

# CR Report: Foreclosure Differences Across State Lines

Spring 2009

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The Fourth Federal Reserve District includes the neighborhoods of North Collinwood, a lakeside community on Cleveland's east side with aging duplexes and small shops, some abandoned, and Braddock, a Pittsburgh borough on the Monongahela River with a Carnegie library standing amid vacant homes and several shuttered steel mills. On paper, these two communities share some statistical characteristics. Both neighborhoods include an urban census tract with a population between 2,000 and 3,000. About seven out of 10 residents in each of those tracts are black. Half of each tract's residents are estimated to have low credit scores. And in both areas, 53 percent of the mortgages originated in 2005 came from subprime lenders.

Despite these similarities, there are two notable differences between these neighborhoods: First, and more obvious, they are located in different states—North Collinwood in Ohio and Braddock in Pennsylvania. And second, one of North Collinwood's census tracts had a foreclosure rate of 20.75 percent in 2007, nearly four times as high as Braddock's rate of 5.2 percent.

The fact that neighborhoods like North Collinwood experience extremely high rates of foreclosures is not surprising. Studies show that borrower risk is related to income, educational levels, and credit scores. Neighborhoods with a higher percentage of high-risk borrowers, thus, are more likely to experience higher rates of foreclosure than neighborhoods with a lower percentage of riskier borrowers. But what if those characteristics—income, educational levels, and credit scores—don't matter as much in some communities as they do in others? Put another way, how is it that homeowners with low credit scores appear to be more likely to default if they live in Cleveland compared with homeowners with similar creditworthiness living in Pittsburgh?

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One might argue that North Collinwood and Braddock are merely eyebrow-raising anecdotes and that surely other, less-acute examples exist. Yet nearly three times as many homes were foreclosed upon in Cuyahoga County in 2007 as in Allegheny County, even as Cuyahoga has only 13 percent more mortgaged units. Simply put, the foreclosure problem is worse in Cuyahoga County than in Allegheny County.

The question, given all their demographic and neighborhood similarities, is why. New research suggests that the divergent experiences of North Collinwood and Braddock are not isolated cases. A trio of new studies from the Community Development department of the Federal Reserve Bank of Cleveland finds statistical support for the beginnings of a provocative hypothesis: that there's something about Ohio, perhaps in its regulatory framework or in its enforcement of these laws, that has made the foreclosure crisis worse.

## **Similarities and differences**

Over the past few years, foreclosures have been most prevalent in two types of neighborhoods. First, in areas with ample new construction and higher real estate price appreciation—places like California and Florida. Second, in those that can be described as weak-market areas with large shares of low-income or minority residents, many with bad credit histories. In this *CR Report*, we are concerned with the latter neighborhoods.

