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A LOOK

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FORECLOSURE  
FILINGS IN  
CUYAHOGA COUNTY

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# Introduction

Northeast Ohio's Cuyahoga County, home to the city of Cleveland, has been called the epicenter of the nation's foreclosure crisis. While effects of the crisis are being felt in regions across the country, Cuyahoga County has consistently been listed at or near the top of areas hit hardest by foreclosure. Why?

In this report, we provide rates of foreclosure in different Cuyahoga County neighborhoods, detail patterns in the geographic distribution, and describe the demographic and lending characteristics in neighborhoods where foreclosure rates are highest. Our analysis draws on several data sources, including 2006 and 2007 foreclosure filing data from the Cuyahoga County Common Pleas Court, mortgage characteristics from 2005 Home Mortgage Disclosure Act (HMDA) data, and demographic data from the U.S. Census Bureau.

This detailed picture provides a useful first step in understanding foreclosure trends in Cuyahoga County and elsewhere. At the conclusion of this report we list a series of hypotheses that the Federal Reserve Bank of Cleveland may test in future research.

## Foreclosure patterns in Cuyahoga County

Foreclosures in Cuyahoga County (see Table 1) are concentrated in a small number of low- and moderate-income neighborhoods.<sup>1</sup> Almost half (48.8 %) of 2007 foreclosures were filed on homes in just 15 of the county's 95 neighborhoods.<sup>2</sup> Two inner-ring suburbs, Euclid and Maple Heights, had the highest volume of foreclosure filings (634 and 545, respectively), followed by Glenville, a Cleveland neighborhood, with 525.

Table 1: Foreclosure filings in 2006 and 2007

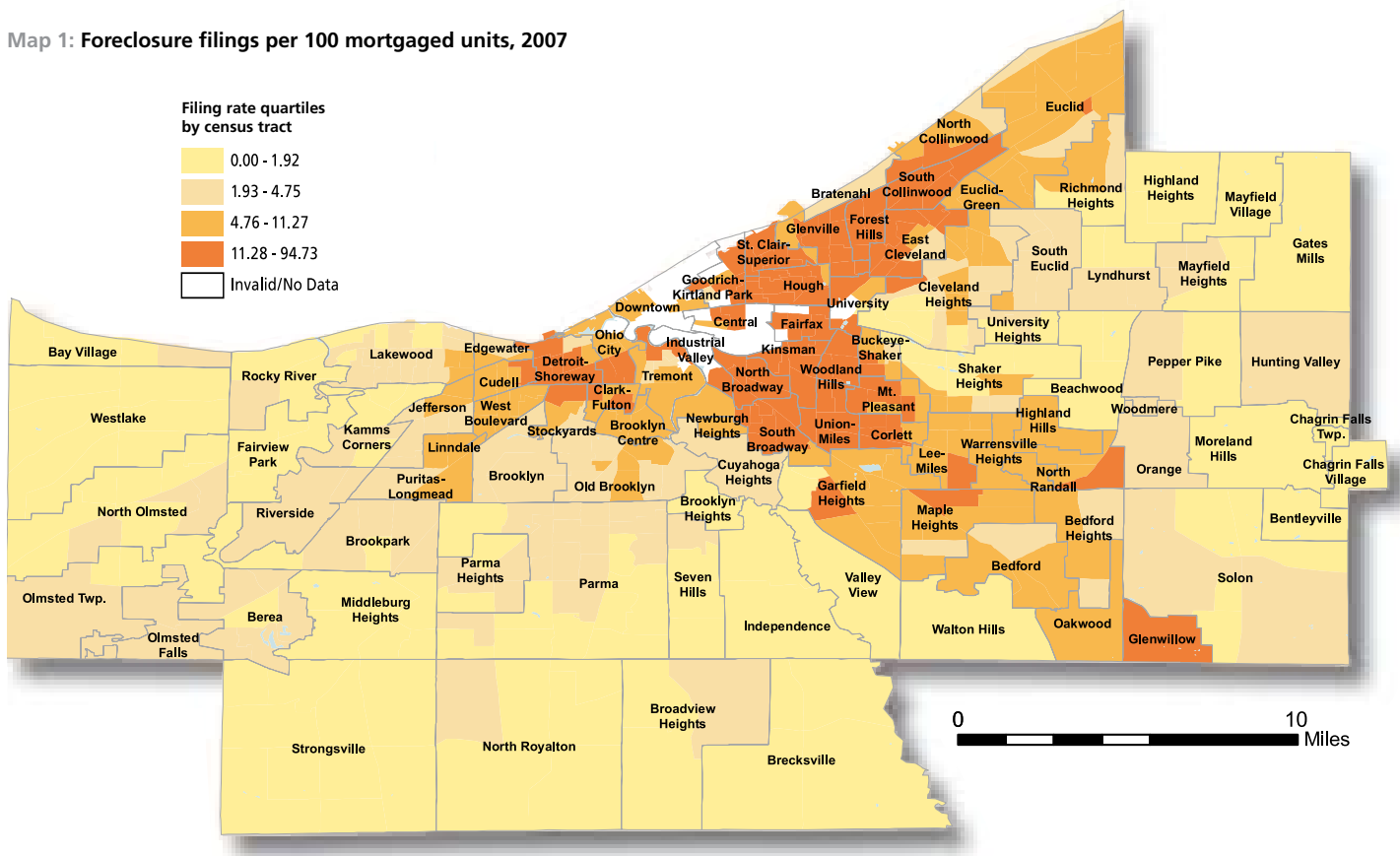
	2006		2007	
	Number	Rate	Number	Rate
Cleveland, city	7,326	10.7	7,457	10.7
Suburbs	5,889	2.9	6,324	3.1
Cuyahoga County	13,269	4.9	13,846	5.0

