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All Mortgages Are Not Created Equal

By Karl Rhodes and Breck L. Robinson

Housing experts have studied the relative performance of different types of mortgages during the housing crisis. But foreclosure analysis often overlooks distinctions between mortgages issued to occupant owners and those issued to non-occupant owners. This *Economic Brief* highlights the impact of non-occupant-owner mortgages on the housing crisis.

From 2002 through 2005, the peak of the housing boom, first-lien, home-purchase mortgages issued to non-occupant owners increased each year, both in raw numbers and as a percentage of the home-mortgage market. Non-occupant owners' annual share of this market increased from about 8 percent in 2000 to nearly 16 percent in 2005.[1]

Policymakers have asked whether speculation on investment homes played a disproportionate role in the housing crisis. This question is worth exploring for at least three reasons. First, as noted above, mortgages issued to non-occupant owners represented a fast-growing segment of the home-mortgage market in the years leading up to the housing crisis. Second, previous studies suggest that non-occupant owners (including investors) are more likely than occupant owners to default on mortgages, even after controlling for credit scores and other risk characteristics.[2] And third, there was a positive correlation between the disproportionate growth in non-occupant-owner mortgages and rapid home-price appreciation during the housing boom. This correlation brings up a causality question that this *Economic Brief* does not attempt to answer definitively, but it seems reasonable to suggest that causality could have run both ways. Investors may have gravitated to areas where they observed or expected rapid home-price appreciation, and the increased demand they generated in those areas may have driven prices up further.

One of the co-authors of this *Economic Brief* (Robinson) has measured the impact of non-occupant-owner mortgages using data obtained through Lender Processing Services (LPS) and the Home Mortgage Disclosure Act (HMDA).[3] He analyzed the prevalence and performance of non-occupant-owner mortgages on second homes, vacation homes, and investment homes, including rental properties with one to four units.[4] The HMDA data are more comprehensive, but the LPS data on non-occupant-owner mortgages can be subdivided into "second homes" and "other homes." The former category includes vacation homes, while the latter category includes rental properties and other homes owned primarily for investment purposes.

Foreclosure Theory

Two dominant theories attempt to explain why homeowners end up in foreclosure—trigger-event theory and option theory. Trigger-event theory refers to life-changing events, such as divorces or job losses, that significantly impair homeowners' ability to make timely mortgage payments. Option theory deals with foreclosures that occur when homeowners decide to stop

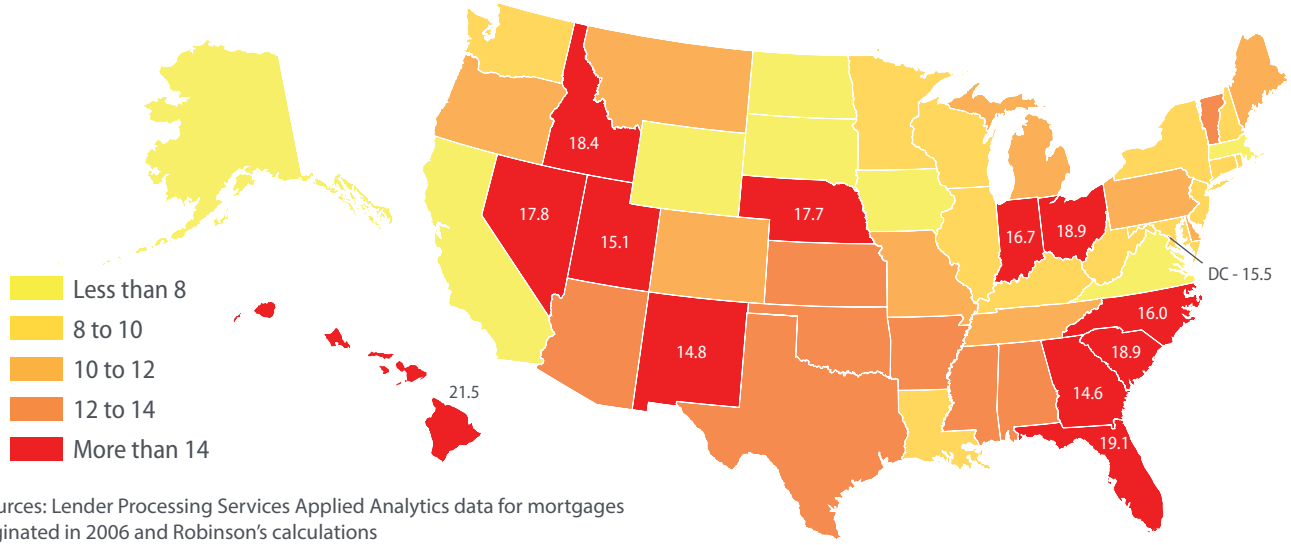
making payments even though they still have sufficient funds to remain current on their mortgages.[5] Trigger-event theory and option theory are not mutually exclusive. Quite often trigger events—such as dramatic decreases in property values—cause homeowners to consider exercising their foreclosure options. (Option theory primarily comes into play in non-recourse states, where mortgage lenders cannot take actions beyond foreclosure to recoup their investments.) In a non-recourse state, when a home has negative equity—that is, when the outstanding balance of its mortgage exceeds the home's market value—and when the amount of negative equity exceeds the observable transaction costs associated with default, many homeowners will at least consider exercising their foreclosure option, especially if they expect the market value of their homes to remain flat or decline further.[6]

