lose tax revenue and incur the financial and non-financial costs of abandoned properties and neighborhood blight, while homeowners living in close proximity to foreclosures suffer loss of wealth through depreciated home values. In this report, we estimate the cost of this latter loss.

II. DATA AND METHODOLOGY

According to CRL's calculations of the Mortgage Bankers Association's National Delinquency Study (NDS), there were 10.9 million foreclosure starts[7] across the country from 2007 to 2011.[8] Although the NDS contains information at the state-level, in order to accurately calculate the spillover impact of these foreclosures it is necessary to understand their geographic distribution on a more granular level. To do so, we rely on two data sets. The first is the mortgage data collected by the federal government under the Home Mortgage Disclosure Act (HMDA), which is the largest publicly-available database of U.S. home lending activity. HMDA contains loan-level information on mortgages at origination, including the census tract in which the property is located. Although HMDA data covers information on almost all mortgage originations in any given year, it does not contain information on loan performance—that is, HMDA doesn't report whether loans are current, delinquent, in default or foreclosure. We therefore rely on a second data set compiled by a private company, Lender Processing Services (LPS). LPS is a proprietary, loan-level database that does contain performance information for foreclosure information. However, while LPS has information on a wide swathe of loans, its coverage is not as extensive as HMDA's[9] and its geographic information is not as specific as HMDA's.[10]

In combination, these two datasets give us the information we need to estimate the distribution of foreclosure starts. We first calculate the zip code-level foreclosure start rates of loans originated between 2004 and 2010 from the Lender Processing Services database.[11] We convert these to census tract-level foreclosure rates[12] and multiply these tract-level rates by the total number of 2004-2010 first-lien originations in each census tract using data from HMDA. These tract-level foreclosure estimates are then used to apportion each state's foreclosure starts based on the quarterly NDS from 2007 and 2011.[13]

Once we estimate the total number of foreclosure starts for each census tract, we calculate the loss of value to neighboring homes by using census tract-level housing densities and median prices.[14] To do so, we apply Harding, Rosenblatt, and Yao's 2008 estimate of a 0.744% house price depreciation to

every home within 1/8 mile of a foreclosed property (see Appendix for more information).[15] We then aggregate this depreciation amount at various geographic levels to arrive at our total spillover losses. We calculate the estimated percentage of equity lost per home at the tract level by dividing the total equity lost in the tract by the estimated total value of affected properties (i.e., median value times number of affected properties).[16]

III. LIMITATIONS

Like any analysis, ours has limitations. First, since our analysis comes out before all 2010 Census information has been released, not all data are available by new Census boundaries. Therefore, while we use current housing price and housing density information, our geographic allocations are based on the 2000 Census boundaries. Second, we assume that both foreclosures and housing units are evenly distributed throughout census tracts. While the distributions of both are likely to be uneven within a given tract, it is unlikely that our assumption of uniform distribution would systematically bias our results.[17] Third, research suggests that the spillover impact increases during the year leading up to the foreclosure sale, after which the negative effect stabilizes.[18] Given that there is variation in the magnitude of the spillover impact depending on what stage of the foreclosure process a property is in, we recognize that the full spillover impact of all of the foreclosure starts may not have materialized yet.[19] Finally, spillover loss, like any loss in home equity, may be temporary and there is some evidence that property values may eventually rebound months or years after foreclosed properties are purchased by new owners.[20] Despite the likelihood of this eventual rebound, we believe it is important to capture the aggregate loss in wealth incurred by nearby homeowners throughout the crisis, even if some of that equity may be restored at some point.

APPENDIX: DISTRIBUTION OF HOUSING

In order to conduct the analysis, we must make an assumption about the distribution of houses and the distribution of foreclosures. We assume that both are evenly distributed throughout the tract and that the contagion effect is linear.[21] Therefore:

For a census tract, let A be the area size in square miles, B be the number of foreclosed loans, C be the number of housing units, D be the median house price, E be the number of African Americans, and F be the number of Latino Americans. Let G=64A/ϖ. Then the number of neighboring homes experiencing devaluation is given by

$$H = \begin{cases} C, \text{if } B \geq G \\ C \times B \div G, \text{if } B < G \end{cases}$$

The dollar amount of decrease in house value/tax base from foreclosure effect is given by

$$I = 0.0074 \times C \times D \times B \div G$$

The number of African American experiencing devaluation is given by

$$J = \begin{cases} E, \text{if } B \geq G \\ E \times B \div G, \text{if } B < G \end{cases}$$

The number of Latino American experiencing devaluation is given by

$$K = \begin{cases} F, \text{if } B \geq G \\ F \times B \div G, \text{if } B < G \end{cases}$$

END NOTES

1 CRL calculation based on MBA National Delinquency Survey, scaled to reflect market coverage. Per MBA's claims, we assume 85% market coverage for 2007q1-2010q2 and 88% coverage for 2010q3 and after.

2 We estimate that 93 million properties are affected or will be affected by the spillover impact of a nearby foreclosure.

3 "Minority Neighborhood" is defined as a census tract where more than 50 percent of the residents are not non-Hispanic White.

4 Bocian, Li, Reid and Quercia. "Lost Ground, 2011: Disparities in Mortgage Lending and Foreclosures." Center for Responsible Lending, November 2011. Available at http://www.responsiblelending.org/mortgage-lending/ research-analysis/Lost-Ground-2011.pdf.

