Lost Ground, 2011:

Disparities in Mortgage Lending and Foreclosures

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About this Research

In June 2010, the Center for Responsible Lending published *Foreclosures by Race & Ethnicity: The Demographics of a Crisis*, which showed the disparate impacts of foreclosures on African American and Latino homeowners and other communities of color. That report relied on foreclosure rates from a national dataset of mortgages that were matched with loan information collected under the Home Mortgage Disclosure Act (HMDA).

Like the previous report, the current research examines the geographic and demographic dimensions of foreclosures by relying on proprietary loan information matched with HMDA data. Here we also incorporate a third data source and new loan-matching methodologies, allowing us to examine outcomes on a larger portion of the mortgage market, and more variables related to those outcomes (e.g., loan type), during the peak years of the subprime boom. Our results are based on approximately 27 million matched loans, representing 63 percent of mortgages included in HMDA data that were originated between 2004 and 2008.

As the nation struggles through the fifth year of the foreclosure crisis, there are no signs that the flood of home losses in America will recede anytime soon. Among the findings in this report, *Lost Ground, 2011,* we show that at least 2.7 million households have already lost their homes to foreclosure, and more strikingly, that we are not even halfway through the crisis.

Lost Ground, 2011 builds on the Center for Responsible Lending's longstanding efforts to document the severity and demographic dimensions of the foreclosure epidemic. In 2006, CRL published *Losing Ground,* which projected subprime foreclosures and the attendant costs to homeowners prior to the collapse of the housing market.[1] In 2010, we published *Foreclosures by Race and Ethnicity: the Demographics of Crisis,* which estimated completed foreclosures through 2009 and the disparate rates of foreclosure for different racial and ethnic groups.[2] Assessing the scope of the crisis remains daunting, since there is no single, nationwide source of information on the number of foreclosures, the demographics of those affected, or the neighborhood distribution of foreclosed properties. In this report, we use an expanded dataset to update our previous findings and extend the scope of our analysis.

The report addresses three key questions. First, we consider **who** has lost their home to foreclosure, and who is still at risk. We look at both the race/ethnicity and income of borrowers, and explore how the impact of foreclosures on different socioeconomic and demographic groups varies depending on where they live. Second, we look at **what** kind of mortgages different borrowers received to better understand the relationship between loan characteristics and defaults. Finally, we examine **where** the crisis has had the greatest impact, assessing which areas and types of neighborhoods have been most affected.

Top-Line Findings

The nation is not even halfway through the foreclosure crisis. Among mortgages made between 2004 and 2008, 6.4 percent have ended in foreclosure, and an additional 8.3 percent are at immediate, serious risk.

Foreclosure patterns are strongly linked with patterns of risky lending. The foreclosure rates are consistently worse for borrowers who received high-risk loan products that were aggressively marketed before the housing crash, such as loans with prepayment penalties, hybrid adjustable-rate mortgages (ARMs), and option ARMs. Foreclosure rates are highest in neighborhoods where these loans were concentrated.

The majority of people affected by foreclosures have been white families. However, borrowers of color are more than twice as likely to lose their home as white households. These higher rates reflect the fact that African Americans and Latinos were consistently more likely to receive high-risk loan products, even after accounting for income and credit status.

In brief, these are the key findings:

1. **We are not even halfway through the foreclosure crisis.** Among homeowners who received loans between 2004 and 2008, 2.7 million households, or 6.4 percent, had already lost their homes to foreclosure as of February 2011.[3] Strikingly, an additional 8.3 percent—3.6 million households—were still at immediate, serious risk of losing their homes. Affected families span all races, ethnicities, and income levels. It is notable that these serious delinquencies represent only a sub-set of likely foreclosures ahead, since they do not include foreclosures on loans originated outside our origination time frame or those that are not yet at imminent risk.

2. **Loan characteristics and foreclosures are strongly linked.** The study examines outcomes on different loan types and finds a pattern of higher foreclosures and delinquencies associated with specific mortgage characteristics. Loans originated by brokers, hybrid adjustable-rate mortgages ("ARMs," such as 2/28s), option ARMs, loans with prepayment penalties, and loans with high interest rates (a proxy for subprime mortgages) all have much higher rates of completed foreclosures and are more likely to be seriously delinquent.

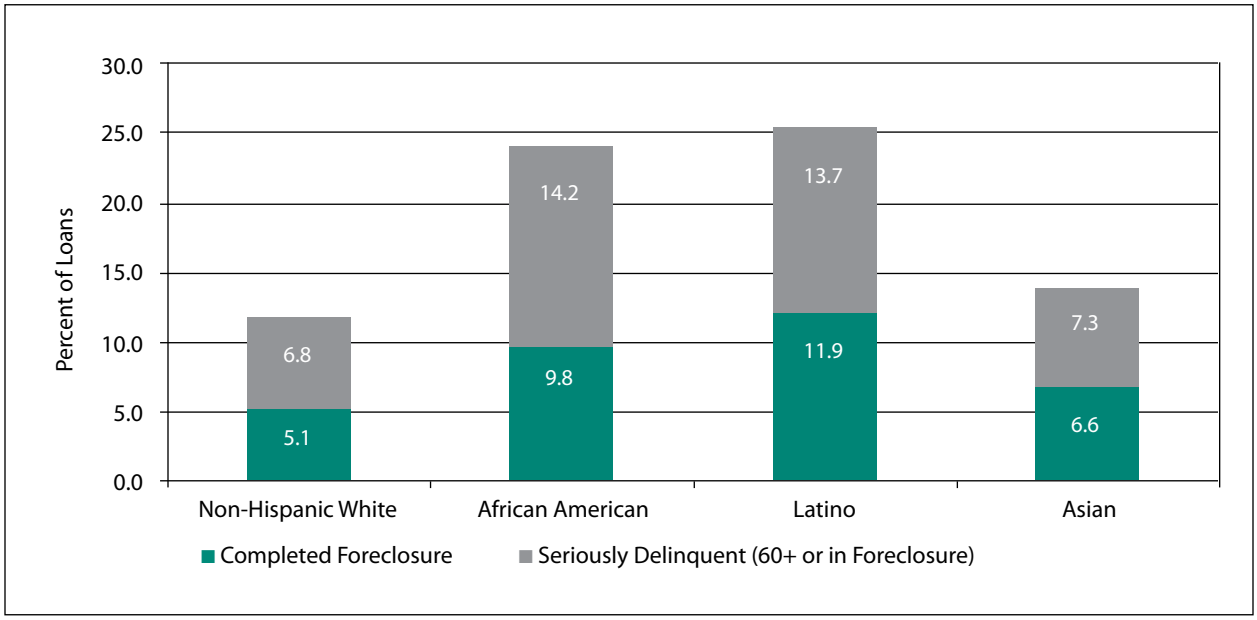
3. **Although the majority of affected borrowers have been white, African-American and Latino borrowers are almost twice as likely to have been impacted by the crisis.** Approximately one quarter of all Latino and African-American borrowers have lost their home to foreclosure or are seriously delinquent, compared to just under 12 percent for white borrowers. Asian borrowers have fared better as a whole than Latino and African-American borrowers, but they, too, have been disproportionately affected, especially in some metropolitan areas.

Loan Status (as of February 2011) by Loan Feature (2004-2008 Originations)

Loan Feature		Completed Foreclosures (%)	Seriously Delinquent (%)
Broker	Broker Originated	4.7	8.0
	Not Broker Originated	2.7	5.6
Hybrid or Option ARM	Hybrid or Option ARM	12.8	11.7
	Fixed Rate or Standard ARM	3.3	6.9
Prepayment Penalty	Prepayment Penalty	14.7	14.3
	No Prepayment Penalty	4.0	6.4
Higher-Rate	Higher-Rate	15.6	15.3
	Not Higher-Rate	4.6	6.9

Note: We define "hybrid" and "option" ARMs as loans with any one of the following characteristics: ARMs with interest rate resets of less than five years, negative amortization, or interest-only payment schedules. "Higher-rate" is defined as first-lien loans for which the annual percentage rate (APR) was 300 basis points or more above Treasury rates of comparable maturity.

Rates of Completed Foreclosures and Serious Delinquencies by Borrower Race and Ethnicity (2004-2008 Originations)



4. **Racial and ethnic differences in foreclosure rates persist even after accounting for differences in borrower incomes.** Racial and ethnic disparities in foreclosure rates cannot be explained by income, since disparities persist even among higher-income groups. For example, approximately 10 percent of higher-income African-American borrowers and 15 percent of higher-income Latino borrowers have lost their home to foreclosure, compared with 4.6 percent of higher-income non-Hispanic white borrowers. Overall, low- and moderate-income African Americans and middle- and higher-income Latinos have experienced the highest foreclosure rates.

5. **Loan type and race and ethnicity are strongly linked.** African Americans and Latinos were much more likely to receive high interest rate (subprime) loans and loans with features that are associated with higher foreclosures, specifically prepayment penalties and hybrid or option ARMs. These disparities were evident even comparing borrowers within the same credit score ranges. In fact, the disparities were especially pronounced for borrowers with higher credit scores. For example, among borrowers with a FICO score of over 660 (indicating good credit), African Americans and Latinos received a high interest rate loan more than three times as often as white borrowers.

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6. **Foreclosure rates by income groupings vary by housing markets.** In areas of the country that had weak or moderate housing price appreciation during the period leading up to the crisis, foreclosure rates are highest for low-income borrowers and lowest for higher-income borrowers. For example, low- and moderate-income borrowers have been most affected in cities such as Detroit, Cleveland, and St. Louis. However, in areas that had strong housing appreciation before the collapse, the opposite is true. In boom-market metropolitan areas located in California,

Nevada and Arizona, foreclosure rates are highest among middle- and higher-income borrowers. These patterns are consistent with the incidence of high-risk mortgages received by different groups of borrowers across the different housing markets.

7. **Impacts vary by neighborhood.** Low- and moderate-income neighborhoods and neighborhoods with high concentrations of minority residents have been hit especially hard by the foreclosure crisis. Nearly 25 percent of loans in low-income neighborhoods and 20 percent of loans in high-minority neighborhoods have been foreclosed upon or are seriously delinquent, with significant implications for the long-term economic viability of these communities.

Nearly 25 percent of loans in low-income neighborhoods and 20 percent of loans in high-minority neighborhoods have been foreclosed upon or are at high risk of default.

The findings presented in this report suggest that we are not even halfway through the foreclosure crisis, as millions of additional families are still at risk of losing their home. Meanwhile, Americans of every demographic group—all incomes, races, and ethnicities—have been affected. Our analysis shows that non-Hispanic white and middle- and higher-income borrowers represent the vast majority of people who have lost their homes. However, we also find that people of color and lower-income borrowers and neighborhoods have been disproportionately affected.

Our study provides further support for the key role played by loan products in driving foreclosures. Specific populations that received higher-risk products—regardless of income and credit status—were more likely to lose their homes. While some blame the subprime disaster on policies designed to expand access to mortgage credit, such as the Community Reinvestment Act (CRA) and the affordable housing goals of Fannie Mae and Freddie Mac (the government-sponsored enterprises, or GSEs), the facts undercut these claims.[4] Rather, dangerous products, aggressive marketing, and poor loan underwriting were major drivers of foreclosures in the subprime market.

The Dodd-Frank reforms, passed in July 2010, took the first vital step by strengthening mortgage protections, restricting the use of risky products and practices, and requiring lenders to consider each borrower's ability to repay a loan. These new rules will certainly have a positive effect on the success of future mortgages. Yet responding to today's battered housing market will require policy responses on a variety of other levels as well. In the short term, we need stronger measures to prevent additional foreclosures. Over the longer term, policymakers will need to consider how to rebuild the mortgage credit market, recognizing not only the current challenges but also the broader historical barriers to access to credit in this country.

For decades, owning a home has been the most accessible way to build wealth and gain a foothold in the middle class. Especially for lower-income families and middle-class borrowers of color, this crisis threatens to undo decades of economic, social and educational progress. But in our efforts to stabilize the housing market and prevent a future crisis, we must not create an environment where qualified borrowers are denied access to reasonably-priced mortgages. Future reforms—whether regulatory or legislative in nature—must prevent unfair and abusive lending practices while facilitating a stable supply of mortgage credit for all qualified borrowers.

I. INTRODUCTION

The United States is in the midst of an unprecedented foreclosure crisis. Since housing prices began their precipitous decline in early 2007, millions of homes have gone into foreclosure, and millions more remain in distress. The crisis has devastated families and communities across the country and is impairing economic growth for the nation as a whole.

Owning a home has long been the most accessible way to build wealth and gain a foothold in the middle class. Conversely, when families lose their homes, the resulting damage is multifaceted. First, there are the immediate financial, social and emotional costs associated with foreclosure and housing instability. Recent studies also indicate that foreclosures take a toll on the physical health of families who lose their home.[5] The negative impacts of housing insecurity can be particularly hard on children, influencing everything from behavior and cognitive development to academic performance.[6]

Foreclosures also entail long-term consequences for asset building and financial well-being. 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.

Finally, 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. The lower levels of wealth associated with foreclosures weaken consumer confidence and spending, thereby acting as a drag on the overall economic growth of the country.

Unfortunately, while much has been reported on the foreclosure crisis, information on the socioeconomic and demographic characteristics of foreclosed borrowers and neighborhoods is difficult to come by. The degree to which foreclosure data are reported varies tremendously, not just from state to state, but even from county to county, and these data rarely include information on the race, ethnicity or income of the affected homeowners. As a result, we have limited knowledge of who has been impacted by the crisis and which communities will experience the greatest negative consequences of foreclosures over the long term.

Better information on the impact of the foreclosure crisis can help policymakers craft more effective policies to speed economic recovery, strengthen affected families and neighborhoods, and help to prevent additional defaults. More precise foreclosure analysis is also pertinent to current policy debates on down payment requirements and the future of Fannie Mae and Freddie Mac, the Government Sponsored Enterprises (GSEs). The decisions made on those issues will dictate the availability of credit for generations to come, and should be informed by accurate information on the impact of the foreclosure crisis.

In this report, we combine multiple data sources and, for the first time, provide a comprehensive assessment of the demographic distribution of the foreclosure crisis. We answer several important questions. First, we analyze **who** has lost their home to foreclosure, and who still faces the risk of default. We look at both the race/ethnicity and income of borrowers, and explore how the impact of foreclosures on different socioeconomic and demographic groups varies depending on where they live. Second, we look at disparities in **what** types of mortgages different borrowers received to better

understand the relationship between the targeting of unsustainable loan products and defaults. Finally, we examine **where** the crisis has had the greatest impact, assessing which metropolitan areas and types of neighborhoods have been most affected by foreclosures.

II. BACKGROUND AND LITERATURE REVIEW

The past four years have been among the worst for the U.S. housing market. Millions of U.S. homeowners already have lost their homes to foreclosure and millions more are delinquent or in the foreclosure process. Though the crisis has been more pronounced in particular states, such as California, Nevada and Florida, families across country have been affected, either through the direct loss of their home or by the substantial loss of wealth resulting from decreases in their home equity.

Although foreclosures are increasingly driven by high and persistent unemployment, the crisis has its origins in the subprime mortgage market. While subprime loans were initially marketed as "niche" products, during the latter half of the 1990s and early 2000s, subprime lending exploded to become a major driver of the U.S. housing market. From 1996 to 2006, the size of the subprime mortgage market grew from $97 billion to $640 billion.[7] At the peak of the subprime market in 2006, 27 percent of all loan originations were subprime, including 49 percent and 39 percent of loans made to African Americans and Latinos, respectively.[8] As was true with the Alt-A market,[9] during this time period the subprime market became increasingly dominated by "non-traditional" loans, including interest-only loans, loans with limited or no documentation of income or assets, and loans with low teaser rates that adjusted to much higher rates. These loans were often made on the basis of weak underwriting and without regard for borrowers' ability to repay them.

To a large extent, the deterioration in lending standards was masked during the housing boom; because of the increase in property values, borrowers could refinance or sell their homes when their rates reset or otherwise became unaffordable. However, when house price growth slowed in late 2006, the true hazards of these loans were exposed. In its final report to Congress on the causes of the foreclosure crisis, the U.S. Department of Housing and Urban Development (HUD) confirmed that, while softening housing prices were clearly a triggering factor, the foreclosure crisis itself was "fundamentally the result of rapid growth in loans with a high risk of default—due both to the terms of these loans and to loosening underwriting controls and standards."[10] (See "The Red Herrings.")