Under option theory, the option strike price for any given homeowner is unknown because some transaction costs, such as loss of self-esteem, are unobservable. But generally an owner occupant would be less likely to exercise his default option because his transaction costs—both observable and unobservable—would tend to be higher than those of the non-occupant owner. The occupant owner would need to find another home, and he would incur the relocation expense and emotional trauma associated with leaving his primary residence. In addition, it could be more difficult for the owner occupant to purchase or rent a new home because the recent foreclosure would impair his credit. In sharp contrast, a non-occupant owner, especially an investor, would tend to have lower observable transaction costs and fewer sentimental attachments to his property. He likely would be more "ruthless"—that is, more willing to exercise his foreclosure option to optimize his financial results.[7]

In theory, the home-mortgage market would compensate for this greater risk by applying higher underwriting standards and/or higher interest rates to mortgages issued to non-occupant owners.[8] This theory is supported by both the HMDA data and the LPS data, which show that non-occupant owners have higher median incomes, higher FICO scores, lower debt-to-income ratios, and lower loan-to-value ratios compared to owner occupants.[9]

In a theoretical market where both lenders and borrowers have perfect information about mortgage default probabilities, higher underwriting standards would keep foreclosure rates for non-occupant owners roughly in line with foreclosure rates for occupant owners. But in the real world, when the housing market began to deteriorate, foreclosure rates grew faster for non-occupant owners. For loans originated in the years 2005 through 2007, foreclosure rates for non-occupant owners were 12.8

Figure 1: Percent of Foreclosures Involving Non-Occupant-Owner Mortgages



Sources: Lender Processing Services Applied Analytics data for mortgages orginated in 2006 and Robinson's calculations

percent, 20 percent, and 17.4 percent, respectively. During the same years, foreclosure rates for occupant owners were 12.3 percent, 18.7 percent, and 15.1 percent, respectively.

State-by-State Analysis

At the national level, occupant-owner mortgages outperformed non-occupant-owner mortgages three years in a row. These differences were statistically significant, and in some states, these differences were dramatic, especially in markets where housing prices appreciated the most in the years leading up to the housing crisis.