5 Federal Reserve Board, "The U.S. Housing Market: Current Conditions and Policy Considerations" (2012), available at http://federalreserve.gov/publications/other-reports/files/housing-white-paper-20120104.pdf.

6 G. Thomas Kingsley, Robin Smith and David Price, "The Impacts of Foreclosures on Families and Communities." Urban Institute, p. 18 (May 2009).

7 We use foreclosure starts as our basis for analysis because research suggests that the spillover impact is evident in the year leading to the foreclosure sale. See Harding, Rosenblatt and Yao, "The Contagion Effect of Foreclosed Properties," p. 4 (July 2009).

8 We multiply the number of loans serviced times the percentage entering the foreclosure process in each quarter, and adjust to reflect the NDS's 85-88% market coverage.

9 We estimate LPS's coverage to be equal to approximately 70% of the first-lien mortgages reported to federal regulators in HMDA data from 2005 through 2008.

10 LPS has zip code but not census tract information.

11 Foreclosure rate is calculated as of February 2012. Originations are limited to 2004-2010 because this is when LPS becomes sufficiently representative of the market.

12 We use University of Missouri's MABLE system to match census tracts to zip codes. For census tracts that are fully encompassed with a single zip code, that census tract is assigned the corresponding zip code's foreclosure rate. For census tracts that overlap multiple zip codes, we create a weighted foreclosure rate using the foreclosure rates of all of the zip codes, with weights equal to the proportion of the tract's housing units that are located in each zip code.

13 That is, we allocate the state-level, market-adjusted NDS foreclosure starts from 2007-2011 to census tracts based on the distributions of our calculated HMDA/LPS foreclosures for that state. Because the HMDA/LPS data is based on 2004-2010 originations, we assume that any loans originated before 2004 or after 2010 that began the foreclosure process between 2007 and 2011 have the same geographic distribution.

14 We use census-tract level housing units from the 2005-2009 American Community Survey (ACS) and tract size from the 2000 Census. We assume uniform distribution of housing units and foreclosures within census tracts. Our tract-level median housing prices also come from the 2005-2009 ACS.

15 Harding et al. estimate the spillover impact for two concentric rings around a foreclosed property: 0-300 feet and 300-660 feet. We determined the share the total circle encompassed by each ring and weight each ring's spillover impact by its share of the total area. Therefore, the expected decline for the entire 1/8 mile circle (both rings) is calculated as 25/121 * 1.3% expected home value decline (.269) plus 96/121 * 0.6 expected home value decline (.476) = .744 percent. Harding et al. also find that a relationship between foreclosures and spillover effect is roughly linear and we therefore apply a linear relationship when there are multiple foreclosures affecting a single property.

16 Tract-level percentage estimates are weighted by the number of affected properties to get higher-order geographic estimates.

17 If, in reality, housing units are evenly distributed within a tract but foreclosures are concentrated, we may be overestimating the number of homes affected but are underestimating the spillover impact per affected unit, and the effect on the total spillover cost would be unknown. If, on the other hand, foreclosures are evenly distributed but housing is concentrated, the impact on number of houses impacted, loss per house and total spillover are unknown. If both housing units and foreclosures are concentrated in the same areas, we are underestimating the number of units affected, the impact per affected unit and the total spillover. Only if housing units and foreclosures are concentrated in different areas within a given tract will our estimates of spillover loss per affected unit and total spillover loss be overestimated. In any event, because census tracts are small enough geographic entities that there is unlikely to be great variation in housing or foreclosure distribution, and because any variation is unlikely to be systematic across tracts, we feel comfortable that our assumption of even distributions does not bias the results of our analysis. For a more detailed analysis of the impact of distributions, please contact the authors.

18 Harding, Rosenblatt and Yao find that, for properties closest to foreclosures, the contagion effect peaks around the time of the foreclosure sale and stabilizes between the initial foreclosure sale and the sale of the REO property by the lender. They find that, although the impact lessens somewhat after the REO sale, it lasts for at least a year post-REO. They find a slightly different pattern for properties that are further from the foreclosed properties, with the contagion impact peaking closer to the REO date. In both cases, however, the negative impact on neighboring properties lasts for at least a year post-REO sale by the lender.

19 Furthermore, a small percentage of properties that begin the foreclosure process may "cure" prior to foreclosure sale and, therefore, their maximum spillover impact on neighboring will not be reached. In 2010, Amherst Securities estimated that 14% of non-performing loans (defined as those 60 days or more delinquent or in some stage of the foreclosure process) were "re-performing," either through self-cure or modification (see "The Housing Crisis—Sizing the Problem, Proposing Solutions," Amherst Securities Group, LP, October, 2010). This percentage is likely dominated by loans that were delinquent but not in the foreclosure process and therefore would likely be much lower had the analysis been limited only to those already in foreclosure. As a result, any overestimate in our spillover estimate that results from not adjusting for re-performing loans is likely to be very small. In addition, any overestimate is likely counteracted by the fact that our analysis does not include loans that were seriously delinquent but did not start the foreclosure process, though these loans likely had spillover consequences.

20 How long the contagion effect of a foreclosed property lasts is unclear. Harding et al. find that the "contagion" effect lasts for at least a year after the REO sale by the lender, and new research suggests that the spillover impact may be reversed by a year post-REO sale. See Gerardi, Rosenblatt and Willen "Foreclosures Externalities: Some New Evidence," Working Paper 2012-11 (August 2012).

21 Harding et al. test whether the spillover impact increases linearly with multiple foreclosures and finds this assumption to be safe.

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