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ARTICLES

An Analysis of the Relationship Between Housing Foreclosures, Lending Practices, and Neighborhood Ecology: Evidence from a Distressed County

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Abstract

Residential foreclosures increased sharply during the 1990s and in the first years of the twenty-first century. These foreclosures have profound impacts on the households and neighborhoods involved. Although foreclosures occur everywhere, the geography of foreclosures displays a pattern tied to a metropolitan area's social, fiscal, and economic geography. We examine these correspondences as they exist within Summit County (Akron), Ohio, between 2001 and 2003. Foreclosures themselves often result from unfortunate financial events that can affect any household, but we found that the geography of foreclosures corresponds primarily to Summit County's racial distribution, above and beyond any correspondence with income levels and housing fiscal stress. There also exists a clear coincidence of foreclosures with subprime lending, itself

particular neighborhoods can be tremendously harmful to the social and economic health of the neighborhood. These comparisons help us to better understand the neighborhood ecology of foreclosure rates and subprime lending.

在九十年代和二十一世纪的头几年，抵押住宅被强制赎回大幅增加。这些赎回对介入的家庭和社区产生了深远影响。尽管强制赎回在世界各地都在发生，强制赎回的地理特征展示了与大都市地区社会，财政及经济地理学的相关模式。我们以2001年和2003年之间俄亥俄州顶峰县(阿克伦城)为个例对上述相关性进行了研究分析。不幸的财政事件会影响到任何家庭，强制赎回往往因此而产生，但是我们的个例研究表明，强制赎回的地理分布特征主要和顶峰县的种族分布相关，远远超出和其它诸如收入水平和住房财政压力的相关性。在强制赎回和次级抵押贷款之间也存在一个明显的相关，后者和顶峰县的种族分布格局也是相关的。在某一社区大量集中的强制赎回对该社区的社会和经济健康会产生巨大的危害。这些比较有助于我们更好地了解强制赎回率和次级抵押贷款的社区社会生态学。

Los juicios hipotecarios de residencias se incrementaron sensiblemente durante la década de los 90 y primeros años del siglo XXI. Tales juicios impactaron con fuerza los hogares y vecindarios implicados, y aunque estas son ocurrencias ubicuas, la geografía de estos problemas hipotecarios muestra un patrón ligado con la geografía social, fiscal y económica de un área metropolitana. En este artículo examinamos estas correspondencias presentes en el Condado Summit (Akron), Ohio, entre 2001 y 2003. Los propios juicios hipotecarios son a menudo el resultado de infortunados problemas financieros que pueden afectar a cualquier hogar, pero hemos descubierto que su geografía corresponde primariamente con la distribución racial del Condado Summit, más allá de cualquier correspondencia con niveles de ingreso y presiones fiscales sobre la vivienda. Se estableció también una clara coincidencia de estos problemas hipotecarios con préstamos subestándar de dudosa garantía (subprime lending), los que a su turno están asociados con los patrones raciales del Condado. La concentración de juicios hipotecarios en determinados vecindarios puede ser muy dañina para el bienestar económico y social de la comunidad. Las comparaciones hechas nos ayudan a entender mejor la ecología vecinal referida a las tasas de juicios hipotecarios y préstamos subestándares

Key Words:

ethnic segregation | foreclosures | housing | mortgages | predatory lending | racial geography

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Palabras clave:

Residential foreclosures increased sharply during the late 1990s and into the first decade of the twenty-first century (Hevesi 2002; Joint Center for Housing Studies 2007). Foreclosures represent a major household loss, but their causes and effects are profoundly geographical. Foreclosures are unevenly distributed, concentrated in particular neighborhoods. The number of residential foreclosures is partly an outcome of a neighborhood's social and racial composition, the presence and type of financial infrastructure, and neighborhood change. Moreover, a high degree of foreclosure activity catalyzes further, negative change (Immergluck and Smith 2006). The concentration of foreclosures damages the social and economic integrity of particular housing markets throughout a metropolitan area and by extension can sap the entire metropolitan area of much of its vitality.