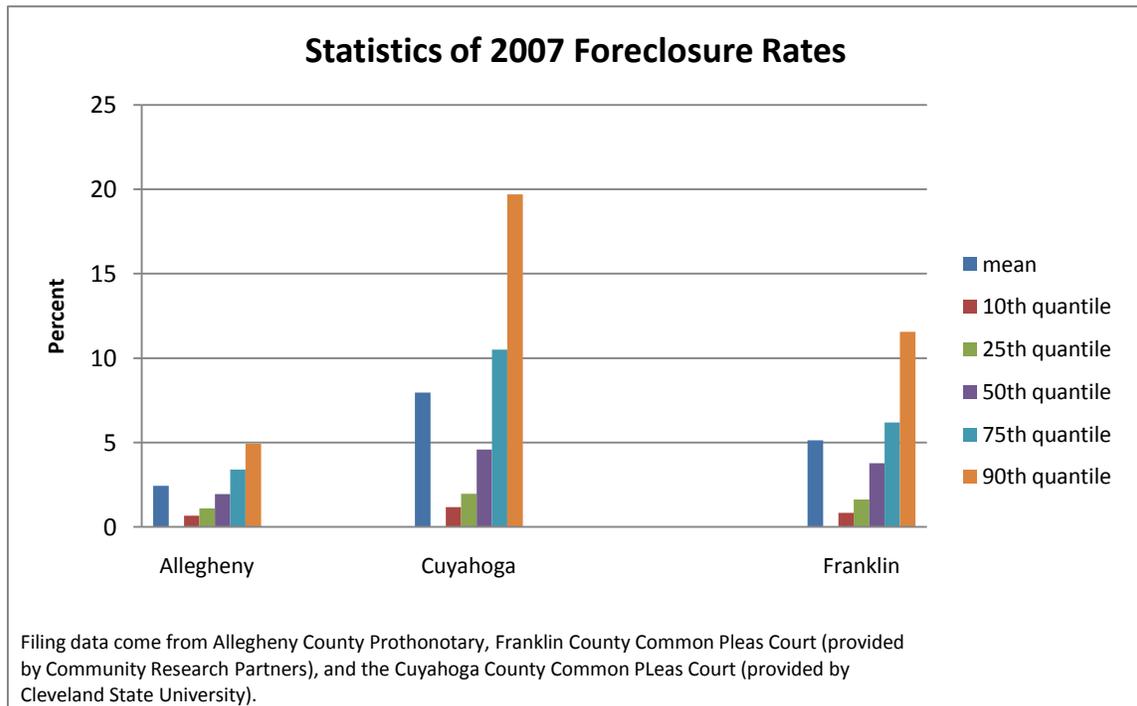
In the Fourth Federal Reserve District—which encompasses all of Ohio and parts of Kentucky, Pennsylvania, and West Virginia—the foreclosure problem is not the result of rapid run-ups and steep declines in house prices; in fact, house prices in this part of the country have swung downward after modest previous appreciation. Meanwhile, expanded

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credit options led to higher shares of subprime mortgage originations in neighborhoods that previously showed high denial rates.

But there still exists substantial variation in foreclosure rates both within (some counties have neighborhoods with scores of foreclosures, while other neighborhoods are relatively unscathed) and across (Allegheny County compared with Cuyahoga County, for example) these weak markets. Consider that in Allegheny County, the average foreclosure rate in 2007 was 2.4 percent. But it was more than double that in 14 percent of the county's census tracts, meaning the average was strongly tilted upward because of high concentrations of foreclosures in a relatively small number of neighborhoods. This wide range is even more pronounced in Cuyahoga County, where the mean foreclosure rate in 2007 was almost 8 percent, but more than 100 of the county's 446 census tracts experienced foreclosure rates topping 10 percent. In one Cuyahoga neighborhood alone, half the mortgaged units were in foreclosure during 2007.