SOURCES: U.S. Census Bureau and Cuyahoga County Common Pleas Court

Although individual rankings among neighborhoods show slight changes from 2006 to 2007, the top 15 on the list remain unchanged from one year to the next. The suburb of East Cleveland, for example, which had the highest number of foreclosure filings in 2006, dropped to number five in 2007. Maple Heights, which had the sixth-highest number of foreclosure filings in 2006, moved up to the second spot in 2007. Euclid topped the list in 2007, moving up from the number-two spot in 2006.

As illustrated in Map 1, the highest rates of foreclosure in 2007 are found in contiguous east-side neighborhoods of the city of Cleveland, with one exception: Detroit–Shoreway, on the city’s west side, close to downtown.<sup>3</sup>

**Map 1: Foreclosure filings per 100 mortgaged units, 2007**



SOURCES: U.S. Census Bureau and Cuyahoga County Common Pleas Court

<sup>1</sup> An explanation for the concentration of foreclosures in low- and moderate-income neighborhoods in Cuyahoga County can be found in a recent paper (Atif Mian and Amir Sufi, “The Consequences of Mortgage Credit Expansion: Evidence from the 2007 Mortgage Default Crisis,” January 2008, available at <http://ssrn.com/abstract=1072304>). Mian and Sufi find that innovations such as the securitization of subprime mortgages dramatically increased lending in neighborhoods populated by borrowers with lower credit quality.

<sup>2</sup> The city of Cleveland contains 36 neighborhoods, comprised of contiguous census tracts, and the suburbs consist of 59 municipalities.

<sup>3</sup> Foreclosure rates represent the number of foreclosure filings in a given year divided by the number of mortgaged units in that year, for a given geography. The number of mortgaged units in 2006 and 2007 is an estimate based on Census Bureau and American Community Survey data available in 2000 and 2006. The 2006 estimated foreclosure rate for each census tract is obtained dividing the 2006 number of foreclosure filings in the tract by an *estimate* of the 2006 number of mortgaged units in that tract. The U.S. Census Bureau provides the 2000 census value for mortgaged units for the tract and for Cuyahoga County. It also provides an American Community Survey estimate of 2006 mortgaged units for the County. Given this information, we apply the County rate of increase to the 2000 census value of mortgaged units in the tract to obtain a 2006 figure of mortgaged units for the tract. To obtain an estimate of the 2007 mortgaged units, we apply the rate of increase between 2000 and 2006 of mortgaged units to the 2006 number of mortgaged units. The result of that calculation is then added to the 2006 number of mortgaged units to arrive at our estimate of 2007 mortgaged units.