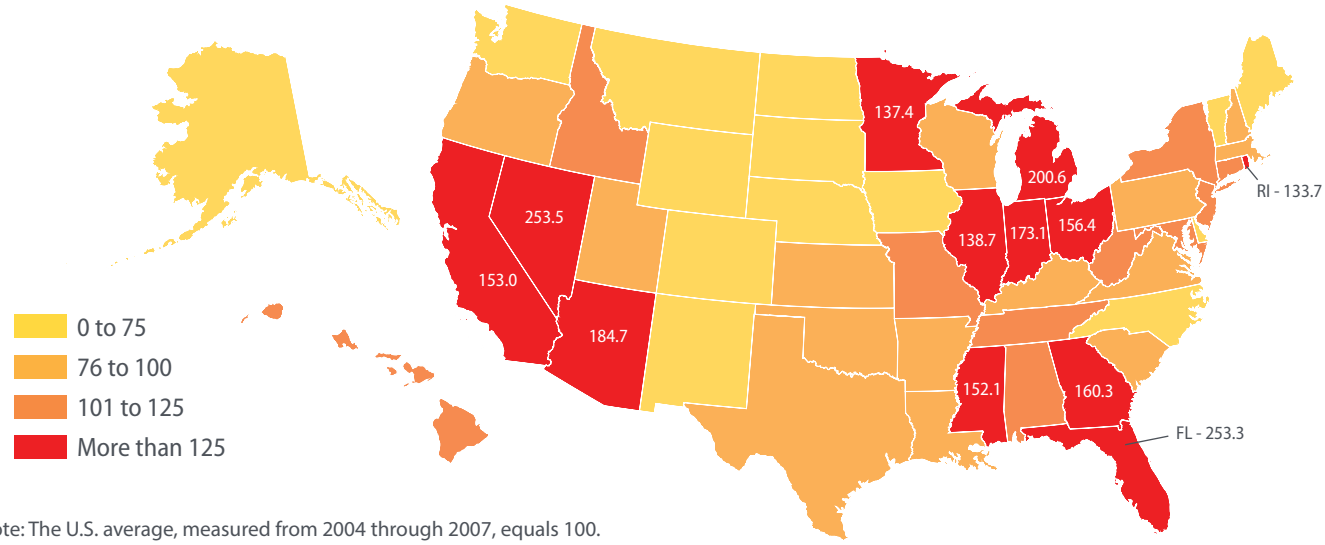
Robinson's state-by-state analysis of the LPS data looks first at the share of foreclosures involving non-occupant-owner mortgages that were originated in 2006, a percentage that varies widely across states.[10] (See Figure 1.) Given media accounts of mass foreclosures on second homes and investment properties in California, it is surprising that only 7 percent of foreclosures in the Golden State involved non-occupant owners—a much lower share than in the Southeastern states of Florida (19.1 percent), South Carolina (18.9 percent), North Carolina (16 percent), and Georgia (14.6 percent).

The problem with Figure 1, however, is that it tells only part of the story. For example, the share of foreclosures that involved non-occupant owners was about 12 percent in both Arizona and Alabama. But both types of mortgages performed much worse in Arizona than in Alabama, and in raw numbers, there were many more non-occupant-owner foreclosures in Arizona than in Alabama. So attempting to use non-occupant owners' share of foreclosures to measure non-occupant owners' impact on the housing crisis would greatly understate their role in Arizona and greatly overstate their role in Alabama.

To overcome this problem, Robinson developed an impact score composed of two factors, the prevalence of non-occupant-owner mortgages and the performance of non-occupant-owner mortgages. He defined prevalence as the number of non-occupant-owner mortgages divided by the total number of housing units in the year the mortgages were originated.[11] He defined performance as the number of foreclosures on non-occupant-owner mortgages originated in a given year divided by the total number of non-occupant-owner mortgages originated during that year. Multiplying the prevalence and performance factors produces a score that indicates the overall impact of non-occupant-owner mortgages on the housing crisis.

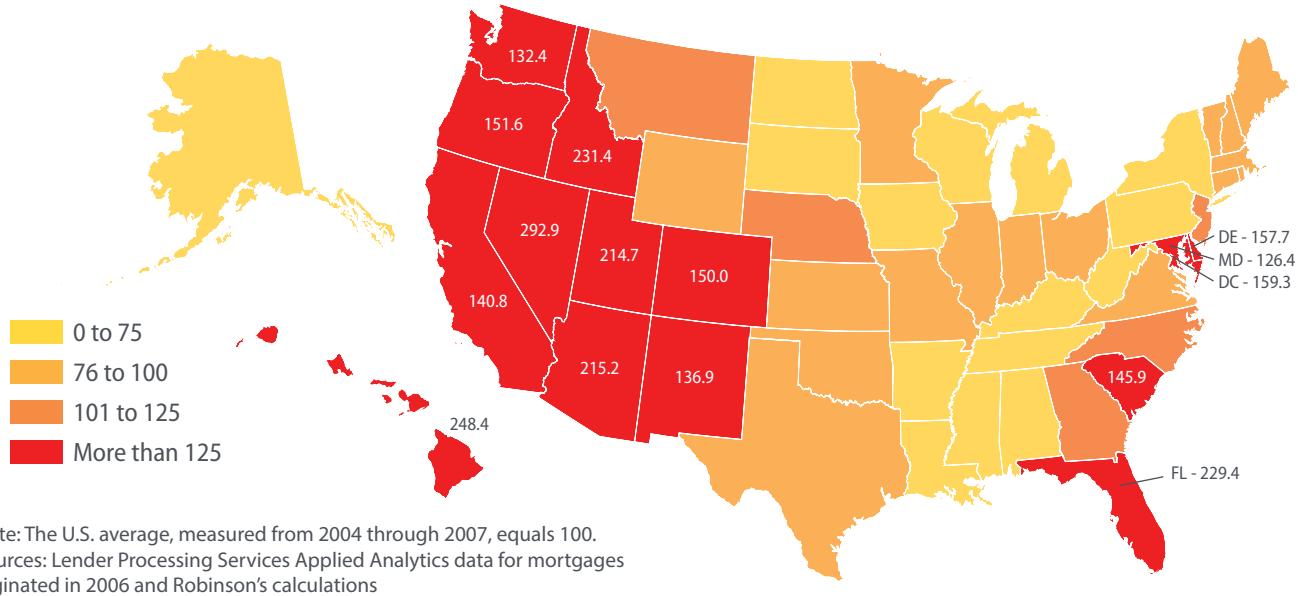
Nationally, the impact of non-owner-occupant mortgages nearly tripled from 2004 (before the crisis) to