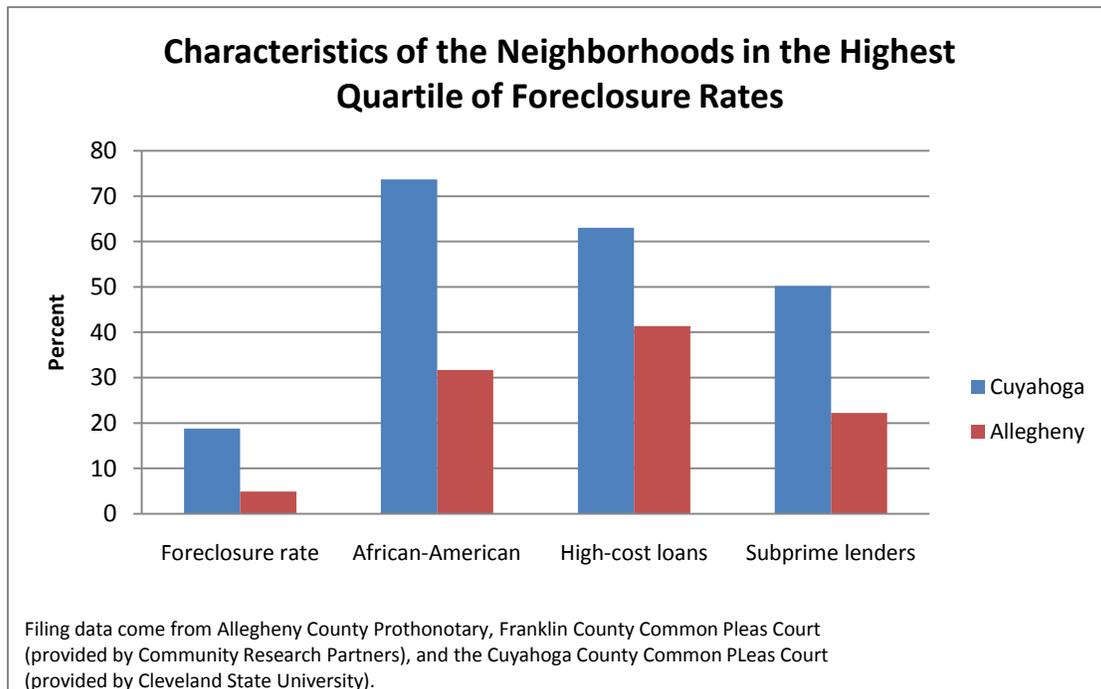


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In two recent papers, “A Look at Foreclosure Filings in Cuyahoga County” and “Foreclosure Patterns in Allegheny County,” senior policy analyst Lisa Nelson delved into the data for answers. In each paper, Nelson broke down the data by foreclosure rate and income quartiles, and then examined neighborhood characteristics in high-foreclosure-rate areas and lowest-income areas.

Not surprisingly, neighborhoods in both counties with large numbers of foreclosure filers displayed high rates of these four characteristics: high-cost (or subprime) loans, loans made by non-depository institutions (which often are orchestrated by mortgage brokers), unemployment, and individuals lacking a high school diploma. In addition, some of the highest foreclosure-filing rates showed up in neighborhoods with large shares of African Americans.



Eyeballing the above chart, it might be easy to conclude that these neighborhood characteristics are sufficient to explain foreclosure rates. But this preliminary observation

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is a bit misleading. In her analysis, Nelson noted that “the *strength* of the correlations varied across these two counties, with Cuyahoga County showing a statistically stronger relationship between these neighborhood characteristics and filing rates of foreclosure.” (The degree to which demographic and neighborhood characteristics explain foreclosure rates will be explored later in this article.)

One of Nelson’s key findings is that non-depository institutions—lending entities other than banks—were far more entwined with Cuyahoga’s foreclosure filings than Allegheny’s. In her analyses, Nelson quartered census tracts by income. What she found points to at least one stark difference between Cuyahoga and Allegheny Counties. In the poorest neighborhoods of Cuyahoga County, non-depository institutions originated 56 percent of mortgages. By comparison, the share of non-depository-originated mortgages in Allegheny County’s poorest neighborhoods was 30 percent.

Perhaps not coincidentally, borrowers in Cuyahoga’s lowest-income quartile were also very likely to have taken out high-cost loans—60 percent, compared with 38 percent in Allegheny County. And in Cuyahoga, one out of three high-cost loans to the lowest-income quartile was made by the same lender. In Allegheny, no lender originated more than 6 percent of high-cost loans in any income segment. At the very least, this finding suggests the need for further research into the relationship between high-cost lending and non-depository institutions, and their high levels of activity in poor neighborhoods in Cuyahoga County.

## Counterfactual analysis

The effectiveness of states’ supervision of mortgage lending has long been thought to be

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related to foreclosure outcomes. The most common way to measure regulatory strength is through an index, essentially a weighted average of the number of rules that should affect mortgage outcomes—from anti-predatory-lending laws to the existence of mortgage broker licensing requirements. This type of assessment, however, could be more a reflection of the quantity of regulations, not necessarily the quality. Ohio and Pennsylvania, for example, have been indexed similarly in previous research that compares regulations for mortgage lending.<sup>1</sup> However, when comparing mortgage *broker* regulations, Pennsylvania has been ranked higher than Ohio.<sup>2</sup> In this case, the indexing itself does not yield any clear-cut distinctions between the two states. So we're back to the question, why do we observe higher foreclosure rates in Ohio?

In a recent study, “**An Analysis of Foreclosure Rate Differentials in Soft Markets**,” Francisca Richter, a research economist with the Cleveland Fed’s Community Development group, examines neighborhood characteristics in three select counties in Ohio and Pennsylvania in an effort to narrow down the set of possibilities that explain the divergent foreclosure rates. If neighborhood characteristics alone cannot account for the differences, there must be other factors at work—perhaps, as suggested above, differences in state regulatory environments.