In addition to an overall deterioration in underwriting over this time period, subprime lenders began to target historically disadvantaged communities with high-cost and risky loan products. A "dual mortgage market" emerged, in which low-income borrowers and borrowers of color were served primarily by subprime lenders, while higher-income and white borrowers were served primarily by conventional lending institutions. Overwhelmingly, research on the dual mortgage market has shown that, even after controlling for differences in borrower and neighborhood risk characteristics, borrowers of color were more likely to receive subprime loans and/or loans with other risky product features. The studies have also consistently showed that subprime loans were more prevalent in low-income and minority neighborhoods. (See "The Dual Mortgage Market.")

The Red Herrings

One misperception that continues to circulate in the media is that the foreclosure crisis stems from government efforts to ensure fair access to credit for low- and moderate-income consumers. Specifically, some observers have charged that the Community Reinvestment Act (CRA)[11] and the affordable housing goals of the GSEs, Fannie Mae and Freddie Mac, precipitated the explosion of risky lending during the subprime boom by requiring banks to make loans to unqualified borrowers.

The facts simply do not support these accusations. Regarding the claims blaming the CRA, there are at least three important rebuttals. First, CRA has been on the books for three decades, while the rapid growth of subprime and other non-prime loan securitization and the pervasive marketing of risky loan products did not occur until recent years.

Second, the predominant players in the subprime market—mortgage brokers, independent mortgage companies, and Wall Street investment banks—were not subject to CRA requirements at all. In fact, only six percent of higher-priced loans, a proxy for subprime, were subject to CRA, meaning that they were extended by CRA-obligated lenders to lower-income borrowers or neighborhoods within their CRA assessment areas.[12]

Third, studies have shown that loans made to low- and moderate-income homebuyers as part of banks' efforts to meet their CRA obligations have actually performed better than the rest of the subprime market. In an analysis of CRA-motivated loans sold to a community development financial institution (CRL's affiliate Self-Help), Ding, Quercia and Ratcliffe found that the default risk of these loans was much lower than subprime loans made to borrowers with similar income and credit risk profiles.[13] A study by the Federal Reserve Bank of San Francisco found that CRA-eligible loans made in California during the subprime boom were half as likely to go into foreclosure as loans made by independent mortgage companies, which were not subject to CRA requirements.[14]

Similarly, research shows no evidence that the GSEs' affordable housing targets were a primary cause of the crisis. First of all, the GSEs could not purchase or securitize subprime mortgages directly because such loans were outside the prescribed GSE guidelines. Subprime mortgage-backed securities were created by Wall Street firms, not the GSEs. Second, while the GSEs did purchase subprime mortgage-backed securities as investments and often received affordable housing goal credits for those purchases, their share of such purchases was a fraction of that of the private sector, and one that decreased over time, disproving the argument that the GSEs pushed the market towards unsound, risky lending.[15]

In addition, the mortgages that accounted for most of the GSEs' losses were not affordable housing loans but rather loans that generally went to higher-income families. At the end of 2010, among loans acquired by the GSEs between 2005 and 2008, affordable housing targeted purchases comprised less than eight percent of their 90-days delinquent portfolio, only a small share of overall troubled assets held by the GSEs.[16] Most of the GSEs' losses are tied to Alt-A mortgages, and those loans did not count toward their affordable housing targets, and in fact diluted them.[17]

In short, the assertion that the CRA or GSEs precipitated the foreclosure crisis, while a convenient narrative for opponents of financial regulation, is undermined by the facts. Indeed, recent research by Robert Avery and Kenneth Brevoort at the Federal Reserve Board of Governors has further shown that neither the CRA nor the GSEs caused excessive or less prudent lending in low- and moderate-income neighborhoods.[18]

Though there is significant literature on the implications of the dual mortgage market for subprime lending outcomes among different demographic groups, the lack of national, publicly-available data on foreclosures has made research on the demographic dimensions of the foreclosure crisis much more difficult. In 2010, the Center for Responsible Lending published the first study to use national data to estimate the impact of foreclosures on communities of color. The analysis, which applied the foreclosure rates of groups of loans from Lender Processing Services to similar groups of loans in HMDA, estimated that 17 percent of Latino and 11 percent of African-American borrowers had already lost or were at imminent risk of losing their home to foreclosure at the end of 2009, compared to seven percent for non-Hispanic white borrowers.[19] However, an important limitation of this study was its inability to capture foreclosure rate disparities attributable to differences in the specific loan products received by different populations of borrowers.

Other studies that have tried to answer the question of who has been affected by foreclosures have tended to focus on smaller geographic areas. Focusing on California, Bocian, Smith, Green and Leonard found that over half of the state's foreclosures were experienced by Latino families, far higher than the Latino share of the state's total population or population of homeowners.[20] In a study in Minneapolis, Allen found that foreign-born minority households were 1.7 times more likely to go through a foreclosure than native-born white households, and that Latino households were particularly vulnerable if they had taken out a loan to purchase rather than refinance their home.[21] Anacker and Carr found that high-income African Americans in the metropolitan D.C. area were 36 percent more likely than whites to go into foreclosure, while Latino borrowers were 79 percent more likely to be foreclosed on than their white counterparts.[22] While these studies cannot be generalized to the United States as a whole, they nevertheless provide compelling evidence that the foreclosure crisis has fallen disproportionately on borrowers of color.

There is also growing evidence that foreclosures have been concentrated in particular types of neighborhoods. Researchers who have studied the crisis have identified three key factors in the location of foreclosures. First, foreclosures have been heavily concentrated in suburban neighborhoods that saw considerable new construction and rapid housing price appreciation during the subprime lending boom, particularly in states such as Florida, California, Nevada and Arizona.[23] These neighborhoods were attractive to a wide range of moderate- and middle-income families hoping to become homeowners—including many Latinos, Asians and African Americans—and who were priced out of neighborhoods elsewhere. Second, older, inner-city neighborhoods—particularly those with high percentages of low-income and minority residents—have also seen a disproportionate share of foreclosures.[24] Finally, researchers have found that metropolitan areas with high levels of segregation have increased levels of foreclosure, even after controlling for levels of minority populations and subprime lending.[25] These studies all provide strong evidence that low-income and minority neighborhoods are being hit hardest, not only by foreclosures, but by the attendant spillover effects of higher crime, lower property values, and fractured social cohesion.[26]

This study builds on the existing research by creating a unique loan-level dataset with broad national coverage. The comprehensiveness of this dataset, both in terms of data content and market coverage, allows us to paint a more complete picture of the borrowers and neighborhoods that have been affected by foreclosures. Specifically, we are able to look not just at the foreclosure rates for different demographic groups, but also at the specific loan products received by different populations. By analyzing these foreclosures and lending patterns in tandem, we are able to get a much richer understanding of the demographic dimensions of the foreclosure crisis. In addition, the large number of loans in the merged dataset allows us to look at patterns of foreclosures and delinquencies at a smaller geographic scale, including disparities in outcomes at the state and metropolitan level.

The following section describes the data and methodology used in this report. This is followed by a discussion of our key findings and our conclusion.

The Dual Mortgage Market

Researchers trying to understand the disparate impact of foreclosures on lower-income and minority communities have increasingly focused on the failings of the "dual mortgage market," in which lower-income and minority neighborhoods and borrowers were served primarily by subprime lenders (even when they could have qualified for a prime loan), and as a result were more likely to receive subprime loans.[27] Overall, these studies have found that the race and/or ethnicity of a borrower are strong determinants of the probability of receiving a subprime loan.[28] Even within the subprime market segment, there is evidence that African Americans and Latinos were more likely to be steered into higher-priced loans than white borrowers. Bocian, Ernst and Li found that African-American and Latino borrowers were about 30 percent more likely to receive higher-cost subprime loans than similarly-situated white borrowers.[29] Courchane also found that, after controlling for the likelihood of receiving a subprime loan, African-American borrowers received higher APRs than white non-Hispanic borrowers.[30] Research also has shown that place matters, and that higher-priced and subprime loans were more frequent in low-income and minority neighborhoods than in higher-income or predominantly non-Hispanic white neighborhoods.[31]

The existence of the dual mortgage market was made possible in part by the dominance of mortgage brokers in the market. The majority of subprime loans were originated by brokers, who were largely unregulated at the federal level (and the breadth and depth of state broker regulations varies considerably). The dominance of broker originations in the subprime market was particularly dangerous due to their ability to charge yield-spread premiums (YSPs), which were financial incentives paid by lenders to brokers to charge borrowers higher rates than they qualified for. As a result, studies have found that, especially for borrowers of color, the mortgage broker channel resulted in unequal loan outcomes, even after controlling for borrower and neighborhood risk characteristics.[32]

In addition to brokers' perverse incentives, the rise of the dual market was also facilitated by federal regulators who failed to recognize the risks that subprime loans posed to consumers. The Office of the Comptroller of the Currency and the Office of Thrift Supervision both preempted the lenders they regulated from stronger state anti-predatory lending laws,[33] and the Federal Reserve failed to use its authority under the Home Ownership and Equity Protection Act (HOEPA) to expand protections for consumers taking out subprime loans until July 2008.[34] Without adequate consumer protections in place, borrowers in underserved communities—especially those with inadequate information or knowledge of the mortgage lending market—were more vulnerable to poor underwriting and other predatory practices.[35]

III. DATA/METHODOLOGY

The analysis in this report relies on a loan-level dataset that matches data submitted by financial institutions under the Home Mortgage Disclosure Act (HMDA) of 1975 with data from two national, proprietary datasets on loan performance: Lender Processing Services (LPS) and BlackBox. HMDA is the largest publicly available database of U.S. home lending activity and includes demographic information on the borrower, including race, ethnicity, and income, the disposition of the loan (accepted or denied), and some information on the loan terms (for example, if it was used for purchase or refinance, and whether or not the loan was higher-priced). However, HMDA data is restricted to information collected at origination—it contains no information on whether the loan is delinquent or in foreclosure.

To obtain information on loan performance, we rely on data from LPS and BlackBox, which are complementary, proprietary loan-level databases.[36] LPS is collected from loan servicers, while BlackBox, which is exclusively comprised of loans that are in private-label securities, is collected from investor pools. While these databases do not contain any demographic information, they do contain data on loan performance. The advantage of using both LPS and BlackBox in this analysis is that it allows us to analyze a broader segment of the mortgage market than using either one by itself. Importantly, the addition of the BlackBox data allows us to assess the outcomes for a greater share of subprime and Alt-A mortgages—the risky loans that precipitated the crisis—since these were more likely to be securitized on the private secondary market.

To combine these three databases, we employ a probabilistic matching technique that links loan performance data from LPS and BlackBox to the loan origination data from HMDA, which serves as our proxy for the universe of mortgage originations. That is, we allow loans in LPS and BlackBox to be matched to loans in HMDA along loan characteristics that are common to all three datasets. HMDA loans that match to more than one LPS or BlackBox loan are weighted so that each HMDA loan is given a final weight of one. For example, if one HMDA loan was matched to two loans in LPS and one loan in BlackBox, each match would be given a weight of one-third. The matching algorithm is explained in greater detail in Appendix 1.

The advantage of using this probabilistic matching technique is that we do not lose the observations that would need to be dropped if we insisted on unique matches between the databases or if we excluded loans that were in census tracts with overlapping zip codes. Relying on unique matches can introduce bias: for example, loans with fewer matches tend to be prime loans, government loans, non-broker originated loans, and loans in non-boom housing markets. Therefore, focusing only on loans with unique matches would bias the results towards loans with better performance. While we undoubtedly have "false positive" matches in our sample, the weights that are assigned to these loans diminishes their effect and should not have any biased direction.

The final sample used in our analysis contains approximately 27 million matched loans, representing 63 percent of the HMDA universe of 42.9 million first-lien owner-occupied mortgages originated between 2004 and 2008. Loan performance is observed through February 2011. We include both purchase and refinance loans in our analysis; we also consider the performance of FHA/VA loans in addition to conventional loans. Table 1.2 in Appendix 1 provides descriptive statistics for the matched HMDA/LPS/BlackBox dataset.

We assess two measures of loan performance: (1) completed foreclosure, meaning that the property has gone through the foreclosure process and has been lost to the homeowner; and (2) seriously delinquent, which refers to loans that were more than 60 days delinquent or in the foreclosure process as of February 2011. Both completed foreclosures and serious delinquency rates are calculated as a percentage of all 2004-2008 originations.[37]

The comprehensive nature of our merged dataset as well as its national coverage allow us to provide important insights into the distribution of foreclosures to date. However, we are duly cautious about the limitations of matching records across disparate sources of data, especially when the data are proprietary and are not reviewed and cleaned as part of a public reporting system. Furthermore, the presence of "false positive" matches in our sample, resulting from the limited number of common fields between the datasets, highlights the need for a publicly-available dataset that includes information from origination to termination on a representative sample of U.S. mortgage loans. This type of data would allow researchers to answer a much broader set of questions, leading to more effective, evidence-based policymaking. In the absence of such data, the HMDA/LPS/BlackBox match provides us with the opportunity to build on the existing literature and for the first time describe the relationship between lending patterns and foreclosure rates for different demographic and geographic groups.

It is also worth noting that our analysis does not cover all loans and/or borrowers affected by the foreclosure crisis. The analysis is based on individual loans included in the datasets, not individual borrowers. As a result, some borrowers are almost certainly in our dataset more than once, for example, because they refinanced over the 2004-2008 time period. Unfortunately, there is no way to link multiple loans associated with a single borrower.[38] Second, the analysis is limited to 2004-2008 originations by HMDA-reporting institutions. Therefore, loans originated outside that time frame or by non-HMDA covered institutions will not be reflected in our analysis. Our estimates of the number of serious delinquencies and foreclosures are therefore conservative—that is, an even greater number of borrowers have been affected by the crisis.

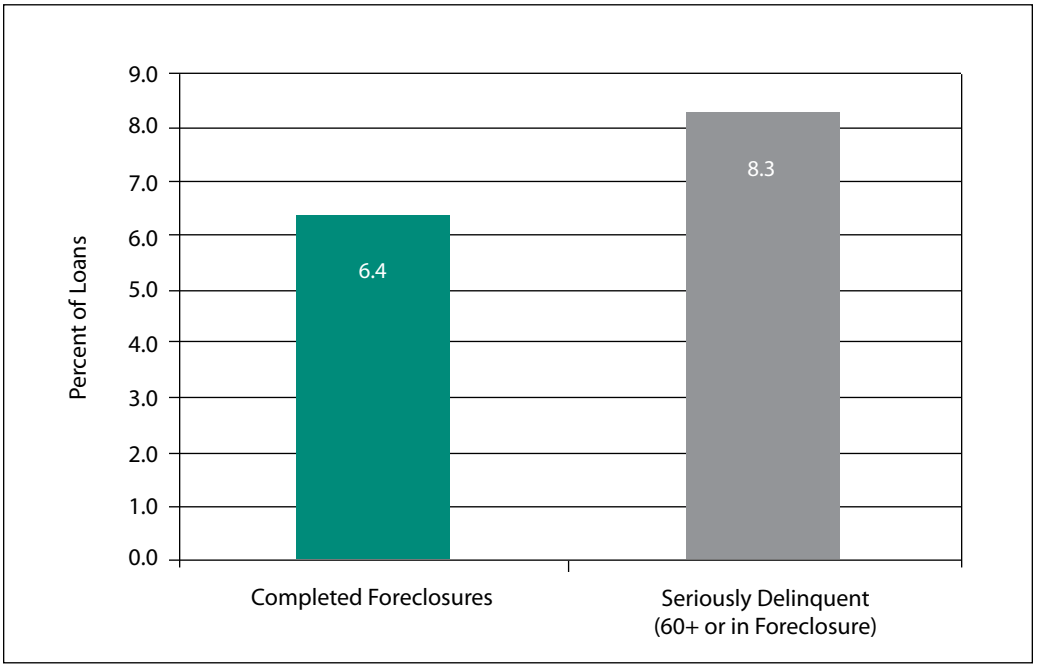
IV. ANALYSIS AND FINDINGS

In this section, we present our analysis and seven separate findings. We begin by calculating the total numbers of completed foreclosures and seriously delinquent loans and analyzing the performance of different types of loan products. To assess which borrowers have been affected by the foreclosure crisis, we examine foreclosure and delinquency rates by race, ethnicity, and income. We also look at loan performance in different types of neighborhoods, characterizing the neighborhood by its demographic and socioeconomic composition. Throughout the analysis, we also look at the incidence of different types of loans by demographic group and neighborhood type. While it is beyond the scope of this report to develop a full regression model to isolate the impact of various factors on foreclosures, our analysis of loan products provides useful information for understanding foreclosure patterns and explaining disparities in foreclosure rates among different demographic groups, neighborhoods and types of housing markets.