Figure 2: Performance — Non-Occupant-Owner Mortgage Foreclosure Rates Relative to the U.S. Average



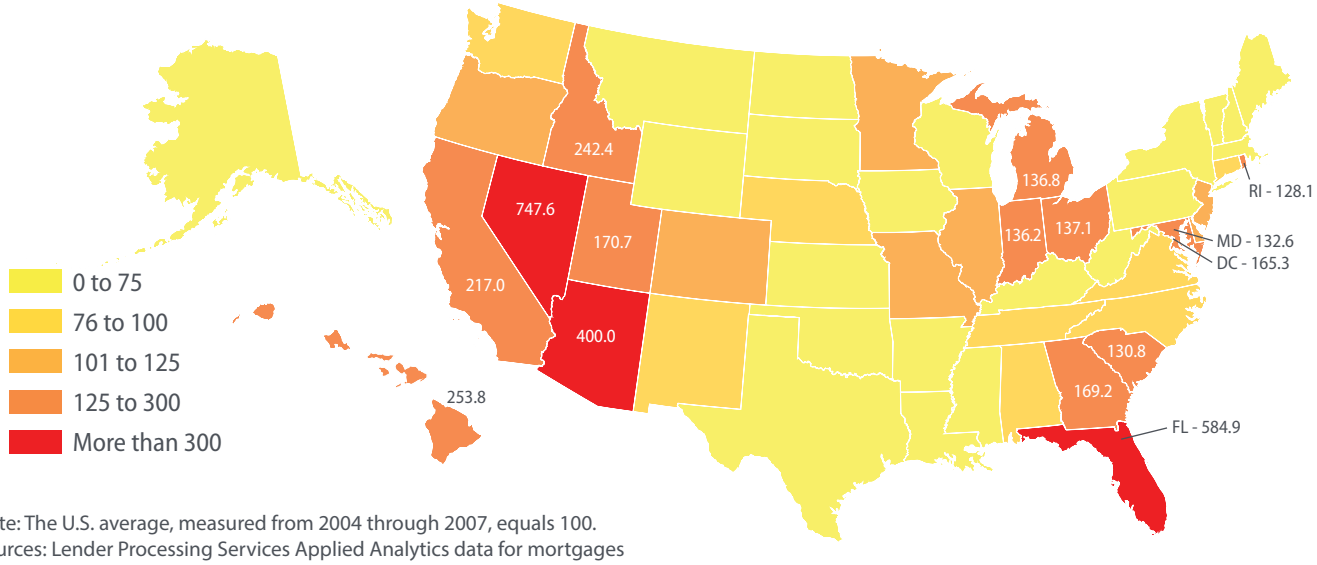
Note: The U.S. average, measured from 2004 through 2007, equals 100.
Sources: Lender Processing Services Applied Analytics data for mortgages orginated in 2006 and Robinson's calculations

Figure 3: Prevalence — Non-Occupant-Owner Mortgages Per Housing Units Relative to the U.S. Average



Note: The U.S. average, measured from 2004 through 2007, equals 100.
Sources: Lender Processing Services Applied Analytics data for mortgages orginated in 2006 and Robinson's calculations

Figure 4: Impact — Non-Occupant-Owner Mortgage Impact Scores Relative to the U.S. Average



Note: The U.S. average, measured from 2004 through 2007, equals 100.
Sources: Lender Processing Services Applied Analytics data for mortgages orginated in 2006 and Robinson's calculations

2006 (the first year of the crisis).[12] The growing impact was driven primarily by declining performance. The performance factor increased 190 percent from 2004 to 2006, while the prevalence factor increased only 18 percent.