Richter uses a statistical technique called *quantile regression*. Where standard regression techniques aim to isolate the effect of specific variables over a given outcome around its mean—in the case here, for neighborhoods with average foreclosure rates—quantile regression results in estimates around either the median or other quantiles of the response variable, and is particularly useful in cases where a researcher’s interest lies with the higher end of the distribution and not the mean, as with high-foreclosure-rate

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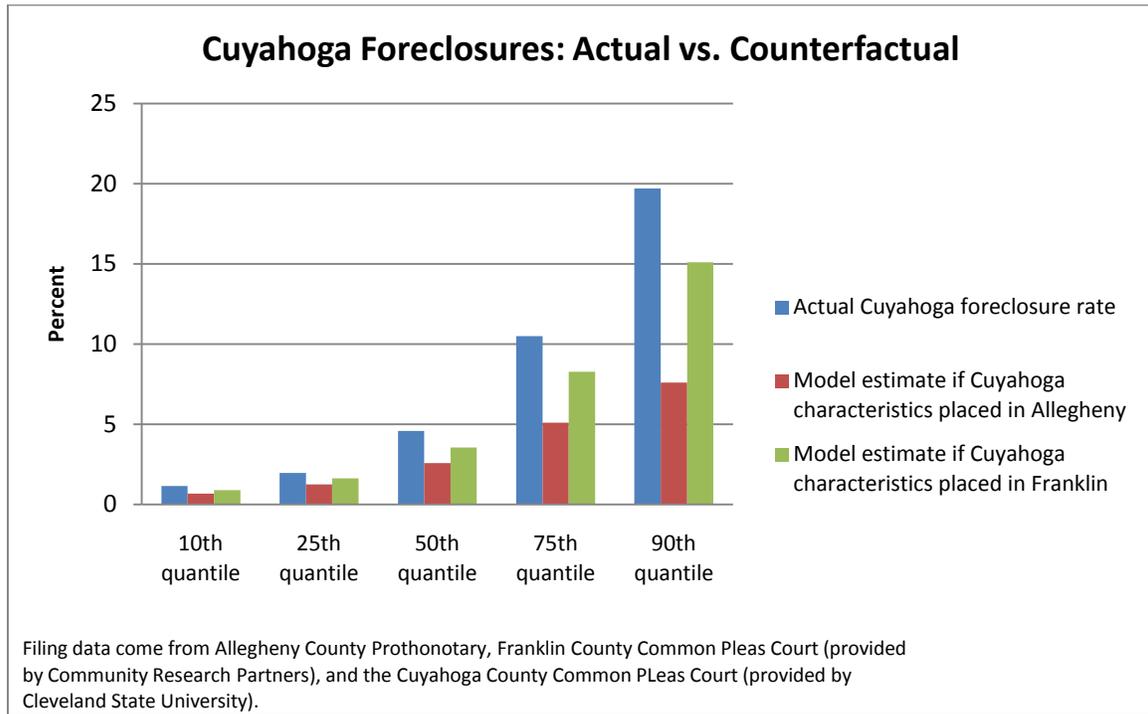
neighborhoods. In Cuyahoga County, we noted earlier, the foreclosure-rate distribution is heavily skewed toward neighborhoods with high foreclosure rates.

The analysis reveals sharp differences by neighborhood. In the Allegheny County neighborhoods with the highest percentage of black residents, for example, 63 percent are black, compared with similar Cuyahoga County neighborhoods where 97 percent of residents are black. Similarly, in the least-educated Allegheny neighborhoods, 25 percent did not graduate from high school; in the comparable Cuyahoga neighborhoods, more than 40 percent did not finish high school. Yet the size of these disparities is not as large as the differences in foreclosure rates. This suggests that something else besides neighborhood characteristics is at work in explaining the likelihood of a community experiencing a higher foreclosure rate.

Richter performs a “counterfactual” exercise, in essence estimating what an Allegheny neighborhood’s mortgage experience would be like if that area happened to be relocated to Cuyahoga County. Here is what we see in the counterfactual exercise: If you put the Cuyahoga homeowners with average foreclosure rates of almost 20 percent in Allegheny County, their chance of foreclosure suddenly drops to 7.6 percent. On the flip side, displacing the highest-foreclosure percentile of Allegheny homeowners into Cuyahoga County more than doubles their chance of default—from about 5 percent to 11.6 percent.