Finding #1: The foreclosure crisis is less than halfway over. Among borrowers who received loans between 2004 and 2008, 6.4 percent have already lost their homes to foreclosure. Strikingly, an additional 8.3 percent were still at serious risk of losing their homes. Affected borrowers span all races, ethnicities, and income levels.

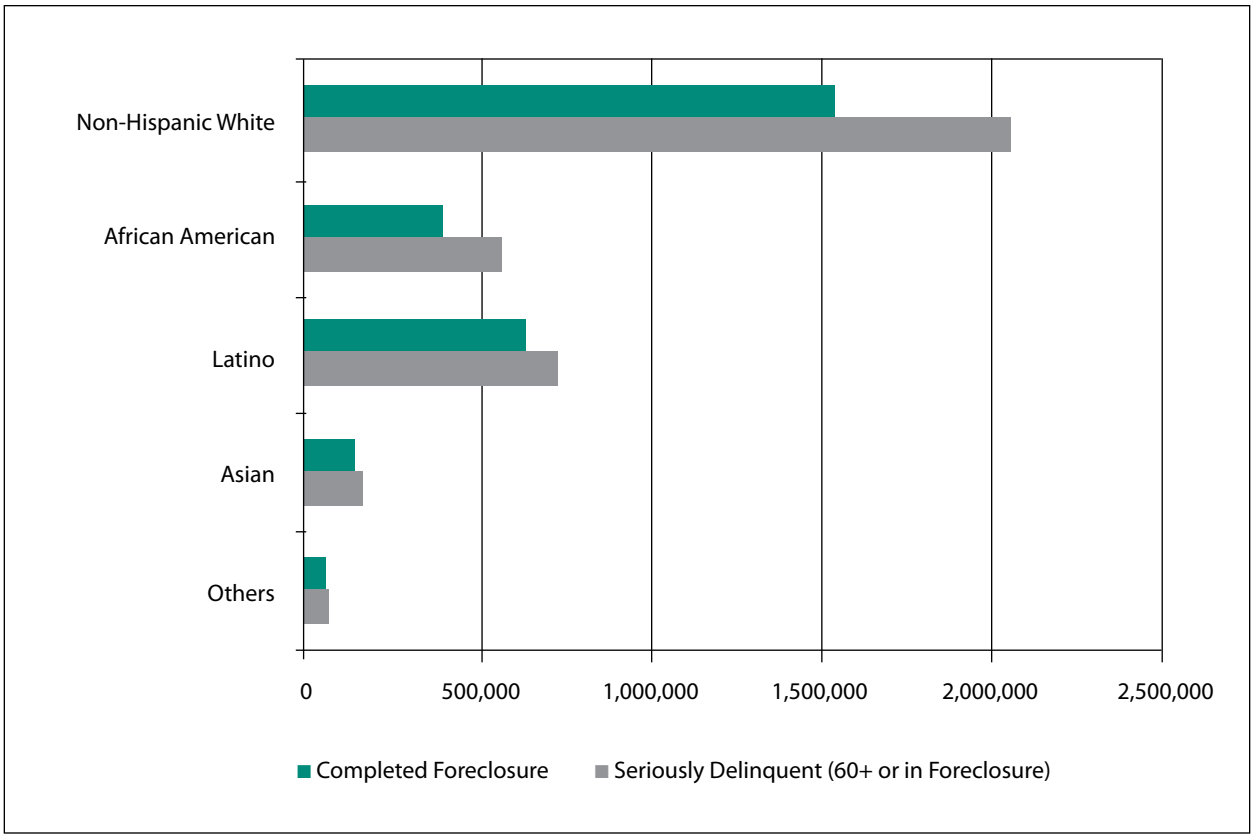
The impact of the foreclosure crisis has been far-reaching. Based on the HMDA/LPS/BlackBox data, we estimate that more than 2.7 million homeowners who received loans between 2004 and 2008 had already lost their homes to foreclosure as of February 2011, representing 6.4 percent of those borrowers. Another 8.3 percent of these loans, or 3.6 million households, were 60 or more days delinquent on their mortgage or in some stage of the foreclosure process, and at serious risk of losing their homes.[39] (See Figure 1.) This suggests that, five years into this crisis, we are not even halfway through it.

Figure 1: Rates of Completed Foreclosures and Serious Delinquencies (2004 – 2008 Originations)



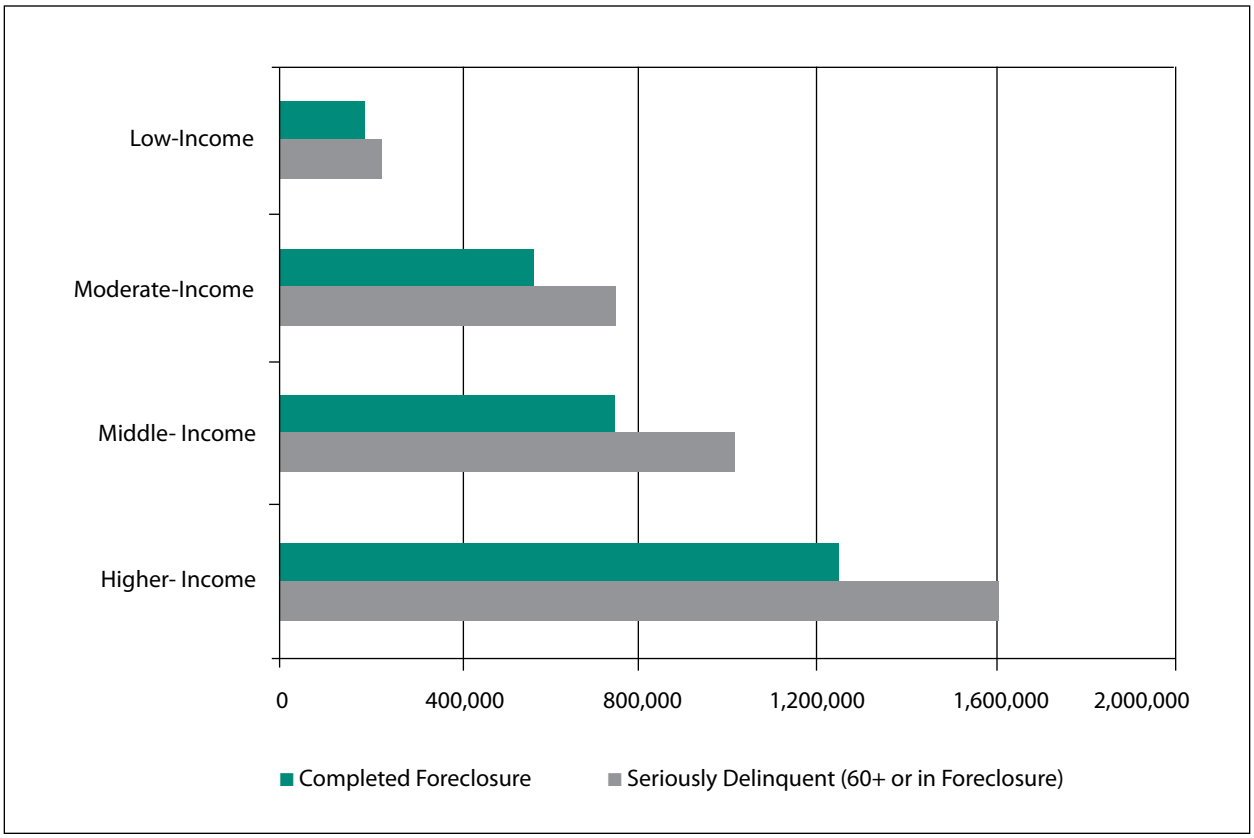
As shown in Figures 2 and 3, foreclosures have reached into every U.S. community, affecting borrowers across racial, ethnic, and income lines. The vast majority of families who have lost their homes have been white non-Hispanic[40] and middle- or higher-income.[41] As of February 2011, over 1.5 million white borrowers who received their loans between 2004 and 2008 have lost their homes to foreclosure, and over 2 million were 60 or more days delinquent or in the foreclosure process. Among middle- and higher-income households, 2 million have lost their homes, and another 2.6 million homes were seriously delinquent. The large number of borrowers still in distress shows that the weak economy is taking its toll, as long durations of unemployment are affecting the ability of households to make their mortgage payments.

Figure 2: Number of Completed Foreclosures and Seriously Delinquent Loans by Race/Ethnicity (2004-2008 Originations)



Note. Volumes are based on applying rates calculated from the merged sample to all 42.9 million 2004-2008 HMDA originations.

Figure 3: Number of Completed Foreclosures and Seriously Delinquent Loans by Borrower Income (2004-2008 Originations)



Note: Volumes are based on applying rates calculated from the merged sample to all 42.9 million 2004-208 HMDA originations. Low-income refers to borrowers at 50% below area median income (AMI), moderate-income refers to borrowers at 50-80% of AMI, middle-income refers to borrowers at 80-120% of AMI, and higher-income refers to borrowers at 120% or above AMI.

Finding #2. Loans with certain product features—higher interest rates, prepayment penalties, and hybrid or option adjustable interest rates, as well as loans originated by brokers—have much higher rates of completed foreclosures and are more likely to be seriously delinquent. However, as the crisis has continued, these types of loans make up a smaller share of all troubled loans.

Consistent with other research that has documented the importance of loan products and underwriting in precipitating the foreclosure crisis, we find that foreclosure rates vary by loan product type. Loans originated by mortgage brokers,[42] adjustable rate mortgages (ARMs) with non-traditional features (specifically, interest-only payments, negative amortization options or hybrid rate structures with low initial "teaser" interest rates), loans with prepayment penalties,[43] and loans with higher interest rates[44] are all associated with higher rates of completed foreclosures and serious delinquencies. (See Table 1.) The higher rates of default for higher-rate/subprime loans are not surprising, given that these products were supposed to serve higher-risk borrowers. However, there is evidence that higher-rate loans were often inappropriately targeted: as many as 61 percent of borrowers who received subprime loans had credit scores that would have enabled them to qualify for a prime loan.[45]

Although risky loan features are strongly associated both with higher completed foreclosure rates and higher rates of delinquencies, their significance in driving new delinquencies appears to be decreasing. For example, loans with adjustable interest rates that had payment options or that began with a fixed lower interest rate that changed to an adjustable rate after a year or two—comprised 36.8 percent of seriously delinquent loans.[46] While this is still much higher than their share of all loans (25.4 percent), it represents a sizable decrease from their 56.7 percent share of completed foreclosures. Similar patterns are seen for loans with prepayment penalties or higher-interest rates.

There are two likely explanations for the declining influence of loan characteristics on foreclosures. First, many of the riskiest loan products have already completed foreclosure and, therefore, their total share of active loans has decreased. Second, as the crisis has evolved, unemployment and other economic factors, as opposed to product features, have increasingly been driving new delinquencies.

Table 1: Loan Status (as of February 2011) and Features (2004-2008 Originations)

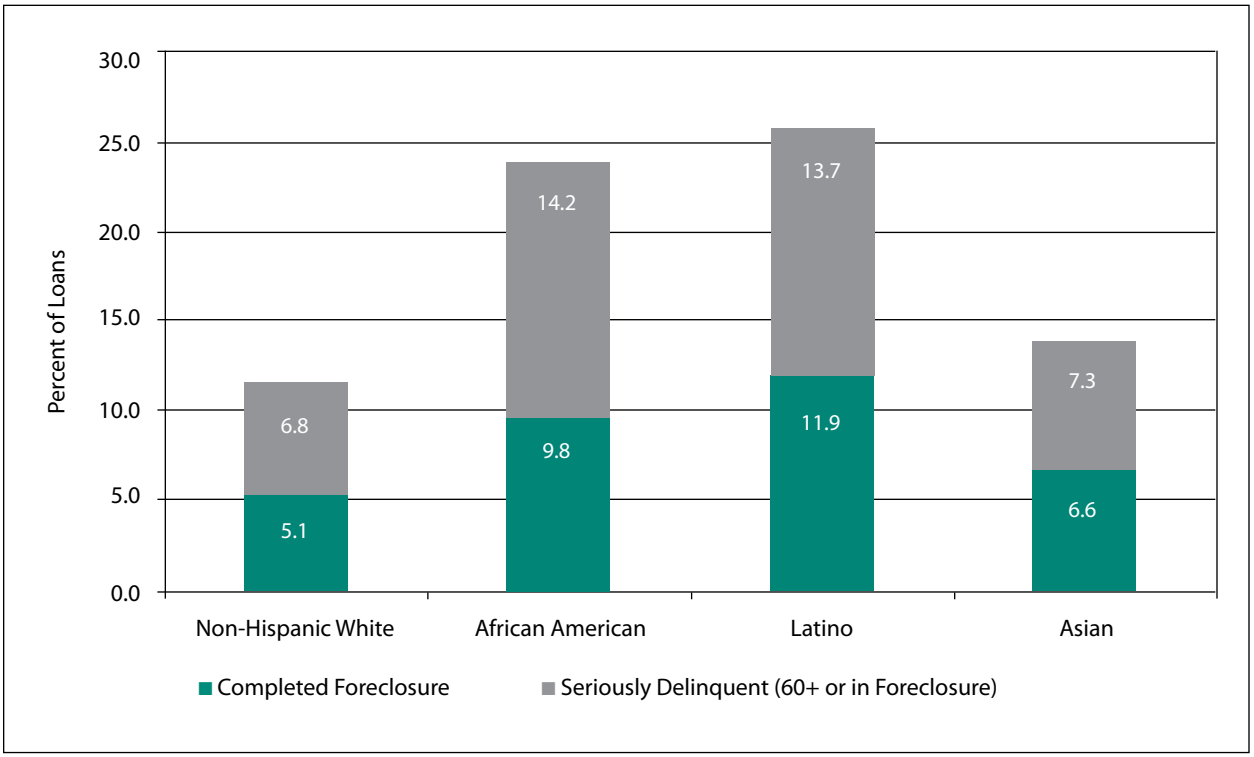
		Loan Status		Proportion of Loans with High-Risk Features by Status		
Loan Feature		Completed Foreclosures	Seriously Delinquent	Share of Originated Loans	Share of Completed Foreclosures	Share of Serious Delinquencies
Broker	Broker Originated	4.7	8.0	53.5	66.4	61.9
	Not Broker Originated	2.7	5.6			
Hybrid or Option ARM	Hybrid or Option ARM	12.8	11.7	25.4	56.7	36.8
	Fixed Rate or Standard ARM	3.3	6.9			
Prepayment Penalty	Prepayment Penalty	14.7	14.3	16.2	41.5	30.2
	No Prepayment Penalty	4.0	6.4			
Higher-Rate	Higher-Rate	15.6	15.3	16.8	40.6	30.7
	Not Higher-Rate	4.6	6.9			

Finding #3: Although the majority of foreclosures have affected white borrowers, African-American and Latino borrowers are almost twice as likely to have lost their home to foreclosure as non-Hispanic whites.

While the data show that the foreclosure crisis has been widespread, our analysis also provides new and compelling evidence of the disproportionate impact of the foreclosure crisis on borrowers of color. Among African-American and Latino borrowers, 9.8 and 11.9 percent have lost their home to foreclosure, respectively.[47] (See Figure 4.) Among Asian borrowers, 6.6 percent have lost their home to foreclosure. For non-Hispanic whites, the foreclosure rate is 5 percent—although this, too, is extremely high when compared to historical levels, it is approximately half the rate of African Americans and Latinos.