Foreclosure rates are highest in the Cleveland neighborhoods of Kinsman (47.2 filings per 100 mortgaged units), Fairfax (29.4 per 100), and North Broadway (24.7 per 100). East Cleveland, the only suburban neighborhood in this group, has a rate of 16 foreclosure filings per 100 mortgaged units. Just as we saw with foreclosure volume, the 15 neighborhoods with the highest rates of foreclosure in 2007 were virtually unchanged from 2006.

### Characteristics of high-foreclosure-rate tracts

To learn about the characteristics of the Cuyahoga County neighborhoods in which foreclosures are concentrated, we grouped the data into four equal parts, or quartiles, based on the tract-level foreclosure filing rates across the county. Census tracts with the highest foreclosure rates are in the highest category, and tracts with lowest foreclosure rates are in the lowest.

Table 2 illustrates the differences across the quartiles.

	Quartiles			
	Lowest	Second	Third	Highest
Number of census tracts	118	119	119	119
Foreclosure filings (2007)	1,259	2,584	4,253	5,602
Foreclosure filings per 100 mortgaged units	1.3	3.1	7.1	18.8
Range of foreclosure filing rate (min–max)	0–1.92	1.94–4.75	4.76–11.27	11.29–94.73
Percent African-American	3.0	9.8	42.8	73.7
Percent minority*	8.0	16.0	51.3	79.9
Percent high-cost loans (2005)	15.2	24.6	44.0	63.0
Percent subprime lenders (2005)	10.5	17.0	32.2	50.2
Percent owner-occupied	76.5	65.8	60.0	42.6
Median household income	\$56,753	\$42,495	\$33,346	\$21,592

\*Includes all except non-Hispanic whites

SOURCES: U.S. Census Bureau, Cuyahoga County Common Pleas Court, and 2005 HMDA data

The foreclosure rate for tracts in the highest quartile (nearly 19 filings per 100 mortgaged units) is almost three times the rate in the third quartile, six times the rate in the second quartile, and nearly 19 times the rate in the lowest quartile. When examining loan characteristics in the HMDA data, we find that 63 percent of the loan originations in the highest-quartile tracts were high-cost loans, compared to about 44 percent in the third and 15 percent in the lowest quartile.<sup>4</sup> Subprime lenders—defined as those who issue at least half of their loans as subprime—originated 50 percent of the loans in the high-foreclosure tracts, compared to 32 percent in the third quartile and about 11 percent in the lowest quartile.<sup>5</sup>

<sup>4</sup> High-cost loans are defined as loans whose rates exceed by at least 3 percentage points the difference between the APR on a loan and the rate on Treasury securities of comparable maturity.

<sup>5</sup> It is not possible to tell from HMDA data whether an individual loan is subprime. However, HUD does identify lenders as subprime specialists, which means they issue mostly (at least half) subprime loans. This lender data can serve as a proxy for the existence of subprime loans in a census tract.

We also find some notable differences when looking at the demographic characteristics of these tracts. The median household income in the lowest-foreclosure-rate quartile is more than two-and-a-half times higher than the income in the highest-foreclosure-rate quartile. Even in the second quartile, the median income is nearly twice the income of the highest-rate quartile. African Americans make up 74 percent of the population in the highest-foreclosure-rate quartile and just 3 percent in the lowest-foreclosure-rate quartile.<sup>6</sup> Minorities, which include everyone except non-Hispanic whites, make up 80 percent of the population in the highest-foreclosure-rate quartile and just over 8 percent in the tracts in the quartile with the lowest rates of foreclosure. Owner occupancy is less in the quartile with the highest-rate tracts (42.6%) than in the lowest-rate tracts (76.5%).