This article reports on foreclosure activity in Summit County, Ohio, between 2001 and 2003. The value of this particular case study is our access to special data sets, available from the Summit County Recorder's Office, which allows us to examine the details of each foreclosure that took place in the fifteen-month period under study. This results in a rich database that shows not only the incidence and location of foreclosures in Summit County but also information on the lenders, loan terms, and interval between loan origination and foreclosure. In a few instances, we also utilize another database provided by Ameristate that examines all new mortgage loans in Summit County between 1999 and 2001.[1] This provides something of a control, as the Ameristate data report on all purchase loans during that period.

The use of these two data sets enables us to address three basic issues. The first is how foreclosure activity in this fifteen-month study was related to various lending practices, in particular subprime lending. In this, we seek to uncover whether foreclosed properties reflect markedly different terms from the control group of loans provided by Ameristate. The second issue has to do with the neighborhood relationship between subprime lending and measures of fiscal stress. The third issue examines foreclosures, again at the neighborhood level, together with the fiscal attributes, social attributes, and minority composition of neighborhoods. Here, we attempt to determine what

Causes of Foreclosures

In the United States, the number of new foreclosures rose continuously beginning in early 2000; by mid-2008 these numbers were greater than had ever before been tracked (Joint Center for Housing Studies 2007; Mortgage Bankers Association 2008). Several factors underlie this increase. Foreclosures are generally related to macroeconomic conditions and the changing fortunes of households and housing markets. Transformations in the landscape of mortgage lending, especially the phenomenal rise and the potential abuses of subprime lending, have been implicated in increasing the number of foreclosures, particularly among some segments of the home-buying population. Finally, we know that although foreclosures occur everywhere, they tend to be concentrated in specific geographical areas. These foreclosures, and some of the conditions leading to foreclosures, are tied into neighborhood ecology and neighborhood change.

The relationship of rising foreclosures to macroeconomic conditions is significant but will not be examined in detail here. Because foreclosures occur when householders are unable to meet their housing payments, regional economic dynamics play a critical role. High initial housing costs may compel prospective homeowners to seek financing with little or no money down and to stretch their monthly spending well beyond the recommended budget (O'Sullivan 2003). A weak or unstable employment situation increases unemployment, promotes personal bankruptcies, and eats into cash reserves. This compromises the ability of borrowers to meet their monthly payments. Borrowers unable to meet their payments have the option of selling their house to recoup any equity, but this only works when housing prices are rising. When prices decline, as has been the case in recent years in a vast number of metropolitan areas, borrowers may find that their mortgage debt is greater than the value of their property. When the loan-to-value ratio climbs above 100 percent, and is combined with such “trigger events” as divorce or unemployment, foreclosure becomes a necessary option (Capozza, Kazarian, and Thomson 1997).

Until the 1990s, households that applied for a loan did not have a great deal of choice. Lenders priced their loans according to the characteristics of the loan (e.g., fifteen-year, thirty-year, adjustable rate) and the attributes of the property. If a borrower was not

about the same price (Avery, Canner, and Cook 2005). Of course, this led to a host of abuses by which mortgage lenders avoided loans in the inner city and the provision of loans was racially biased (Dingemans 1979; Squires and Velez 1987; Shlay 1988, 1989; Bradbury, Case, and Dunham 1989; Myers et al. 1993; Buist, Megbolugbe, and Trent 1994; Leven and Sykuta 1994; Kaplan 1996). During the 1990s, however, a different kind of access was created through the expansion of subprime loans. Subprime lending exploded from a $35 billion business in 1994 to a $600 billion industry in 2005, and accounted for about 20 percent of mortgages in 2006 (Avery, Brevoort, and Canner 2006; Joint Center for Housing Studies 2007).

The reasoning behind a subprime loan is fairly simple. Borrowers who do not meet the credit criteria to secure a prime loan, often rated as A credit, need to settle for something else. Subprime borrowers are divided into categories of A—(sometimes termed Alt-A or near prime), B, C, and D, with nearly two-thirds falling within the A— rating and another one-quarter included as B ratings (Center for Responsible Lending 2003). In return for the increased risk that such borrowers entail, subprime loans are more expensive, either in the assessed interest rates, up-front fees or points, or a combination of both. Subprime loans are a way for many borrowers to qualify for mortgages that would have previously been out of reach. In turn, subprime lenders are attracted to lower and moderate-income households because such households constitute a good market for subprime loans. The securitization of subprime loans, where these could be packaged together and sold to investors, fueled the system with more capital and (it was thought) reduced the risk to the lender (Carr 2007).