Equally troubling is the large share of borrowers of color who are still in distress. Among Latino and African-American households, an additional 14 percent of loans were seriously delinquent, compared with 6.8 percent for non-Hispanic whites. It is unlikely that all of these delinquencies will result in foreclosure, but given that the Mortgage Bankers Association data showed that delinquencies ticked upwards in the first quarter of 2011, it is quite possible that nearly 25 percent of loans to African-American and Latino borrowers will end in foreclosure during this crisis.

Figure 4: Rates of Completed Foreclosures and Serious Delinquencies by Race/Ethnicity (2004-2008 Originations)



When we examine foreclosure patterns at the metropolitan level, we find significant variations in the locations where borrowers of color have been the most affected. (See Table 2.1 in Appendix 2.) For example, more than one third of African-American borrowers in Detroit have already lost their home to foreclosure—a staggering statistic for a city that once had one of the highest African-American homeownership rates in the country.[48] African Americans also have experienced very high rates of foreclosure in areas that saw large price declines, such as Riverside-San Bernardino and Phoenix.

The high foreclosure rates for Latinos result from two distinct issues. First, like African Americans, Latinos were disproportionately targeted by subprime lenders. Therefore, within given geographic areas, Latinos often have relatively higher foreclosure rates. In Washington, D.C., for example, the Latino foreclosure rate is three times the metro-wide average. Second, Latino borrowers tend to be concentrated in cities in the sand states, such as California, Nevada and Florida, which have among the highest overall foreclosure rates in the country.

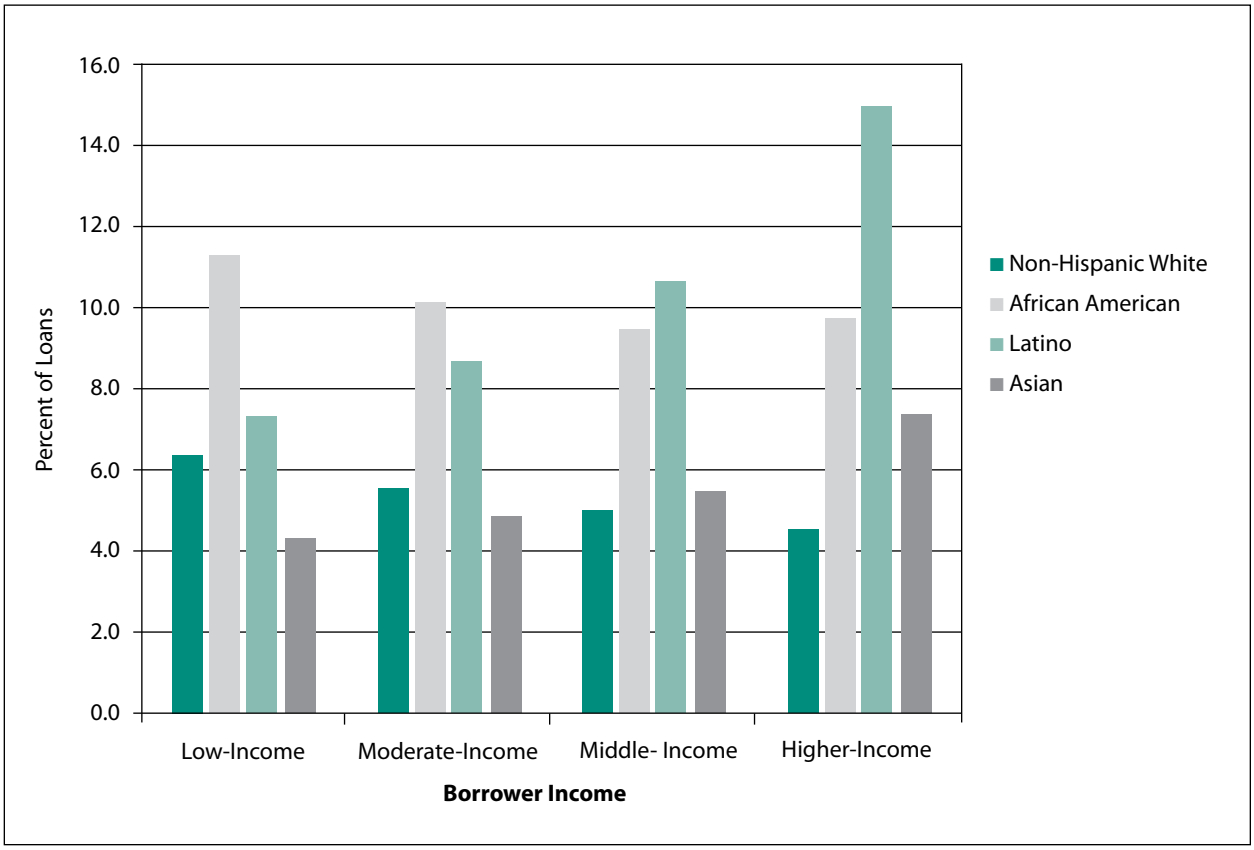
The metropolitan data also show that while Asian homeowners generally have fared better than African Americans and Latinos, in some markets the foreclosure rate for Asians is significantly higher than the metropolitan average, including in Minneapolis-St. Paul and Sacramento.

Finding #4: Racial and ethnic differences in foreclosure rates persist even after accounting for differences in borrower incomes. Low- and moderate-income African Americans and middle- and high-income Latinos have experienced the highest foreclosure rates.

Importantly, we find that the differences in foreclosure rates among African Americans, Latinos and non-Hispanic whites are not simply the result of income disparities. As shown in Figure 5, the racial and ethnic disparities in foreclosure rates persist even within income groups. For example, the foreclosure rate for low- and moderate-income African Americans is approximately 1.8 times higher than it is for low- and moderate-income non-Hispanic whites. The gap is smaller for Latinos, especially among low-income households, but even among low-income Latinos the foreclosure rate is 1.2 times that of low-income whites. Low- and moderate-income Asian borrowers have a lower foreclosure rate than lower-income non-Hispanic whites, but the pattern is reversed among middle- and higher-income Asians.

Particularly striking are the high rates of foreclosure among middle- and higher-income African-American and Latino borrowers. Approximately 10 percent of higher-income African Americans and 15 percent of higher-income Latinos have lost their home to foreclosure, compared with 4.6 percent of higher-income non-Hispanic whites.

Figure 5: Rates of Completed Foreclosures by Borrower Race/Ethnicity and Income (2004-2008 Originations)



Note: Low-income refers to borrowers at 50% below area median income (AMI), moderate-income refers to borrowers at 50-80% of AMI, middle-income refers to borrowers at 80-120% of AMI, and higher-income refers to borrowers at 120% or above AMI.

Interestingly, the data also show that the relationship between income and foreclosure rate varies across different racial and ethnic groups. Among non-Hispanic whites, the completed foreclosure rate decreases as income goes up. For African Americans, the foreclosure rate is also highest for low-income borrowers, but there is not much variation across income groups. However, the pattern is reversed among Asian and Latino homeowners, with middle-and higher-income borrowers experiencing the highest rates of foreclosure for these groups. This may be due to the fact that Latino and Asian borrowers were concentrated in boom markets with higher-than-average house prices, where they were particularly vulnerable to being targeted for hybrid and option ARMs as well as other risky loan products.[49]

Finding #5: In addition to receiving a higher proportion of higher-rate loans, African Americans and Latinos also were much more likely to receive loans with other risky features, such as hybrid and option ARMs and prepayment penalties. Disparities in the incidence of these features are evident across all segments of the credit spectrum, and are particularly pronounced for minority borrowers who received a loan from a mortgage broker.

While income cannot account for the racial and ethnic disparities in foreclosures, it appears that loan product can explain at least part of it. We find that borrowers in minority groups were much more likely to receive loans with product features associated with higher rates of foreclosures, specifically higher interest rates, hybrid and option ARMs, and prepayment penalties. Table 2 below shows the disparities in the incidence of receiving a loan with a risky product feature (measured as a ratio of the incidence compared to non-Hispanic whites). African Americans and Latinos were 2.8 and 2.2 times as likely, respectively, to receive a higher-rate loan as whites, which is consistent with previous research on the distribution of higher-rate lending. We also find that the incidence of hybrid and option ARMs and loans with prepayment penalties is much higher for borrowers of color, including Asian borrowers.

Table 2: Incidence and Increased Incidence (Disparity Ratio) of High-Risk Loan Features by Race/Ethnicity (2004–2008 Originations)

	Incidence of High-Risk Loan Features				Disparity Ratio (versus Non-Hispanic Whites)			
	One or More High-Risk Feature	Higher-Rate	Hybrid or Option ARM	Prepayment Penalty	One or More High-Risk Feature	Higher-Rate	Hybrid or Option ARM	Prepayment Penalty
Non-Hispanic White	38.2	12.5	21.5	12.3	NA	NA	NA	NA
African American	62.3	35.3	32.0	24.8	1.6	2.8	1.5	2.0
Latino	61.9	27.9	37.1	28.5	1.6	2.2	1.7	2.3
Asian	48.3	9.8	33.5	15.6	1.3	0.8	1.6	1.3

Note: We define "hybrid" and "option" ARMs as loans with any one of the following characteristics: ARMs with interest rate resets of less than 5 years, negative amortization, or interest-only payment schedules. "Higher-rate" is defined as first-lien loans for which the APR spread was 300 basis points or more above Treasuries of comparable maturity. The following loan features are defined as high risk: hybrid and option ARMs, prepayment penalties, or higher interest rates.

Particularly troublesome is the fact that these high disparities are evident even within credit ranges. In fact, as Table 3 below shows, as we move up the credit spectrum, the disparities in the incidence of loans with risky features actually increases. For borrowers with a FICO score of over 660, for example, 21.4 percent of African-American borrowers and 19.3 percent of Latino borrowers received a higher-rate loan, 3.5 and 3.1 times the incidence of white borrowers. This increased disparity is much higher than among borrowers with FICO scores of less than 580, where the incidence of higher-rate lending among African Americans and Latinos was 1.2 and 1.1 times that of whites, respectively. We also find that, while Asian borrowers were no more likely than non-Hispanic whites to receive a higher-rate loan, they did receive a greater share of loans with prepayment penalties and loans with non-traditional adjustable interest rate features.

Table 3. Incidence and Disparities of High-Risk Loan Features by Race/Ethnicity (2004-2008 Originations)

		Incidence of High-Risk Loan Features			Disparity Ratio (versus Non-Hispanic Whites)		
		Higher-Rate	Hybrid or Option ARM	Prepayment Penalty	Higher-Rate	Hybrid or Option ARM	Prepayment Penalty
FICO < 580	Non-Hispanic Whites	50.2	52.5	52.0	NA	NA	NA
	African American	61.3	54.1	50.7	1.2	1.0	1.0
	Latino	53.3	59.5	59.5	1.1	1.1	1.1
	Asian	42.9	69.5	65.5	0.9	1.3	1.3
580 <= FICO < 660	Non-Hispanic Whites	25.1	28.1	25.1	NA	NA	NA
	African American	41.8	36.5	31.9	1.7	1.3	1.3
	Latino	38.9	44.1	39.8	1.6	1.6	1.6
	Asian	26.0	47.1	36.8	1.0	1.7	1.5
FICO >= 660	Non-Hispanic Whites	6.2	17.9	6.7	NA	NA	NA
	African American	21.4	24.0	14.3	3.5	1.3	2.1
	Latino	19.3	33.1	21.7	3.1	1.8	3.2
	Asian	5.9	30.5	11.0	1.0	1.7	1.6

Note: We define "hybrid" and "option" ARMs as loans with any one of the following characteristics. ARMs with interest rate resets of less than 5 years, negative amortization, or interest-only payment schedules. "Higher-rate" is defined as first-lien loans for which the APR spread was 300 basis points or more above Treasuries of comparable maturity.

We also find evidence that, for borrowers of color, obtaining a loan through a mortgage broker increased the likelihood of receiving a loan with higher-risk features, even after accounting for borrower credit scores. Table 4 shows the incidence of risky lending by borrower race/ethnicity and whether or not the loan was originated through a mortgage broker.[50] For African Americans with a credit score of over 660, for example, 37.9 percent who used a mortgage broker received a loan with at least one risky product feature, significantly higher than the 30.2 percent of African-American borrowers who did not use a broker. The largest difference is observed for Latino borrowers with high credit scores: 43 percent of Latinos whose loan was originated by a mortgage broker received a loan with at least one risky product feature, compared to 30.3 percent who did not use a broker. In contrast, non-Hispanic whites who used a mortgage broker only saw a slightly higher incidence of receiving a loan with a risky feature.

Table 4: Incidence and Disparities of High-Risk Loan Products, by Borrower FICO and Mortgage Broker Channel (2004-2008 Originations)

		Incidence of Loans with One or More High-Risk Loan Feature		Disparity Ratio (Ratio: Broker vs Non-Broker)
		Broker	Non-Broker	
FICO < 580	Non-Hispanic Whites	50.0	48.4	1.03
	African American	54.3	48.1	1.13
	Latino	53.0	45.1	1.18
	Asian	64.1	53.2	1.20
580 <= FICO < 660	Non-Hispanic Whites	29.1	28.9	1.01
	African American	41.2	35.6	1.16
	Latino	47.9	34.7	1.38
	Asian	45.1	35.6	1.27
FICO >= 660	Non-Hispanic Whites	22.5	21.3	1.06
	African American	37.9	30.2	1.25
	Latino	43.0	30.3	1.42
	Asian	34.5	27.8	1.24

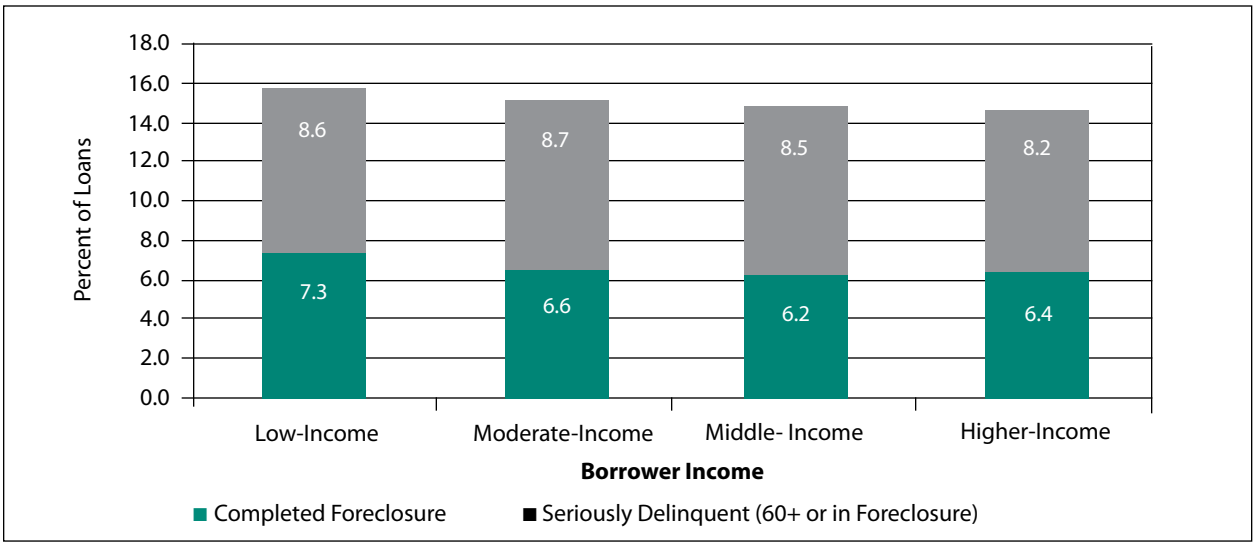
Note: The following loan features are defined as high-risk: hybrid and option ARMs, prepayment penalties, or higher interest rates.

While a full regression analysis of all underwriting and pricing features is beyond the scope of this paper, these figures do provide further evidence that minority borrowers were disproportionately targeted for mortgage products that were inherently more difficult to sustain, which has resulted in higher foreclosure and serious delinquency rates in communities of color.

Finding #6. The foreclosure crisis has hit low- and moderate-income borrowers hardest in weak and stable housing markets, while higher-income borrowers have been most affected in the "boom and bust" housing markets.