At the state level, however, the relative importance of the two contributing factors varied substantially. Indiana, Ohio, and Michigan suffered more from poor performance while experiencing relatively low prevalence. (Compare Figures 2 and 3.). Conversely, Hawaii, Idaho, and Utah experienced high prevalence while suffering only average or slightly below average performance. (Compare Figures 2 and 3.)

The highest overall impact scores, expressed as percentages of the national average (100), were in Nevada (747.6), Florida (584.9), and Arizona (400)—states plagued by both high prevalence and poor performance. (See Figure 4.)

Policy Implications

High foreclosure rates persist in many American housing markets. The crisis is not over, and policymakers have been mostly unsuccessful in their attempts to mitigate the damage.[13]

Foreclosure prevention programs historically have focused on occupant owners, perhaps because policymakers assume that assisting non-occupant owners would amount to making transfer payments to wealthy individuals. But foreclosures on mortgages held by non-occupant owners may harm lower-income people who are renting those properties. There also could be a contagion effect if foreclosures on non-occupant-owned homes depress property values enough to place neighboring homeowners in positions of negative equity.

Mitigation efforts might be more effective if they included non-occupant owners nationally or in states where the impact of non-occupant-owner mortgages is particularly high. ■

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Endnotes

1 Data obtained through the Home Mortgage Disclosure Act show 2005 as the peak year for mortgage originations in the United States both for owner occupants and non-owner occupants.

2 For example, see Cowan, Adrian M., and Charles D. Cowan, "Default Correlation: An Empirical Investigation of a Subprime Lender," *Journal of Banking & Finance*, April 2004, vol. 28, no. 4, pp. 753–771; also Immergluck, Dan, and Geoff Smith, "Risky Business—An Econometric Analysis of the Relationship Between Subprime Lending and Neighborhood Foreclosures," Manuscript, Woodstock Institute, March 2004.

3 See Robinson, Breck L., "The Performance of Non-Owner-Occupied Mortgages during the Housing Crisis," Federal Reserve Bank of Richmond *Economic Quarterly*, Second Quarter 2012, vol. 98, no. 2, pp. 111–138.

4 Robinson's analysis excludes mortgages on rental properties with five or more units because multifamily housing played a relatively small role in the housing crisis.

5 For a more complete explanation, see Vandell, Kerry D., "How Ruthless Is Mortgage Default? A Review and Synthesis of the Evidence," *Journal of Housing Research*, 1995, vol. 6, no. 2, pp. 245–264.

6 Most homeowners with negative equity remain current on their mortgages, so it is difficult for lenders and policymakers to determine which borrowers need help to prevent foreclosure. See Foote, Christopher L., Kristopher Gerardi, and Paul S. Willen, "Negative Equity and Foreclosure: Theory and Evidence," *Journal of Urban Economics*, September 2008, vol. 64, no. 2, pp. 234–245.

7 For a more detailed discussion, see Kau, James B., Donald C. Keenan, and Taewon Kim, "Default Probabilities for Mortgages," *Journal of Urban Economics*, May 1994, vol. 35, no. 3, pp. 278–296.

8 For more on using option theory to price mortgages, see Kau, James B., and Donald C. Keenan, "An Overview of the Option-Theoretic Pricing of Mortgages," *Journal of Housing Research*, 1995, vol. 6, no. 2, pp. 217–244.

9 Another possible explanation is that borrowers who can afford second homes are more likely to have stronger financial characteristics.

10 Robinson tracked the performance of these mortgages through June 2011.

11 Non-occupant-owner mortgages are defined as first-lien, home-purchase loans, including refinancing of single-family homes but excluding home-improvement loans. The data on housing units by state comes from the American Community Surveys for 2004–07.

12 The impact of non-occupant-owner mortgages may be higher than the numbers reported here indicate because the LPS data do not cover the entire mortgage market and may underestimate the share of mortgages issued to non-occupant owners.

13 Foreclosure prevention programs initiated during the housing crisis include Hope for Homeowners, Home Affordable Mortgage Program, and Loan Mod in a Box, among others.