The tracts in the highest quartile of foreclosure rates are home to 40 percent of the foreclosure filings countywide, but contain just 19 percent of the county's population. **Half (49.5%) of the county's African-American population lives in the highest-foreclosure-rate quartile, and another 34 percent lives in the next-highest-rate quartile.** Not only are foreclosures disproportionately found in neighborhoods that contain a relatively smaller share of the county's population, but these high-foreclosure neighborhoods also have the lowest incomes and the highest shares of African-American residents in the county.

To calculate the statistical validity of the relationships that seem apparent from our observations of the raw data, we correlated the tract-level foreclosure filing rates with selected demographic and loan characteristics. Correlations examine the relationship between two variables and simply tell us whether variables move in the same or different direction. They cannot tell us anything about causation—particularly in the case of the foreclosure crisis. The variables we are looking at are strongly correlated with each other, making it difficult to calculate the independent effect of each variable. At most, correlations may help us identify some of the factors that might be involved.

We find that foreclosure filing rates are positively and strongly correlated with the following:

- >the percent of high-cost loans;
- >the percent of loans originated by subprime lenders;
- >the percent of loans made by nondepository institutions;
- >the percent of the population that is unemployed;
- >the percent of the population without a high school degree; and
- >the percent of the population that is African American.

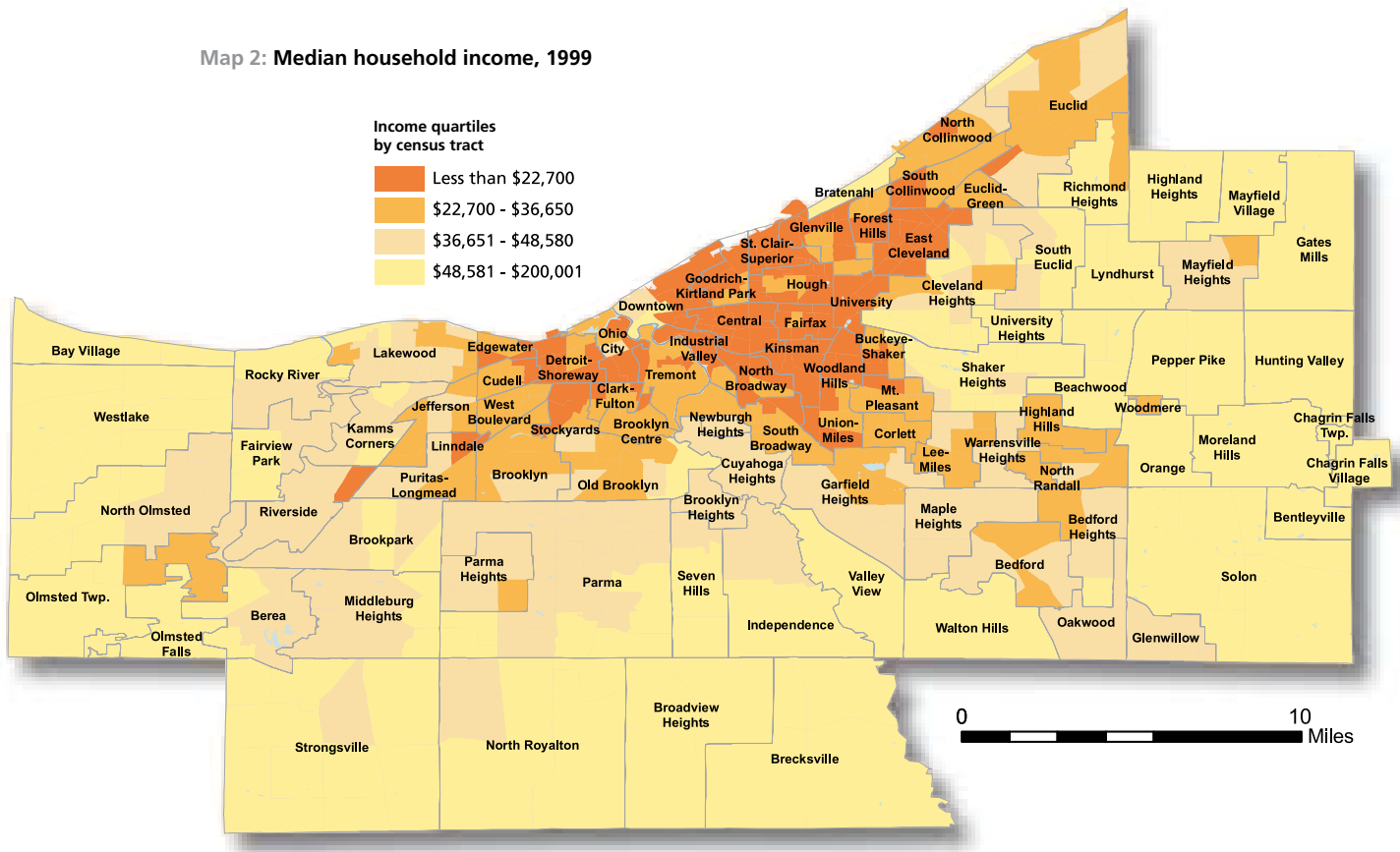
The positive correlations indicate that as foreclosure rates increase, so do the rates of these other variables. Median household income, on the other hand, is negatively and strongly correlated with foreclosure rates, meaning that as income decreases, foreclosure filing rates increase.