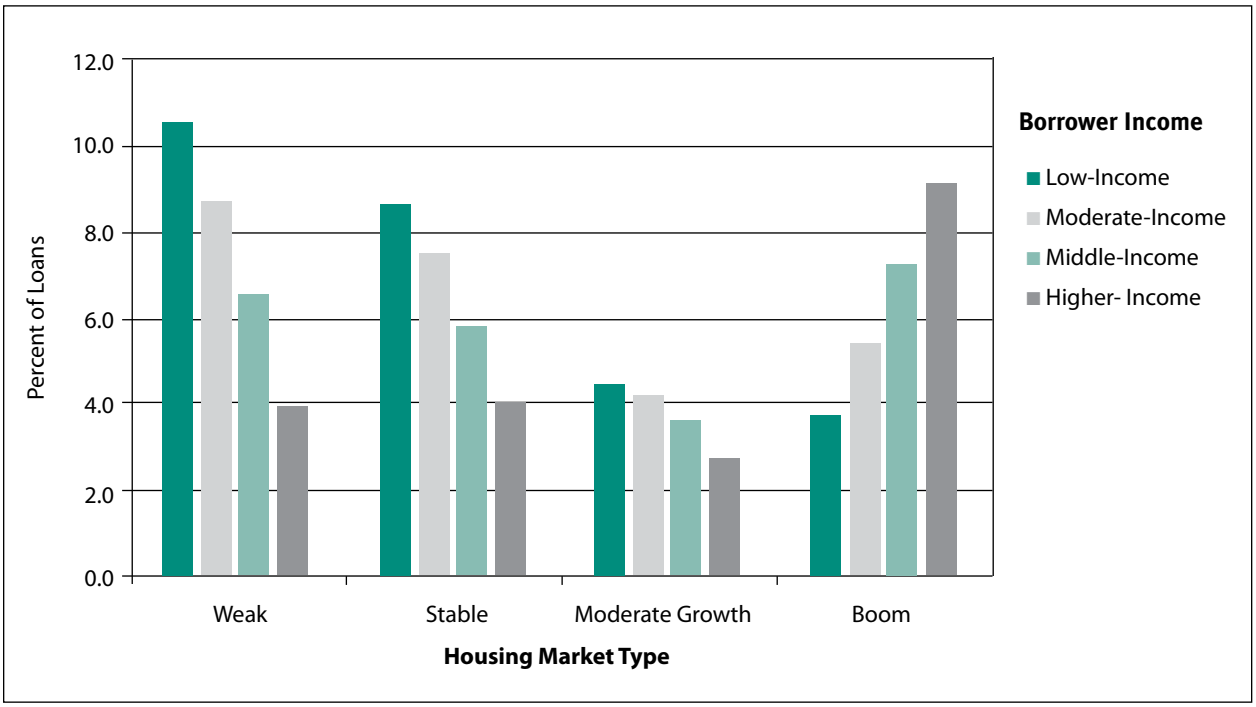
While racial and ethnic disparities in foreclosure rates are particularly distinct, low-income homeowners also have been disproportionately affected by the foreclosure crisis, although in the aggregate the differences are smaller than the differences by race and ethnicity. Approximately 7.3 percent of low-income and 6.6 percent of moderate-income borrowers have already lost their home to foreclosure, compared with 6.2 percent of middle-income borrowers and 6.4 percent of higher-income borrowers. (See Figure 6.)

Figure 6. Rates of Completed Foreclosures and Serious Delinquencies by Borrower Income (2004 – 2008 Originations)



Note: Low-income refers to borrowers at 50% below area median income (AMI), moderate-income refers to borrowers at 50-80% of AMI, middle-income refers to borrowers at 80-120% of AMI, and higher-income refers to borrowers at 120% or above AMI.

Figure 7: Rates of Completed Foreclosures by Borrower Income and Housing Market Type, 2004-2008 Originations



Note: Low-income refers to borrowers at 50% below area median income (AMI), moderate-income refers to borrowers at 50-80% of AMI, middle-income refers to borrowers at 80-120% of AMI, and higher-income refers to borrowers at 120% or above AMI. For a listing of states within each housing market type, please see Table 1.3 in Appendix 1.

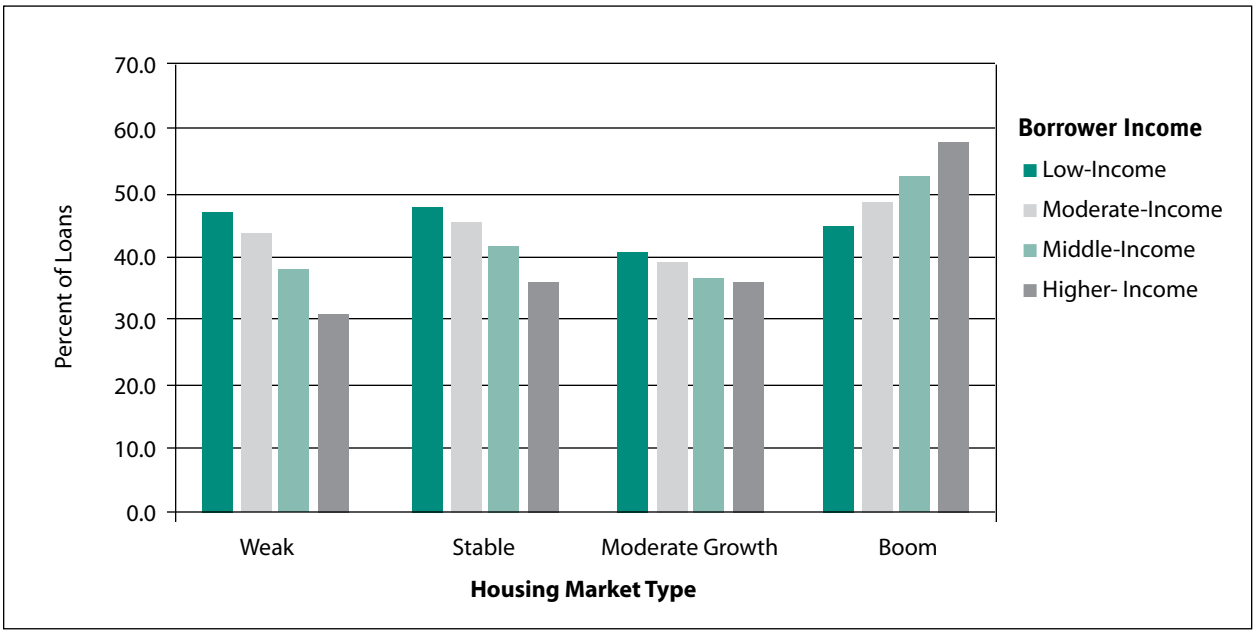
While overall the differences in delinquencies and defaults between income groups seem modest, separating the analysis by different housing market types yields more striking results. In Figure 7, we look at the distribution of foreclosures by borrower income and housing market type. For this analysis, we categorize regional housing markets as either weak, stable, moderate, or booming based on state-level house price appreciation trends between 2000 and 2005.[51]

We find that in areas with weak house price appreciation, the impact of foreclosures has fallen disproportionately on lower-income borrowers. In these communities, the foreclosure rate among low-income borrowers is 2.8 times that of higher-income borrowers. Stable and moderate growth markets also have foreclosure rates that decline as incomes rise. This contrasts with the experience of borrowers in boom market areas, where middle- and higher-income borrowers have experienced the highest foreclosure rates. While these borrowers may have had higher incomes (with a median of $61,000 for middle-income borrowers and $108,000 for higher-income borrowers), the extremely high cost of housing in these boom markets, even for modest homes[52] suggests that the majority of these borrowers were not the very wealthy buying mansions, but rather working families aspiring to homeownership and the middle class.

Table 2.2 in Appendix 2 presents these same statistics for selected metropolitan areas. As the national statistics suggest, low- and moderate-income borrowers have been most affected in cities such as Detroit, Cleveland, and St. Louis. By contrast, in boom-market metropolitan areas located in California, Nevada and Arizona, foreclosure rates are highest among middle- and higher-income borrowers.

To better understand these patterns in loan outcomes, we explored differences in the incidence of high-risk products received by different income groups in the different types of housing markets. Figure 8 presents data, by borrower income and housing market type, on the incidence of loans with one of any of the following risky features: hybrid or option ARMs, prepayment penalties, or higher interest rates. The pattern mirrors that of Figure 7, providing further evidence of a link between loan type and foreclosure rates. While in weak market areas, low-income and moderate-income families have the highest incidence of mortgages with at least one high-risk feature, the pattern is reversed in boom markets. In fact, a slightly smaller percentage of low-income borrowers in boom areas (45.3 percent) received a loan with any risky feature than low-income borrowers in weak markets (47.3 percent).

Figure 8: Percent of Loans with One or More High-Risk Loan Feature, By Borrower Income and Housing Market Type (2004-2008 Originations)



Note: Low-income refers to borrowers at 50% below area median income (AMI), moderate-income refers to borrowers at 50-80% of AMI, middle-income refers to borrowers at 80-120% of AMI, and higher-income refers to borrowers at 120% or above AMI. The following loan features are defined as high-risk: hybrid and option ARMs, prepayment penalties, or higher interest rates.

Drilling down to the specific types of high-risk lending by market yields additional information. (See Table 5.) Low- and moderate-income borrowers were more likely to get higher-rate loans—the only marker for subprime loans in the HMDA data—across housing market types, but this is not the case for loans with other risky features. The pattern for hybrid and option ARMs is especially striking: while only 20 percent of lower-income borrowers in boom markets received a hybrid or option ARM, nearly 42 percent of higher-income borrowers did. Also interesting is the fact that in boom housing markets, a smaller share of low-income borrowers received higher-rate loans: 19.5 percent compared with 28 percent in weak housing market areas.

While still exploratory, this analysis suggests that there were important interactions between housing markets and how different loan product types were marketed that influenced who received risky loans and, consequently, the foreclosure rates for different demographic groups in different parts of the country.

Table 5. Incidence of High-Risk Loan Features by Borrower Income and Market Type (2004-2008 Originations)

		Incidence of High-Risk Loan Features			
Housing Market Type	Borrower Income	One or More High-Risk Feature	Higher-Rate	Hybrid and Option ARM	Prepayment Penalty
Weak	Low-Income	47.3	28.2	17.6	17.4
	Moderate-Income	43.7	24.4	17.7	16.0
	Middle-Income	38.6	19.9	16.4	13.5
	Higher-Income	31.1	12.1	15.2	9.4
Stable	Low-Income	47.9	26.0	20.4	13.9
	Moderate-Income	45.7	22.4	21.8	12.5
	Middle-Income	42.1	18.9	21.1	10.6
	Higher-Income	36.2	11.5	20.9	7.7
Moderate Growth	Low-Income	40.8	20.2	16.8	15.6
	Moderate-Income	39.5	17.8	19.4	15.7
	Middle-Income	37.3	15.5	19.9	14.3
	Higher-Income	36.2	10.9	22.1	11.4
Boom	Low-Income	45.3	19.5	20.1	18.0
	Moderate-Income	49.1	19.8	25.7	20.2
	Middle-Income	52.6	19.2	31.8	22.3
	Higher-Income	58.3	15.3	41.7	23.4

Note: Low-income refers to borrowers at 50% below area median income (AMI), moderate-income refers to borrowers at 50-80% of AMI, middle-income refers to borrowers at 80-120% of AMI, and higher-income refers to borrowers at 120% or above AMI. The following loan features are defined as high risk: hybrid and option ARMs, prepayment penalties, or higher interest rates.

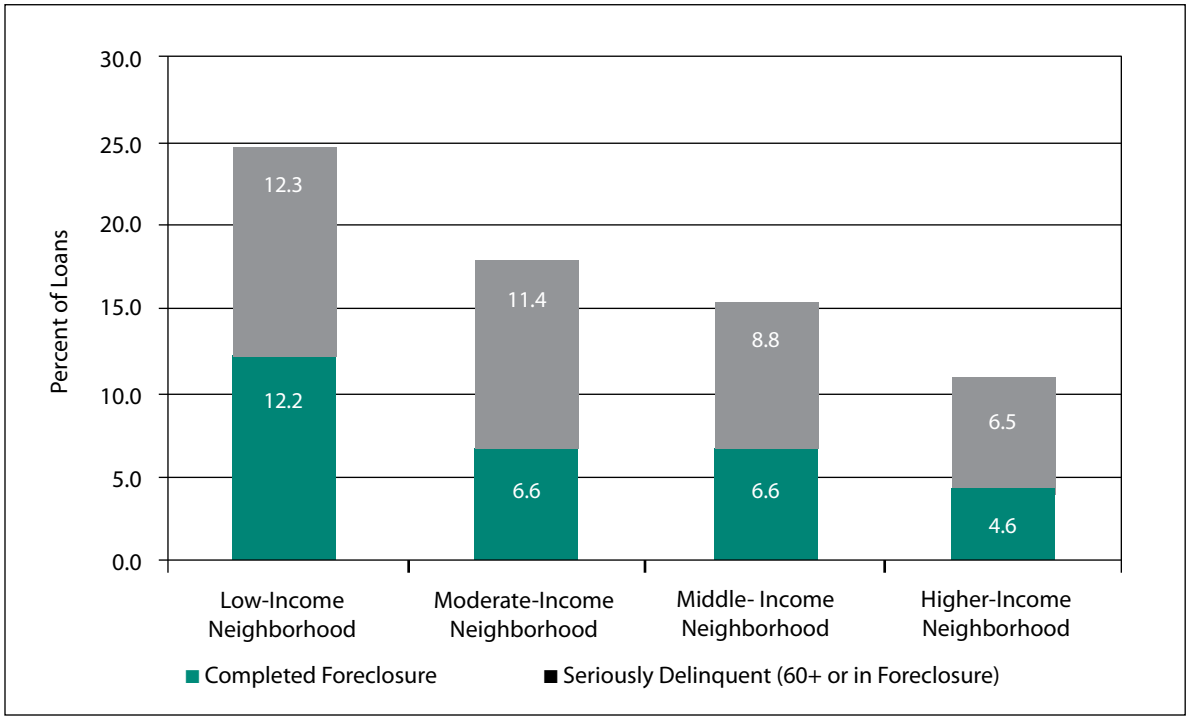
Finding #7. Across the country, low- and moderate-income neighborhoods and neighborhoods with high concentrations of minorities have been hit especially hard by the foreclosure crisis.