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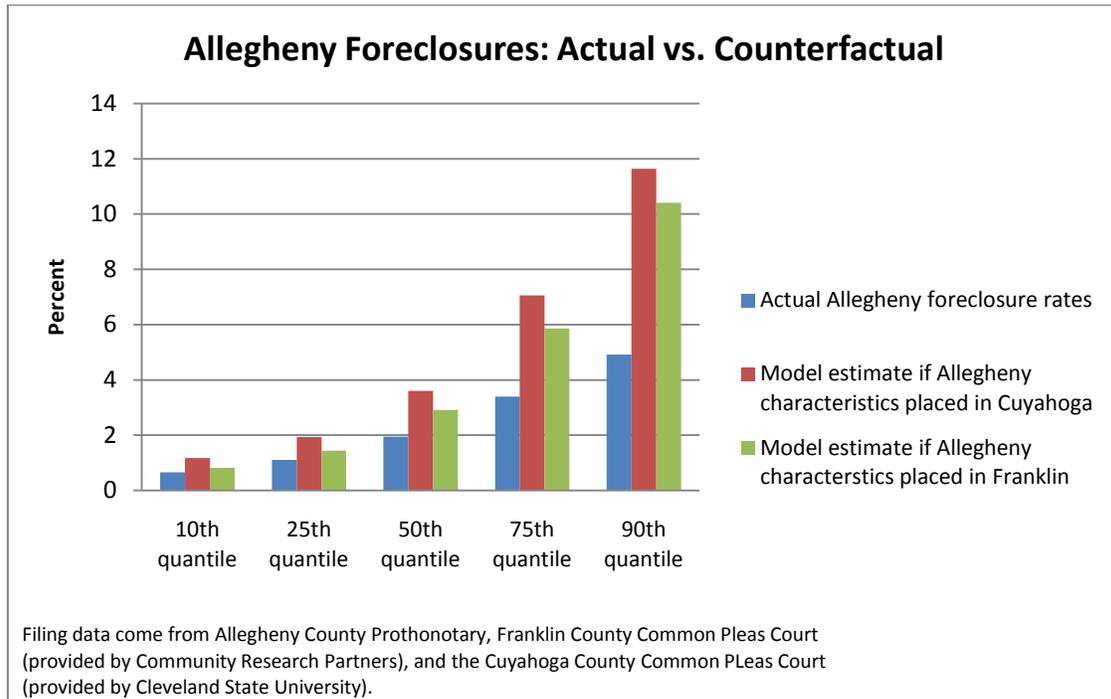
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It’s fair to ask whether there just happens to be something unique about Cuyahoga or Allegheny Counties that explains this disparity in foreclosure rates. Maybe Cuyahoga County’s high concentration of poverty—not seen in many other areas, including Allegheny County—makes comparisons difficult, or perhaps might require a different statistical technique. To further explore this possibility, Richter included a third county—Franklin, home to Ohio’s capital, Columbus—in the analysis.

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The story told by this comparison is that the environments in Franklin and Cuyahoga Counties are more similar to each other than with the cross-state (Allegheny County) comparison. Decomposing the variables, Richter shows in her analysis that at the upper end of the foreclosure-rate distribution, differences in neighborhood characteristics are the main contributing factors explaining Cuyahoga–Franklin foreclosure rate differences, but not so when comparing either Ohio county to Allegheny. In other words, whether the neighborhoods are dominated by borrowers with high or low credit scores and/or have a higher or lower incidence of subprime lending or poverty, matters *mainly* when explaining differing foreclosure rates in the two Ohio counties, but not when comparing counties across state lines.

The regression analysis further reveals that across all three counties, credit score and loan characteristics in neighborhoods are significant in predicting foreclosure rates,

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while other traits typically associated with foreclosure do not look as strong once these variables are taken into account. However, in Cuyahoga County alone, the percent of African-American residents in a neighborhood is significant even after accounting for all other variables. Although Richter's data analysis does not provide evidence as to why this might be the case, at the least, this finding suggests greater potential for coming hardships due to foreclosure spillovers in predominantly minority neighborhoods.