<sup>6</sup> While previous research has examined the link between race and the geographic concentration of high-cost lending and foreclosures, our analysis does not go beyond correlation. Specifically, we do not control for factors that may contribute to higher foreclosure rates, such as educational attainment, family structure, and credit risk. See, for example, William C. Apgar and Allegra Calder, "The Dual Mortgage Market: The Persistence of Discrimination in Mortgage Lending," Joint Center for Housing Studies, Harvard University, December 2005, and Paul S. Calem, Kevin Gillen, and Susan Wachter, "The Neighborhood Distribution of Subprime Mortgage Lending," *Journal of Real Estate Finance and Economics*, vol. 29, issue 4, October 2002.

## Tract characteristics by income level

To further explore the characteristics of the tracts affected most by foreclosures, we examined foreclosure rates and selected characteristics of census tracts that are grouped by income. To do so, we placed the census tracts into four equal groups, or quartiles, based on median household income. Tracts with the highest median incomes are in the highest quartile, and tracts with the lowest median income are in the lowest. As illustrated in Map 2, tracts in the lowest income quartile are heavily concentrated on the east side of the county, particularly in Cleveland’s east-side neighborhoods. This map resembles the pattern found in Map 1, where the highest rates of foreclosures are also found on the east side.

Map 2: Median household income, 1999



SOURCES: U.S. Census Bureau, Census 2000

Table 3 shows selected demographic and loan characteristics for the four income quartiles. As we found when examining foreclosure-rate quartiles, foreclosures are concentrated in low-income areas that also have high percentages of African Americans. Foreclosure rates are much higher in the lower-income tracts—19 per 100 mortgaged units compared with only two per 100 in the highest-income tracts. African Americans make up most of the population (71.1%) in lowest-income tracts but just 6 percent in the highest-income tracts. **High-cost loan originations dominate in the lower-income quartile, making up 60 percent of all originations, compared with just 17 percent in the highest-income quartile.** This may not be so surprising, given that lower-income borrowers presumably have characteristics that tend to pose a greater credit risk to lenders—for example, blemished credit histories, higher debt, and higher loan-to-value ratios.