In addition to looking at the impact of the foreclosure crisis by borrower demographics, we also examined which types of neighborhoods have seen the most delinquencies and defaults. Neighborhoods with high concentrations of foreclosures lose tax revenue and incur the financial and non-financial costs of abandoned properties and neighborhood blight, and homeowners living in close proximity to foreclosures typically lose significant wealth as a result of depreciated home values.[53]

To what extent have foreclosures fallen disproportionately on low-income and minority neighborhoods? To answer this question, we group neighborhoods by census tract into four income categories (low, moderate, middle and higher)[54] and four minority status quartiles, based on the percentage of residents that are not non-Hispanic white.[55]

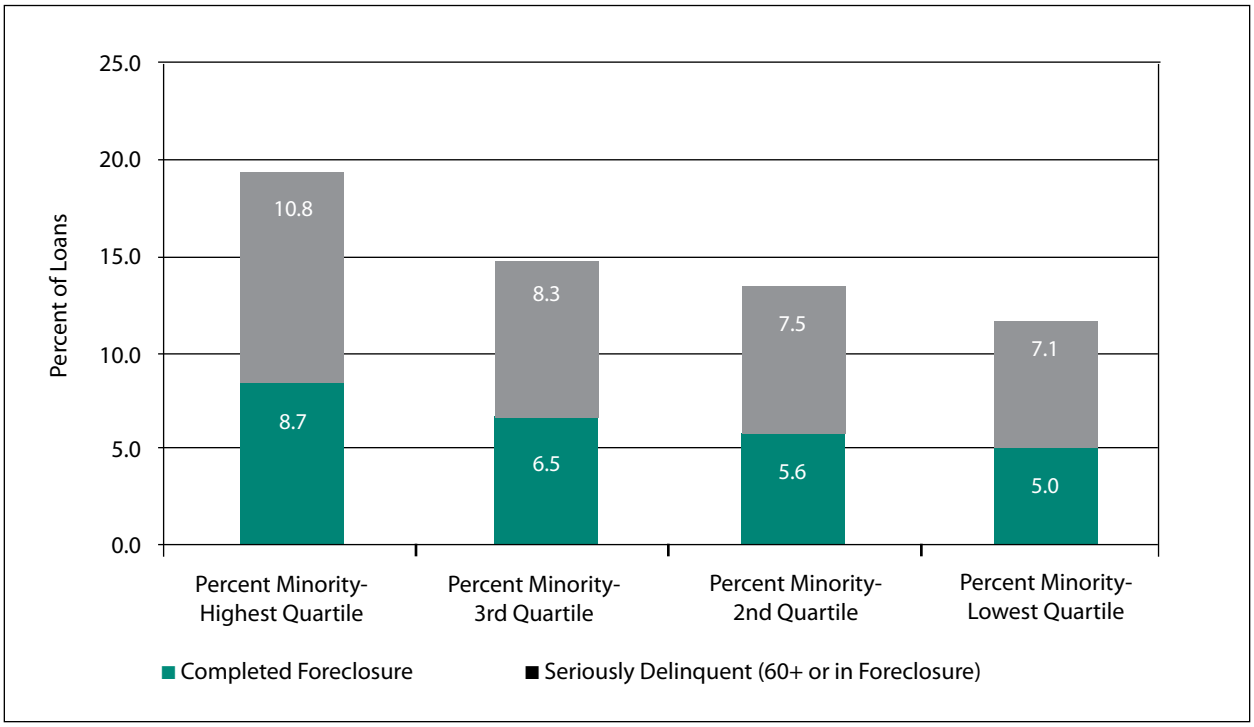
The findings from this analysis are presented in Figures 9 and 10, and show the impact of the foreclosure crisis on lower-income neighborhoods and neighborhoods of color. In low-income neighborhoods, the foreclosure rate is 2.6 times that of higher-income neighborhoods, with approximately 12 percent of loans in foreclosure and another 12 percent seriously delinquent. Similarly, the foreclosure rate in neighborhoods with the highest concentration of minority residents is 1.7 times higher than in neighborhoods with the lowest concentration of minorities. In high-minority neighborhoods, 8.7 percent of loans taken out between 2004 and 2008 have resulted in foreclosure, and another 10.8 percent are at risk of default.

Figure 9: Rates of Completed Foreclosures and Serious Delinquencies by Neighborhood Income (2004-2008 Originations)



Note: Low-income neighborhoods are those for which the median income for the census tract is less than 50 percent of the metropolitan statistical area (MSA) median income; moderate-income — at least 50 percent and less than 80 percent of the MSA median income; middle-income — at least 80 percent and less than 120 percent of the MSA median income; and higher-income — at least 120 percent of MSA median income.

Figure 10: Completed Foreclosures and Seriously Delinquent Loans by Neighborhood Minority Status (2004-2008 Originations)



Once again, we can see the strong link between mortgages with risky product features and foreclosures. As shown in Table 6 below, low-income neighborhoods had the highest incidence of mortgages that were hardest to sustain (68.1 percent), whereas the incidence of higher-risk mortgages declines to 41.1 percent for higher-income neighborhoods. Similarly, neighborhoods with the highest concentrations of minorities experienced the highest proportion of higher-risk loans. Fifty-four percent of the loans in the neighborhoods with the highest proportion of minority residents had at least one high-risk feature, compared to 40.4 percent of those in neighborhoods with the lowest proportion of minorities. These findings build on existing research showing that these areas were targeted by subprime lenders during the boom[56] and documents the consequences of weak consumer protection during this time period and its disproportionate impact on low-income neighborhoods and neighborhoods of color.

Table 6: Incidence of High-Risk Loans by Neighborhood Type (2004-2008 Originations)

Neighborhood Income Category	Incidence of Loans with One or More High-Risk Feature	Neighborhood Minority Status Category	Incidence of Loans with One or More High-Risk Feature
Low-Income	68.1	Highest Quartile	53.9
Moderate-Income	56.9	3rd Quartile	44.9
Middle-Income	44.1	2nd Quartile	41.8
Higher-Income	41.1	Lowest Quartile	40.4

Note: The following loan features are defined as high risk: hybrid and option ARMs, prepayment penalties, or higher interest rates.

The implications of these neighborhood foreclosure patterns will be felt by metropolitan areas throughout the country. (See Tables 2.3 and 2.4 in Appendix 2.) In Cleveland's low-income neighborhoods, a quarter of borrowers have already lost their home to foreclosure, threatening the viability of these neighborhoods. While much has been written about Cleveland, low-income neighborhoods in other cities such as Atlanta, Las Vegas and Minneapolis-St. Paul also have completed foreclosure rates of over 20 percent. Such high levels of concentrated foreclosures will place a significant burden on these neighborhoods and also the wider communities, which, without substantial interventions, will almost certainly suffer reduced revenues for vital city services, higher rates of crime, and myriad other adverse effects. Furthermore, in once fast-growing metropolitan areas such as Phoenix and Riverside/San Bernardino, the more limited governmental and non-profit infrastructure and experience related to vacant properties may make it especially difficult to respond to the inventory of bank-owned homes.[57]

V. CONCLUSION

The United States is in the midst of an unprecedented foreclosure crisis, one that shows little sign of abating. In fact, our findings suggest that we are not even halfway through the crisis, as millions of families remain at risk of foreclosure. Our report shows that Americans of every demographic group—all incomes, races, and ethnicities—have been affected, further undermining the notion that policies used to promote homeownership in disadvantaged communities are to blame for the crisis. Such narratives, while providing convenient scapegoats for opponents of financial regulation, are simply belied by the data.

Nevertheless, our analysis also shows that low-income and minority borrowers and neighborhoods have been disproportionately impacted by foreclosures and that this reflects the higher incidence of higher-risk products received by these groups. For communities of color in particular, the foreclosure crisis will have long-term consequences for wealth and opportunity. A recent study by the Pew Research Center found that the wealth gap between whites and African Americans is at a historical high and attributes this increase in inequality, at least in part, to the housing crisis. The average white household now has twenty times more wealth ($113,149) than the average African-American ($5,667) and Latino ($6,325) household.[58] The ongoing foreclosure crisis will only exacerbate this growing inequality, as more African-American and Latino households will see their assets erode, either directly through foreclosure or through the loss of home equity resulting from concentrated foreclosures in their neighborhoods.

Adequately addressing the crisis will require policy responses on a variety of levels. In the short term, preventing additional foreclosures must remain at the top of the policy agenda. The policy choices we make now regarding loan servicing and loan modifications have the potential to influence both the duration and severity of the crisis.

Over the longer term, policymakers will need to consider how to rebuild the mortgage credit market, recognizing not only the current challenges but also the broader historical context of access to credit in this country. For decades, the predominant fair lending issue was basic access to mortgage credit for groups excluded from the economic mainstream. Whether through overt redlining or other forms of discriminatory underwriting, lower-income and minority borrowers faced barriers to obtaining home loans. In response to discriminatory practices, in 1975 Congress enacted the Home Mortgage Disclosure Act (HMDA). Shortly thereafter, Congress passed the Community Reinvestment Act (CRA) to encourage lending in previously ignored communities, and amended the Equal Credit Opportunity Act (ECOA) to prohibit lending discrimination based on race and national origin, among other criteria. In the early 1990s, President George H. W. Bush signed the Housing and Community Development Act of 1992, which established "affordable housing goals" for the GSEs. While these policies did not by any means eliminate discrimination in home mortgage lending or erase homeownership disparities among demographic groups, they established a regulatory framework that recognized the importance of fair access to mortgage credit.

Over the past two decades, the revolution in mortgage finance, including the widespread adoption of credit scoring, automatic underwriting, and innovations in the secondary market, drastically altered the landscape of the mortgage market. Access to credit was no longer a major threat to lower-income and minority borrowers, but the terms of credit became a new, insidious issue. The explosion of exotic loan products and the fact that they were so frequently underwritten without regard for borrowers' ability to repay them, undermined homeownership by moving away from proven wealth-building

loan features, such as full amortization and fixed interest rates.[59] In this new environment, the policies designed to expand access to mortgage credit, including the CRA and the GSEs' affordable housing goals, became less relevant, with both losing substantial market share at the peak of the bubble.[60] Instead, a "dual mortgage market" arose where lower-income and minority borrowers and communities were served primarily by mortgage brokers and independent mortgage companies operating largely outside existing consumer protections. These lenders had financial incentives to steer large numbers of borrowers into riskier mortgage products without regard for their ability to repay.

The negative consequences of this subprime boom have become glaringly apparent, and our research shows that the foreclosure crisis has fallen disproportionately on low-income and minority borrowers and neighborhoods. However, in our effort to prevent a similar crisis from occurring again, it is critical that we not return to an environment where lower-income and minority families are denied access to reasonably-priced mortgages. Stability in the mortgage market should be a top priority in federal housing finance policy, but so, too, should fairness and equal access to credit. Therefore, reforms—whether regulatory or legislative in nature—must prevent unfair and abusive lending practices like those that caused the crisis. At the same time, reforms must recognize the importance of homeownership as a wealth-building mechanism and foothold into the middle class, and facilitate a stable supply of mortgage credit for all qualified borrowers.

APPENDIX 1. DATA AND METHODOLOGY

The three databases in the analysis are Home Mortgage Disclosure Act (HMDA), BlackBox (BBx) and Lender Processing Services (LPS). HMDA is considered to be the "universe" of loans, as federal law requires that the majority of mortgage originations be reported in HMDA.[61] To obtain information on loan performance, CRL purchased data from LPS and BlackBox, which are complementary, proprietary loan-level databases. BlackBox data covers over 90 percent of non-agency pools, including jumbo, subprime and Alt-A loans, and includes approximately 7,600 deals, over 5,700 of which are active.[62] LPS, which uses loan-level data collected from servicers, is not limited to private-label securities and is frequently used by researchers studying mortgage performance. We estimate that LPS has coverage equal to 66 percent of the first-lien mortgages reported to federal regulators in HMDA data from 2005 through 2008.

Because we consider HMDA to be our universe of loans, our first step in merging these databases was to assign each HMDA loan a unique identifier. Next, we match loans from HMDA to loans in LPS by geography and loan amount. Because HMDA reports data by census tract and LPS by zip code, we created a "cross-walk" file using spatial location within ARCGIS, a mapping software program. To create the crosswalk, for each census tract, we estimate the share of housing units that are in the overlapping zip code. These become our geographic weights, which we use to represent the probability that a loan is, in fact, in that zip code. For loans that are in tracts that overlap multiple zip codes, we create additional HMDA records for each potential zip code that the loan could be in. The result of this step in matching HMDA to LPS is, in essence, a Cartesian product, where every HMDA record with a given loan amount-zip code combination is allowed to match to every LPS record with the same combination. We then filter out those matches where other common fields between the two databases (e.g., loan purpose and loan type[63]) are inconsistent with each other.

After matching HMDA to LPS in this manner, we separately match HMDA to BlackBox using the same methodology. The resulting two combined datasets (i.e. HMDA-LPS and HMDA-BlackBox) are then appended, and a "matching weight" is assigned to each loan. The matching weight is given based on the number of times a unique HMDA loan was matched to loans in LPS and BlackBox.[64] A final weight is calculated by multiplying the geographic weight by the matching weight. Formally, the weights are developed as follows. for a HMDA loan A in census tract X, suppose there are total of n LPS/BBx loans matched to A. For the ith loan matched to HMDA loan A, suppose it is from zip code Y. X and Y overlap at Z, as illustrated in Figure A1.

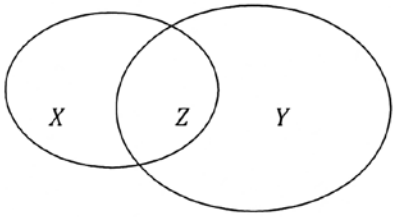


FIGURE A1. CENSUS TRACT *X* OVERLAPS WITH ZIP CODE *Y* AT *Z*

Let X, Y and Z also denote their area size. The probability that the HMDA loan A is in Z is given by

$$P_A=Z/X,$$

assuming that A has an equal chance of being located anywhere in X. Similarly, the probability that the i^{th} loan is in Z is given by

$$P_i=Z/Y.$$

The joint probability that both the HMDA loan A and the i^{th} loan of LPS/BBx are in Z is given by

$$P_{iA}=P_A*P_i=Z^2/XY$$

The probability that HMDA loan A and the i^{th} loan are the true match is given by

$$Q_{iA}=\frac{P_{iA}}{\sum_{i=1}^{n}P_{iA}}$$

For HMDA loan A, any supplemental information obtained from the i^{th} loan of LPS/BBx is weighted by Q_{iA}. This final weight is used in the analysis.

The advantage of using this probabilistic matching technique is that we do not lose the observations that would need to be dropped if we insisted on unique matches between the databases or on excluding loans that were in census tracts with overlapping zip codes. Dropping observations would increase the likelihood of introducing bias. While we undoubtedly have false positive matches in our sample, the weights that are assigned to these loans diminish their effect and should not have any biased direction.

Table 1.1 shows our match rate for the three datasets. Of HMDA loans that matched, approximately 75 percent were uniquely matched, meaning that there was only 1 loan in either LPS or BlackBox that successfully matched to a HMDA loan with the same characteristics. Around 15 percent had two matches to each HMDA Loan, and between 3.7 to 4.8 percent of the loans had 3 matching loans. Less than 3.5 percent of HMDA loans were matched to more than 3 loans in BlackBox or LPS.[65] We do find differences between loans that were uniquely matched to one HMDA loan and those that have multiple matches, confirming that limiting the sample to uniquely matched loans would introduce some bias into the results. Loans with more than one match are slightly more likely to be conventional loans (as opposed to FHA/VA) and used for refinance. They are also more likely to be loans originated to borrowers of color (32.4 percent for multiple matches compared with 26.3 percent for unique matches), and more likely to be in foreclosure or at imminent risk of default (15.3 percent compared to 14.4 percent). As a result, we believe that our probabilistic weighting approach leads to less biased results than focusing solely on unique matches.

Table 1.1. Distribution of Number of LPS or BlackBox loans matched per HMDA loan

# of LPS or BlackBox Loans matched per HMDA loan	% of all HMDA loans matched with BlackBox	% of all HMDA loans matched with LPS
1	79.83	74.50
2	14.39	17.22
3	3.72	4.83
4+	2.07	3.45

Note: The above distribution only accounts for the merged sample. 36.7% of HMDA loans did not match to any BlackBox or LPS loan. There are multiple reasons why a HMDA loan might not match any loan in BlackBox or LPS, including HMDA's more complete market coverage, missing information on matching variables, and reporting errors in either HMDA or LPS/BBx.

Table 1.2 presents the descriptive statistics for the data in our sample. Overall, the data show that the merged sample is largely representative of the mortgage market between 2004 and 2008. The sample shows a distribution of loan purpose (51 percent are refinance loans and 49 percent are purchase loans), that is consistent with the large number of refinances that occurred over this time period. Our racial distribution is also consistent with HMDA data: non-Hispanic whites comprise the largest share of borrowers, at 61.3 percent, followed by Latinos at 10.7 percent, African Americans at 8.1 percent, and Asians at 4.5 percent. Approximately 22.4 percent of the loans in the sample are "higher-priced" as indicated in the HMDA data. Of all the loans in the sample, 42.8 percent were paid off by February 2011, 6.4 percent had completed foreclosure, and 8.3 percent were 60+ days delinquent or in the foreclosure process.