## Next Steps

In the big picture, demographics and neighborhood characteristics don't sufficiently explain why the Cleveland area has a bigger foreclosure problem than the Pittsburgh area. Something else is at work. Given that one of the main differences between Cleveland and Pittsburgh is their location within Ohio and Pennsylvania, respectively, it is reasonable to examine whether the difference is attributable to what might be called "state-level effects." One possible effect could be a difference in regulatory environments, since an effective regulatory environment that promotes transparency in the marketplace can be expected to lead to fewer foreclosures. It could also be an enforcement issue.

Richter's model compares foreclosure outcomes in three counties located in Pennsylvania and Ohio, and finds that foreclosure rate differences between counties *within* Ohio are mainly explained by aggregated borrower and neighborhood characteristics. However, these variables prove to be less powerful in explaining any of the differences across state lines. While regulations are not explicitly measured in the model, results are consistent with a regulatory environment effect hypothesis, which merits further exploration.

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As legislators grapple not only with the fallout from the foreclosure crisis but also with how to prevent similar occurrences in the future, they might well consider whether Ohio's regulatory climate allowed for greater information asymmetries than Pennsylvania's. As Richter puts it, "All else being equal, an effective regulatory environment should support better lending practices, and be conducive to weakening the relationship between low-income individuals and neighborhood characteristics on foreclosure rates."

In response to the subprime lending and foreclosure debacle, Ohio and Pennsylvania have passed legislation aimed at addressing distinct aspects of the crisis. In Ohio, the Homebuyer's Protection Act (SB 185), passed in the 126<sup>th</sup> General Assembly, became effective January 1, 2007. The law strengthens the Ohio Mortgage Broker Act by providing regulators and consumers with better tools to support consumer protections and prevent abusive lending practices, as well as requiring public disclosure of violations by mortgage brokers and loan officers. Enforcement of the law is allowed by the Attorney General and all County Prosecutors. Injured consumers may also bring some actions against persons accused of violating this law. In Pennsylvania, state legislators recently adopted tougher rules that require lenders to ascertain and document a borrower's ability to repay a mortgage loan. The new legislation also requires lenders and brokers licensed by the Pennsylvania Department of Banking to use a new, simplified, single-page disclosure form that calls a borrower's attention to loan features, such as a variable interest rate or prepayment penalty, that can cause loan payments to increase or make it difficult to refinance.

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As we see in daily news coverage, this foreclosure crisis is on a national scale. Nevertheless, distinct phenomena of the crisis exist that are specific to different regions of the country, and even to different states. At the very least, our research calls for further study on state-by-state differences in mortgage-market regulation. The divergent experiences of Ohio's North Collinwood and Pennsylvania's Braddock neighborhoods are an insistent reminder to answer this call.

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Nelson, Lisa. "Foreclosure Filings in Cuyahoga County." Federal Reserve Bank of Cleveland, *A Look Behind the Numbers*, Vol. 1, Issue 1, Fall (September) 2008.

Nelson, Lisa. "Foreclosure Patterns in Allegheny County, PA." Federal Reserve Bank of Cleveland, *A Look Behind the Numbers*, Vol. 1, Issue 2, November 2008.

Richter, Francisca. "An Analysis of Foreclosure Rate Differentials in Soft Markets." Federal Reserve Bank of Cleveland, Working Paper 08-11, November 2008.

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<sup>1</sup> Ho, Giang, and Anthony Pennington-Cross, "The Impact of Local Predatory Lending Laws." Federal Reserve Bank of St. Louis Working Paper 2005-049B, revised October 2005. Available at <http://research.stlouisfed.org/wp/2005/2005-049.pdf>.

<sup>2</sup> Pahl, Cynthia, "A Compilation of State Mortgage Broker Laws and Regulations, 1996-2006." Federal Reserve Bank of Minneapolis Community Affairs Report No. 2007-2, October 2007. Available at [http://www.minneapolisfed.org/publications\\_papers/capapers/mortgagebrokerregs/mortgagebrokerregulations\\_report.pdf](http://www.minneapolisfed.org/publications_papers/capapers/mortgagebrokerregs/mortgagebrokerregulations_report.pdf).