Table 3: Characteristics of tracts by income quartile

Tract characteristics	Quartiles			
	Lowest	Second	Third	Highest
Median household income (min–max)	\$0–\$22,692	\$22,693–\$36,631	\$36,632–\$48,578	\$48,579–or more
Foreclosure filings (2007)	3,562	4,579	3,785	1,855
Foreclosure filings per 100 mortgaged units	19.0	8.7	4.0	1.7
Percent African-American	71.1	42.0	16.4	6.0
Percent high-cost loans (2005)	60.0	45.4	30.6	16.7
Rate above prime for high-cost loans (2005)	4.8	4.8	5.2	5.2
Originations by nondepository institutions (2005)	55.6	44.8	30.9	24.6
Average number of bank branches within a 3-mile radius (2005)	31.4	26.4	26.0	22.1

SOURCES: U.S. Census Bureau, Cuyahoga County Common Pleas Court, 2005 HMDA data, and FDIC Summary of Deposit Files

As a measure of geographic proximity to financial institutions, we included the number of bank branches in this analysis. Table 3 illustrates that the average number of bank branches within a three-mile radius of the geographic center of the tract is greatest in the lowest-income quartile and declines progressively through each of the higher-income quartiles.<sup>7</sup> Despite their relatively high proximity to lenders, however, a majority of the borrowers in the lowest-income quartile of these Cuyahoga County tracts received loans not from these bank branches, but from nondepository institutions instead.

Table 3 also shows that lower-income borrowers are more likely to obtain a high-cost loan (although high-cost loans were provided to borrowers in each income quartile).

The data show that in the top two income quartiles, high-cost loans were distributed across many lenders. Conversely, in the bottom two income quartiles, high-cost loans were provided by a much narrower range of lenders: 34 percent of all high-cost loans in the tracts of the lowest income quartile were originated by a single lender; in the second income quartile, 21 percent of the high-cost loans were originated by this same lender. Meanwhile, in the lowest income quartile, a total of three lenders originated 50 percent of high-cost loans, while in second quartile it was six lenders, and in the highest quartile, 14.

### Foreclosure trends across income quartiles

When comparing the 2007 foreclosure filing rates in each of the income quartiles to those in 2006, we find increases in the filing rates in all but the lowest income quartile, where there was a slight decrease in the filing rate. The largest increases occurred in the third and highest income quartiles, where foreclosure filings grew by 406 and 116, respectively, reflecting rate increases of 11 percent and 6 percent. These numbers tell us that although the greatest numbers of foreclosed homes are still concentrated in the county's lower-income tracts, the growth rate of foreclosure filings in the upper-income quartiles, primarily suburban census tracts, appears to be increasing.

<sup>7</sup> Given that many of the tracts within each of the income quartiles are contiguous, the same bank branch is likely to be counted numerous times, because it may lie within a three-mile radius of several of the tracts' geographic centers.

## Next Steps

The geographic concentration of foreclosures in Cuyahoga County is quite clear. Foreclosures are concentrated mainly in the city of Cleveland's east side neighborhoods, which are home to high percentages of minority and low-income populations. Additional analysis and research might examine a number of issues that this analysis highlighted, including whether the geographic concentration of foreclosures evident in Cuyahoga County is present in other counties throughout our district. If so, what are the characteristics of high-foreclosure-rate tracts in these counties? How do these characteristics vary across geographies? What characteristics or factors will help us to better understand the high rates of foreclosure in Cuyahoga County? Too, the geographic concentration of foreclosures undoubtedly leads to negative spillover effects—in particular, increased numbers of vacant and abandoned properties. How can or how will these communities effectively respond to the foreclosure crisis, coupled with an impending additional influx of vacant properties, given the weakened state of the housing market here? Finally, this analysis showed that high-cost borrowers living in low-income areas with high rates of foreclosure were served by a very small number of lenders compared to high-cost borrowers in higher-income areas. **Understanding the factors underlying the observed pattern of lending in Cuyahoga County is important in identifying the causes of the foreclosure debacle and the efficacy of proposed remedies and reforms.**

The foreclosure problem is a complex one. It likely stems from a number of factors associated with borrowers and lenders, and will surely result in continued changes among borrowers and lenders in the way they approach home financing. In addition, public officials must carefully sort through the pluses and minuses of options available to them, which include regulatory reform, financial assistance, and programs to gain control of and rehabilitate vacant and abandoned properties. Timely research can help inform these decisions.

### A LOOK BEHIND THE NUMBERS

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