Table 1.2. Descriptive Statistics of Merged HMDA/LPS/BlackBox Dataset

		Origination Year				
	Full Sample	2004	2005	2006	2007	2008
Total Number of Loans in Sample	27,117,189*	7,175,942	7,221,122	4,904,838	4,612,297	3,202,990
Loan Purpose (%)						
Purchase	48.4	44.5	47.9	52.1	50.3	50.2
Refinance	51.0	54.9	51.4	47.2	49.1	49.3
Race/Ethnicity of Borrower (%)						
Non-Hispanic White	61.33	57.47	61.20	60.29	63.37	68.93
African American	8.09	7.59	8.35	9.38	8.23	6.48
Latino	10.71	9.92	11.66	12.76	10.48	7.54
Asian	4.54	4.79	4.52	4.31	4.37	4.62
Borrower Income (%)						
Low-Income (less than 50% AMI)	5.79	6.14	5.79	5.62	5.24	6.08
Moderate-Income (50 - 80% AMI)	18.87	18.99	19.10	18.16	18.36	19.86
Middle-Income (80-120% AMI)	26.10	25.15	26.94	25.84	25.78	27.17
Higher-Income (more than 120% AMI)	42.61	36.75	43.10	45.76	46.85	43.68
Loan Characteristics						
Conventional Prime	74.83	73.18	73.26	75.26	83.93	68.35
Alt-A	3.55	4.39	4.99	4.45	1.53	0.00
FHA/VA	12.97	11.00	7.39	7.34	10.23	45.55
Higher-Priced Loan (HMDA)	22.43	11.37	22.66	24.71	14.76	7.34
Average FICO	701	698	692	689	704	723
Average LTV	77	76	77	78	78	76
Average Loan Amount	$241,915	$213,350	$237,712	$249,575	$259,150	$249,788
Loan Performance (%)						
Paid Off	42.8	56.6	43.3	36.0	32.2	36.4
Completed Foreclosures	6.4	4.0	8.1	10.9	6.2	1.6
Seriously Delinquent (60+ Delinquent or in Foreclosure)	8.3	4.0	8.0	12.9	12.4	6.0

* Note: The total number of first-lien owner-occupied HMDA loans for years 2004-2008 was 42,871,874 (36.7% of HMDA loans did not match to any LPS or BlackBox loan. The matched and unmatched HMDA loans look similar across all important dimensions and, therefore, we scale up to reflect all 42.9 million loans when calculating the number of loans that have foreclosed or that are seriously delinquent.

Our classification of housing market types is based on 2000-2005 state-level housing price indices from the Federal Housing Finance Agency. Table 1.3 lists the states included in each category.

Table 1.3: Classification of Housing Market Types

Weak Market States	Indiana, Iowa, Kansas, Kentucky, Michigan, Mississippi, Nebraska, North Carolina, Ohio, Oklahoma, Tennessee, Texas
Stable Market States	Alabama, Arkansas, Colorado, Georgia, Illinois, Louisiana, Missouri, North Dakota, South Carolina, South Dakota, Utah, West Virginia, Wisconsin
Moderate Growth Market States	Alaska, Connecticut, Idaho, Maine, Minnesota, Montana, New Mexico, New York, Oregon, Pennsylvania, Vermont, Washington, Wyoming
Boom Market States	Arizona, California, Delaware, District of Columbia, Florida, Hawaii, Maryland, Massachusetts, Nevada, New Hampshire, New Jersey, Rhode Island, Virginia

APPENDIX 2: TABLES OF COMPLETED FORECLOSURE AND SERIOUS DELINQUENCY RATES FOR SELECTED METROPOLITAN AREAS

Table 2.1: Rates of Completed Foreclosures and Serious Delinquencies for Selected Metropolitan Areas, by Borrower Race and Ethnicity (2004-2008 Originations)

	Share of Loans (Percent)				Completed Foreclosures (Percent)					Seriously Delinquent (Percent)				
	Race/Ethnicity				Race/Ethnicity					Race/Ethnicity				
Metropolitan Areas	Non-Hispanic White	African American	Latino	Asian	Total	Non-Hispanic White	African American	Latino	Asian	Total	Non-Hispanic White	African American	Latino	Asian
Detroit, MI	54.7	28.0	2.3	2.2	22.4	16.0	36.0	26.0	10.9	11.2	8.6	16.6	13.0	5.7
Las Vegas, NV	51.7	5.8	17.3	8.2	16.1	14.3	16.4	20.3	20.2	14.7	13.5	15.2	18.6	15.6
Riverside-San Bernardino, CA	36.1	5.7	30.4	5.5	13.6	11.0	14.5	17.0	15.7	11.1	9.9	12.5	12.6	11.8
Phoenix, AZ	59.5	2.6	17.5	2.8	13.0	11.0	15.4	20.0	15.5	9.3	8.2	11.5	13.1	9.1
Sacramento, CA	52.8	4.9	10.8	9.0	12.5	9.7	17.9	20.7	16.9	9.4	8.7	12.0	11.8	9.7
San Diego, CA	50.4	2.7	17.2	7.9	9.5	7.0	11.6	16.5	10.1	8.5	7.2	11.2	12.2	8.5
Denver, CO	68.7	3.5	11.5	2.6	9.3	6.8	16.9	20.7	9.5	5.2	4.5	8.9	8.5	5.1
Atlanta, GA	51.3	25.0	4.7	4.0	9.2	6.5	14.6	14.7	7.9	9.6	6.5	15.8	13.4	7.0
Miami, FL	15.6	11.4	62.3	1.2	9.0	6.4	8.0	10.2	7.8	23.4	18.0	23.3	25.5	20.1
Oakland, CA	77.4	3.6	2.7	4.1	9.0	6.1	12.7	17.7	7.2	8.3	6.7	11.7	12.1	7.4
Minneapolis-St. Paul, MN	39.2	6.9	14.4	19.6	8.8	7.2	22.0	22.3	17.0	5.8	5.2	11.6	9.5	7.9
Cleveland, OH	71.8	13.1	2.3	1.2	8.2	6.1	18.1	11.1	NA	10.5	8.7	20.1	13.1	6.4
Los Angeles, CA	32.2	7.2	29.7	10.5	6.8	4.7	7.6	9.7	6.4	8.9	7.1	11.0	11.4	7.5
Washington, DC	40.0	24.2	10.3	7.3	6.7	4.2	6.0	20.2	9.1	6.6	4.0	10.4	9.9	6.2
Tampa, FL	64.3	6.8	11.3	2.3	6.7	6.1	8.4	9.7	7.3	15.8	14.6	20.3	22.0	16.1
Houston, TX	47.5	11.5	20.3	6.5	6.6	4.8	12.9	8.4	4.7	7.1	4.9	13.5	10.1	4.2
Dallas, TX	56.6	10.4	13.7	5.3	6.5	4.9	13.7	8.9	3.8	6.3	4.6	13.5	9.1	3.3
St. Louis, MO	72.9	11.4	1.3	1.6	5.7	4.4	14.1	6.5	3.4	5.7	4.6	12.9	6.5	3.0
Chicago, IL	57.5	12.1	14.4	5.6	5.3	3.8	10.2	8.4	4.0	9.4	7.2	15.3	15.0	7.3
Milwaukee, WI	70.5	11.5	5.4	2.1	4.3	2.8	11.1	7.5	5.1	6.6	4.8	15.6	11.1	7.3
Baltimore, MD	58.0	19.8	2.6	3.5	3.0	2.3	4.5	6.0	3.6	6.6	5.0	10.7	10.8	6.2
Seattle, WA	65.3	2.6	3.6	10.3	2.8	2.6	4.5	6.2	3.5	6.2	5.7	10.0	12.6	7.5
Raleigh, NC	66.6	12.3	3.5	3.6	2.7	2.1	6.1	4.7	NA	5.0	3.8	11.4	7.7	2.9
New York, NY	42.6	13.0	12.7	11.4	1.9	1.2	3.4	3.8	1.7	9.7	6.6	17.2	16.2	8.5
Philadelphia, PA	62.2	10.4	3.2	5.5	1.9	1.5	3.7	2.8	1.9	6.2	4.8	13.3	9.6	4.9

Notes: NA=Not available (Data cells with less than 100 loans were suppressed.) Shares of loans originated may not total 100 due to missing data.

Table 2.2: Rates of Completed Foreclosures and Serious Delinquencies for Selected Metropolitan Areas, by Borrower Income (2004-2008 Originations)

	Share of Loans (Percent)				Completed Foreclosures (Percent)					Seriously Delinquent (Percent)				
	Borrower Income Categories				Borrower Income Categories					Borrower Income Categories				
Metropolitan Areas	Low-Income	Moderate-Income	Middle-Income	Higher-Income	Total	Low-Income	Moderate-Income	Middle-Income	Higher-Income	Total	Low-Income	Moderate-Income	Middle-Income	Higher-Income
Detroit, MI	8.1	25.4	29.0	32.9	22.4	30.3	28.5	24.2	14.4	11.2	13.6	13.3	11.8	8.3
Las Vegas, NV	2.9	14.9	29.5	46.3	16.1	6.7	11.0	15.8	18.1	14.7	9.6	12.6	14.9	15.8
Riverside-San Bernardino, CA	1.8	9.5	23.2	61.4	13.6	3.4	4.9	8.9	17.0	11.1	5.0	6.9	9.2	12.7
Phoenix, AZ	4.8	19.8	27.6	41.3	13.0	7.8	12.2	14.8	12.6	9.3	7.2	9.6	10.0	9.1
Sacramento, CA	2.5	13.0	27.4	53.1	12.5	3.5	7.3	12.6	14.2	9.4	4.7	7.1	9.3	10.3
San Diego, CA	1.3	6.5	18.7	69.1	9.5	NA	3.9	7.4	10.7	8.5	2.7	4.9	7.3	9.3
Denver, CO	7.0	24.9	27.5	34.3	9.3	12.2	13.3	9.2	5.4	5.2	5.6	6.2	5.4	4.1
Atlanta, GA	8.7	27.2	26.1	32.7	9.2	11.7	11.5	9.6	6.3	9.6	11.6	11.9	9.8	6.6
Miami, FL	1.0	7.1	20.2	65.9	9.0	NA	3.8	6.4	10.6	23.4	8.8	13.8	19.7	25.9
Oakland, CA	1.9	10.1	24.8	59.2	9.0	1.9	4.4	8.6	10.2	8.3	3.2	6.1	8.3	8.9
Minneapolis-St. Paul, MN	10.1	29.6	29.2	27.3	8.8	8.9	10.9	9.1	6.0	5.8	5.9	6.8	6.0	4.3
Cleveland, OH	10.4	27.1	27.3	30.4	8.2	14.1	10.9	7.6	4.5	10.5	14.0	12.8	10.8	7.0
Los Angeles, CA	0.9	5.3	16.3	73.1	6.8	1.5	1.8	3.4	8.0	8.9	2.8	4.1	6.1	10.0
Washington, DC	6.7	22.6	30.7	34.6	6.7	3.2	5.5	8.0	6.5	6.6	6.2	7.3	7.2	5.7
Tampa, FL	4.9	18.4	26.9	43.7	6.7	4.8	6.1	7.2	6.7	15.8	12.5	15.8	16.9	15.5
Houston, TX	4.5	20.0	26.4	45.0	6.6	8.2	9.1	7.7	4.8	7.1	9.2	9.8	8.8	4.8
Dallas, TX	6.5	20.9	24.6	42.5	6.5	9.9	8.9	7.0	4.4	6.3	9.1	8.7	7.0	4.2
St. Louis, MO	11.8	27.0	26.4	30.5	5.7	10.9	7.3	5.0	2.9	5.7	8.7	7.1	5.6	3.4
Chicago, IL	5.2	21.2	30.4	38.0	5.3	5.4	6.0	6.2	4.3	9.4	9.5	10.8	10.6	7.5
Milwaukee, WI	8.8	25.2	28.7	33.4	4.3	7.7	6.2	4.2	2.2	6.6	10.1	9.0	6.6	4.0
Baltimore, MD	8.1	23.2	28.6	35.2	3.0	3.5	3.0	3.1	2.7	6.6	7.9	7.3	6.8	5.5
Seattle, WA	3.8	19.0	30.6	42.7	2.8	1.9	2.6	3.0	2.8	6.2	4.6	6.1	6.7	6.1
Raleigh, NC	9.4	24.6	25.7	34.4	2.7	4.7	3.6	2.6	1.6	5.0	6.8	6.8	4.7	3.1
New York, NY	0.7	5.2	16.2	72.4	1.9	NA	0.6	1.0	2.2	9.7	4.8	4.8	6.8	10.5
Philadelphia, PA	8.8	21.1	25.7	40.2	1.9	3.3	2.4	1.9	1.3	6.2	10.6	8.1	6.4	4.2

Notes: NA=Not available (Data cells with less than 100 loans were suppressed.) Shares of loans originated may not total 100 due to missing data. Low-income includes borrowers at 50% below area median income (AMI), moderate-income includes borrowers at 50-80% of AMI, middle-income includes borrowers at 80-120% of AMI, and higher-income includes borrowers at 120% or above AMI.

Table 2.3: Rates of Completed Foreclosures and Serious Delinquencies for Selected Metropolitan Areas, by Neighborhood Income (2004-2008 Originations)

	Share of Loans (Percent)				Completed Foreclosures (Percent)					Seriously Delinquent (Percent)				
	Neighborhood Income Categories				Neighborhood Income Categories					Neighborhood Income Categories				
Metropolitan Areas	Low-Income	Moderate-Income	Middle-Income	Higher-Income	Total	Low-Income	Moderate-Income	Middle-Income	Higher-Income	Total	Low-Income	Moderate-Income	Middle-Income	Higher-Income
Detroit, MI	2.2	18.2	40.0	39.6	22.4	37.9	40.4	25.0	10.8	11.2	15.0	15.8	12.9	7.1
Las Vegas, NV	0.2	9.4	43.4	47.0	16.1	22.2	16.2	16.8	15.3	14.7	18.4	15.6	15.3	14.0
Riverside-San Bernardino, CA	1.4	19.2	46.2	33.2	13.6	15.9	15.6	13.9	11.8	11.1	10.7	11.4	11.2	10.8
Phoenix, AZ	1.0	20.8	42.1	36.0	13.0	17.8	18.1	13.7	9.0	9.3	13.9	11.5	9.6	7.5
Sacramento, CA	3.3	16.4	39.0	41.3	12.5	17.9	17.4	12.5	10.2	9.4	9.9	10.2	9.7	8.7
San Diego, CA	3.6	13.3	39.1	44.1	9.5	14.4	13.7	10.4	7.0	8.5	10.8	10.0	9.3	7.2
Denver, CO	2.3	17.5	43.3	37.0	9.3	15.2	16.3	9.9	4.9	5.2	5.4	7.0	5.7	3.8
Atlanta, GA	2.2	14.4	46.6	36.7	9.2	23.7	13.6	10.0	5.6	9.6	9.7	12.4	11.1	6.5
Miami, FL	2.1	19.1	38.3	40.3	9.0	14.0	10.3	9.4	7.8	23.4	26.9	25.3	24.3	21.5
Oakland, CA	4.8	15.2	43.4	36.6	9.0	17.0	13.8	10.3	4.3	8.3	11.0	10.9	9.5	5.5
Minneapolis-St. Paul, MN	2.0	12.6	57.4	28.0	8.8	22.9	14.4	8.9	5.0	5.8	8.0	7.4	6.2	4.0
Cleveland, OH	3.8	11.1	50.4	34.7	8.2	25.3	17.4	7.8	4.0	10.5	18.6	16.6	11.1	6.8
Los Angeles, CA	2.9	18.4	34.4	44.3	6.8	9.5	8.2	8.3	4.9	8.9	11.3	10.4	9.9	7.5
Washington, DC	2.5	17.8	46.3	33.3	6.7	4.5	7.5	7.9	5.0	6.6	7.5	8.3	7.3	4.7
Tampa, FL	0.9	18.8	44.0	36.3	6.7	14.1	8.8	6.5	5.5	15.8	21.9	18.7	16.1	13.7
Houston, TX	1.4	12.9	31.1	54.5	6.6	9.3	8.3	8.4	5.2	7.1	7.5	9.4	9.1	5.5
Dallas, TX	1.1	11.7	34.1	53.0	6.5	12.2	10.4	7.8	4.6	6.3	10.1	10.3	7.5	4.5
St. Louis, MO	1.9	14.9	52.8	30.3	5.7	18.1	12.0	5.3	2.5	5.7	11.8	9.7	5.8	3.2
Chicago, IL	3.5	15.9	43.1	37.5	5.3	13.1	8.8	5.5	2.9	9.4	13.1	13.1	10.6	6.0
Milwaukee, WI	5.2	15.8	45.8	33.1	4.3	14.1	8.6	3.6	1.7	6.6	14.0	12.5	6.2	3.3
Baltimore, MD	2.6	15.4	47.3	34.7	3.0	7.1	4.4	3.0	2.0	6.6	11.5	9.4	6.8	4.6
Seattle, WA	0.7	16.1	56.9	26.4	2.8	NA	3.8	2.9	1.9	6.2	7.5	7.9	6.5	4.6
Raleigh, NC	0.6	9.5	63.7	26.2	2.7	NA	5.4	3.0	1.0	5.0	NA	8.4	5.5	2.4
New York, NY	2.9	14.8	28.2	54.0	1.9	3.1	3.1	2.5	1.2	9.7	15.8	14.1	12.1	6.9
Philadelphia, PA	4.4	17.3	35.2	43.1	1.9	4.7	3.2	2.0	1.0	6.2	12.1	10.4	6.7	3.5

Notes: NA=Not available (Data cells with less than 100 loans were suppressed.) Shares of loans originated may not total 100 due to missing data. Low-income neighborhoods are those for which the median income for the census tract is less than 50 percent of the metropolitan statistical area (MSA) median income; moderate-income — at least 50 percent and less than 80 percent of the MSA median income; middle-income — at least 80 percent and less than 120 percent of the MSA median income; and higher-income — at least 120 percent of MSA median income.

Table 2.4: Rates of Completed Foreclosures and Serious Delinquencies for Selected Metropolitan Areas, by Neighborhood Racial Composition (2004-2008 Originations)

	Share of Loans (Percent)				Completed Foreclosures (Percent)					Seriously Delinquent (Percent)				
	Neighborhood Minority Composition				Neighborhood Minority Composition					Neighborhood Minority Composition				
Metropolitan Areas	Percent Minority - Lowest Quartile	Percent Minority - 2nd Quartile	Percent Minority - 3rd Quartile	Percent Minority - Highest Quartile	Total	Percent Minority - Lowest Quartile	Percent Minority - 2nd Quartile	Percent Minority - 3rd Quartile	Percent Minority - Highest Quartile	Total	Percent Minority - Lowest Quartile	Percent Minority - 2nd Quartile	Percent Minority - 3rd Quartile	Percent Minority - Highest Quartile
Detroit, MI	27.3	27.5	25.0	20.3	22.4	11.2	14.8	29.5	39.2	11.2	7.5	8.9	13.3	16.6
Las Vegas, NV	26.8	25.1	24.3	23.7	16.1	16.1	15.0	16.5	16.8	14.7	14.1	14.1	14.9	15.9
Riverside-San Bernardino, CA	26.8	26.1	24.4	22.6	13.6	13.9	13.0	13.5	14.0	11.1	11.1	10.9	11.2	11.2
Phoenix, AZ	28.9	26.4	20.7	24.0	13.0	8.3	10.3	15.6	19.2	9.3	7.1	8.3	10.0	12.4
Sacramento, CA	25.5	24.7	26.9	22.8	12.5	7.4	10.8	14.7	17.4	9.4	8.1	9.1	10.3	10.1
San Diego, CA	23.0	26.2	25.4	25.4	9.5	5.8	7.6	10.3	13.8	8.5	6.5	7.5	8.8	11.0
Denver, CO	25.5	25.7	23.8	24.9	9.3	5.0	5.4	10.2	16.8	5.2	4.0	4.0	5.7	7.2
Atlanta, GA	23.3	24.8	24.7	27.1	9.2	6.6	7.4	8.1	14.2	9.6	7.4	8.2	9.0	13.2
Miami, FL	27.1	24.4	23.6	24.8	9.0	9.3	9.2	8.6	8.9	23.4	20.6	23.9	25.0	24.6
Oakland, CA	23.9	22.7	25.7	27.7	9.0	4.2	9.3	9.2	12.7	8.3	5.3	8.6	8.7	10.4
Minneapolis-St. Paul, MN	24.7	24.7	25.7	24.9	8.8	8.5	6.8	6.8	13.1	5.8	6.3	5.1	4.9	6.8
Cleveland, OH	25.9	25.9	25.1	23.1	8.2	4.8	5.1	7.5	16.3	10.5	8.2	7.8	10.4	16.4
Los Angeles, CA	23.9	24.3	25.7	26.0	6.8	4.5	8.0	7.5	7.4	8.9	6.7	8.9	9.6	10.4
Washington, DC	23.2	24.6	26.1	26.1	6.7	5.6	6.7	8.9	5.6	6.6	4.9	4.7	6.7	9.9
Tampa, FL	26.6	25.7	23.6	24.2	6.7	6.4	6.2	6.2	7.9	15.8	14.7	14.5	15.4	18.7
Houston, TX	26.5	25.5	22.1	25.9	6.6	4.5	5.8	7.4	9.0	7.1	4.6	6.0	8.0	10.1
Dallas, TX	22.5	23.9	25.8	27.8	6.5	4.3	5.4	6.0	9.6	6.3	4.2	5.1	5.7	9.5
St. Louis, MO	27.9	22.5	25.6	24.0	5.7	4.5	3.7	3.9	10.9	5.7	4.9	4.1	4.4	9.5
Chicago, IL	26.0	23.6	24.8	25.6	5.3	3.2	3.8	5.2	9.1	9.4	6.8	7.5	9.7	13.4
Milwaukee, WI	27.6	27.1	24.8	20.6	4.3	2.1	2.3	3.8	10.6	6.6	4.0	4.3	6.2	13.7
Baltimore, MD	26.1	24.5	25.2	24.2	3.0	2.4	2.4	2.9	4.2	6.6	5.5	5.3	6.2	9.5
Seattle, WA	24.3	23.3	24.4	27.9	2.8	2.7	2.4	2.7	3.3	6.2	6.2	5.4	6.2	7.0
Raleigh, NC	26.1	23.8	26.2	23.9	2.7	1.7	2.3	2.7	4.4	5.0	3.3	4.1	4.8	8.0
New York, NY	24.1	24.8	25.3	25.8	1.9	1.1	1.1	2.0	3.5	9.7	6.2	6.3	9.5	16.3
Philadelphia, PA	25.3	24.5	26.0	24.2	1.9	1.4	1.4	1.7	3.2	6.2	5.0	4.6	5.2	10.2

Notes: NA=Not available (Data cells with less than 100 loans were suppressed.) Shares of loans originated may not total 100 due to missing data.

ENDNOTES

1 E. Schloemer, W. Li, K. Ernst, and K. Keest (2005). "Losing Ground: Foreclosures in the Subprime Market and Their Cost to Homeowners," Research Report, Center for Responsible Lending.

2 D. Bocian, W. Li, and K. Ernst (2010). "Foreclosures by Race & Ethnicity: The Demographics of a Crisis," Research Report, Center for Responsible Lending.

3 Our results do not go beyond February of 2011, but all indications are that the foreclosure problem is not abating. For example, according to the Mortgage Bankers Association delinquency report, figures for the second quarter of 2011 show a rise in early (30-day) delinquencies, including late payments on prime, fixed-rate loans. One in 11 mortgage holders is 60 days late or more on their loan. The number of loans now at risk of default far exceeds the number of completed foreclosures. Given that relatively few of these loans are likely to recover and the high number of continuing delinquencies, it is clear that we are not yet halfway through the foreclosure crisis.

4 Both the CRA and the GSEs' affordable housing programs declined in market share during the peak of the housing bubble, as lenders willingly originated the subprime loans that Wall Street was demanding. See R. Quercia; A. Freeman; and J. Ratcliffe (2011). *Regaining the Dream: How to Renew the Promise of Homeownership for America's Working Families*. Washington, D.C.: Brookings Institution Press. A recent study by economists at the Federal Reserve Board finds that neither CRA nor the GSE housing goals had a significantly negative effect on outcomes. See R. Avery and K. Brevoort (2011). "The Subprime Crisis: Is Government Housing Policy to Blame?" Finance and Economics Discussion Series, Divisions of Research & Statistics and Monetary Affairs of the Federal Reserve Board.

5 C.E. Pollack and. J. Lynch (2009). "Health status of people undergoing foreclosure in the Philadelphia Region," *American Journal of Public Health* 99: 1833-1839.

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7 Inside Mortgage Finance (2007). "Subprime Originations Fall Modestly in 2006, Worse to Come," Inside B&C Lending (February 9, 2007), p.3.

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9 The Alt-A market is defined differently by different people. Some define it as the market serving people with good credit but who don't meet the traditional prime underwriting standards, such as documentation standards. Others define it by product, including interest-only and payment option adjustable rate (POARMs) loans as Alt-A products. Finally, others define it as borrowers with credit scores that are somewhere in the "gray area" between subprime and prime.

10 U.S. Department of Housing and Urban Development, Office of Policy Development and Research (2010). *Report to Congress on the Root Causes of the Foreclosure Crisis*, available at http://www.huduser.org/Publications/PDF/Foreclosure_09.pdf, p. 29.

11 The Community Reinvestment Act (CRA) was passed by Congress in 1977 to encourage banks to meet the credit needs of the communities in which they have branches, with a specific emphasis on low- and moderate-income neighborhoods. It does not include any guidance based on borrower race.

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20 D. Bocian, P. Smith, G. Green and P. Leonard (2010). "Dreams Deferred: Impacts and Characteristics of the California Foreclosure Crisis," Research Report, Center for Responsible Lending.

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35 In a detailed survey, Courchane and her colleagues found that subprime borrowers were less knowledgeable about the mortgage process and were less likely to search "a lot" for the best rates. "Borrowers who do not search for the best interest rates or who do not have the opportunity to make choices about their mortgage options disproportionately end up with subprime loans, as do borrowers whose search emphasized affordable monthly payments." M. Courchane, B. Surette, and P. Zorn (2004). "Subprime Borrowers: Mortgage Transitions and Outcomes." *Journal of Real Estate Finance and Economics* 29(4): 365-392. (p. 373).

36 LPS is collected by loan servicers and is estimated to cover approximately 60 percent of the market. BlackBox is comprised of loans in private-label securities and covers approximately 90 percent of non-agency pools. More information on these data sources is available in Appendix 1.

37 That is, seriously delinquent mortgages are not calculated as a proportion of outstanding loans in February 2011, but rather of all 2004-2008 originations.

38 The effect of multiple loans per borrower underestimates the true foreclosure rate for the 2004-2008 cohorts and, therefore, makes our estimates conservative. For example, suppose 100 borrowers purchased properties in 2004 and 50 of these borrowers refinanced in 2005. Our dataset would contain 150 loans for these 100 borrowers. If 15 loans ended in foreclosure, our completed foreclosure rate would be calculated as 10% (15 loans out of 150 total loans resulted in foreclosure). However, the actual *borrower-level* (and property-level) foreclosure rate is 15% (15 out of 100 borrowers ended in foreclosure. This limitation to our data points to the need for borrower-level mortgage information going forward.

39 The total numbers of completed foreclosures and seriously delinquent loans is based on the totals calculated in our merged sample, scaled up to the total number of first-lien owner-occupied HMDA loans originated during that time period. We assume the HMDA loans that did not match with BlackBox or LPS have seriously delinquent and completed foreclosure rates similar to those that were matched.

40 Borrower race and ethnicity are derived from the HMDA data and refer to the race/ethnicity of the primary applicant. African-American borrowers are those who are classified as "Black or African American," and can be of any ethnicity. Asian borrowers are those who are classified as "Asian," and can be of any ethnicity. Latinos are those who are classified as "Hispanic or Latino" as their ethnicity and who indicate "White" as their race. "Others" include American Indians, Alaska Natives, Native Hawaiian and other Pacific Islanders, and can be of any ethnicity.

41 Borrower income categories are classified as follows: "low-income" - less than 50 percent of the metropolitan statistical area (MSA) median income; "moderate-income" - at least 50 percent and less than 80 percent of the MSA median income; "middle-income" - at least 80 percent and less than 120 percent of the MSA median income; and "higher-income" - at least 120 percent of MSA median income. The average incomes for each of the categories are $26,000 for low- income, $41,000 for moderate-income, $61,000 for middle-income, and $108,000 for higher-income.

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Case of Prepayment Penalties and Balloon Payments," *Housing Policy Debate* 18(2): 311-346. A. Pennington-Cross and G. Ho (2010). "The Termination of Subprime Hybrid and Fixed-Rate Mortgages," *Real Estate Economics* 38(3): 399–426.

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45 R. Brooks and R. Simon, "Subprime Debacle Traps Even Very Credit-Worthy As Housing Boomed, Industry Pushed Loans To a Broader Market," *Wall Street Journal* at A1 (Dec. 3, 2007).

46 We define hybrid and option ARMs as loans that are either interest-only, have negative amortization, or have an initial fixed rate of five years or less (e.g. 2-28 and 3-27).

47 The foreclosure rate for borrowers in the 'Other' category, which includes American Indians, Alaska Natives, and Native Hawaiian and other Pacific Islanders, is also notably higher, at 9.1 percent.

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49 We tested to see if this effect was due to the large numbers of no documentation loans originated over this time period. While no documentation loans certainly play a role, the trends by race/ethnicity and income remain the same even when we consider loans with income documentation.

50 The BlackBox data do not include information on the mortgage market channel at origination, so our broker analysis is limited to matched LPS loans. Given that LPS has less coverage of the subprime and Alt-A markets than BlackBox, our estimates of risky loan originations for the broker channel are likely to be conservative.

51 Specifically, for each state, we calculated the housing price appreciation from 2000 to 2005 and then ranked the appreciation rates from low to high. States in the first quartile, which saw little or no growth in house prices over this time period, are called "Weak Market" states; states in the second quartile are called "Stable Market" states; states in the third quartile are called "Moderate Growth Market" states; and states in the fourth quartile are called "Boom Market" states. A table with the full listing of states and their classification is located in Appendix 1.

52 In the CRL report "Dreams Deferred: Impacts and Characteristics of the California Foreclosure Crisis", we estimate that, for foreclosures in California, the average value at origination was $397,00. However, the area median property value for these properties was $486,000. See endnote 16.

53 According the a 2009 report by the Urban Institute, local governments incur, on average, over $19,000 in costs for every foreclosure, while adjacent neighbors incur $3,000 in lost property values. See G. T. Kingsley, R. Smith, and D. Price (2009). *The Impacts of Foreclosure on Families and Communities*. Washington, DC: The Urban Institute.

54 Neighborhood income thresholds are constructed similarly to borrower thresholds. "Low-income" neighborhoods are those for which the median income for the census tract is less than 50 percent of the Metropolitan Statistical Area (MSA) median income; "moderate-income" - at least 50 percent and less than 80 percent of the MSA median income; "middle-income" - at least 80 percent and less than 120 percent of the MSA median income; and "higher-income" - at least 120 percent of MSA median income.

55 To develop the minority status quartiles, we ranked census tracts within an MSA based on the percent of minority residents. For example, the 25 percent of census tracts with the highest percentage of minority residents in relation to the other census tracts within the MSA would fall into highest quartile category.

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61 Enacted by Congress in 1975, the Home Mortgage Disclosure Act (HMDA) requires banks, savings and loan associations, and other financial institutions to publicly report detailed data on their mortgage lending activity. A depository institution (bank, savings and loan, thrift, and credit union) must report HMDA data if it has a home office or branch in a metropolitan statistical area (MSA) and has assets above a threshold level that is adjusted upward every year by the rate of inflation. For the year 2006, the asset level for exemption was $35 million. A non-depository institution must report HMDA data if it has more than $10 million in assets and it originated 100 or more home purchase loans (including refinances of home purchase loans) during the previous calendar year.

62 For more information on the BlackBox data, visit the provider's website at http://www.bbxlogic.com/data.htm.

63 Loan purpose refers to purchase, home equity or refinance loans. Loan type refers to conventional or FHA/VA.

64 For example, if one HMDA loan was matched to two loans in LPS and one loan in BlackBox, each match would be given a weight of 1/3.

65 We also considered whether or not we would be introducing bias when a single LPS (or BlackBox) loan matched to multiple HMDA loans, thereby giving it undue influence in the sample. The implicit assumption with such matches is that HMDA loans with identical matching variables performed identically. Approximately 4.3 percent of the loans in our sample had this issue. As it turns out, the presence of these loans slightly lowers our estimates of completed foreclosures and serious delinquencies and does not alter the racial or ethnic disparities.

About the Center for Responsible Lending

The Center for Responsible Lending is a nonprofit, nonpartisan research and policy organization dedicated to protecting homeownership and family wealth by working to eliminate abusive financial practices. CRL is affiliated with Self-Help, one of the nation's largest community development financial institutions.

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