Because subprime loans are ostensibly offered to households unable to participate in the prime mortgage market, they could be viewed as a facilitator of home ownership. In fact, by 2004, home ownership had reached an all-time high of 69 percent (U.S. Census Bureau 2008). Subprime loans, however, have been tied to an increased risk of foreclosure and greater economic stress (see National Training and Information Center 1999; Sturdevant and Brennan 1999; National Consumer Law Center and Consumer Federation of America 2000; Immergluck and Smith 2005; Carr 2007). Nationally, the rate of foreclosures increased by 68 percent between 1993 and 2002 (Hevesi 2002). These increases were found exclusively within the subprime market; foreclosures among prime loans actually dropped during this same period.[2] Studies of Chicago, Baltimore, and Atlanta indicated that the foreclosure increases “paralleled” increases in subprime lending (U.S. Department of Housing and Urban Development [HUD]2001;

but were also more likely to demonstrate a shorter interval between loan origination and foreclosure proceedings, often less than 2 years (Bunce et al. 2001; HUD 2001).

Basically, subprime lending extends mortgage credit to less financially stable households, precisely those borrowers who have fewer resources to ride out economic misfortune. The cooccurrence between subprime lending and foreclosure may be an aspect of the additional risk incurred, as subprime borrowers tend to be less creditworthy and more likely to default. Although many subprime loans provide a legitimate service to borrowers who would not otherwise be able to obtain a mortgage, there is a great deal of evidence that a substantial number of these subprime loans exploit borrowers—these are termed predatory loans. Li and Ernst (2007) summarize these practices as (1) equity stripping, which comprises overly high interest rates and extra fees that are often packed into the loan itself; (2) flipping of the loan so that it automatically refinances, generating additional fees for the lender; (3) steering qualified borrowers away from prime loans toward loans with higher fees; (4) prepayment penalties that prevent borrowers from seeking out a better loan when their credit improves; (5) fraud, misrepresentation of all loan terms, and incorrect evaluation of the property value of the borrower's income. Fishbein and Bunce (2001, 276) state that “one consequence of predatory lending is that borrowers are stripped of the equity in their homes, which places them at an increased risk of foreclosure.” Quercia, Stegman, and Davis (2007) found that refinance loans containing predatory terms such as prepayment penalties and balloon payments were much more likely to experience foreclosure.

Despite their increasing prevalence, foreclosures are not spread evenly throughout the metropolitan area but are instead clustered in specific neighborhoods. Since the number of foreclosures began to rise in the mid-1990s, inner-city neighborhoods have borne a disproportionate burden (National Training and Information Center 1999; Van Order and Zorn 2000). A recent metropolitan-scale analysis of Hennepin and Ramsey Counties in Minnesota demonstrated that the inner cities of Minneapolis and St. Paul contain most of the high-foreclosure census tracts (Grover, Smith, and Todd 2008).

General factors leading to foreclosures also appear in any analysis of neighborhood ecology. Measures of housing fiscal stress, manifested in high interest rates and high loan-to-value (LTV) ratios, are themselves spatially concentrated and correlate with foreclosure activity (Van Order and Zorn 2000; Phillips and Vanderhoff 2004). Economic

and Lauria (2000, 675) situated foreclosure rates in the midst of a series of conditions and transitions, hypothesizing that “residential mortgage foreclosure is one factor that mediates the effects of economic market factors and racial variables on homeownership patterns, housing vacancy rates, and changes in the racial composition of urban neighborhoods.” In their analysis, foreclosure rates were higher in black neighborhoods and in neighborhoods undergoing extensive racial change.

Like foreclosures, subprime lending is itself spatially uneven. Subprime loans are three times more likely to occur in low-income compared to high-income neighborhoods and five times more likely to occur in African American neighborhoods than in white neighborhoods (HUD 2000). Even with income controlled for, high-income black neighborhoods reported twice as many subprime loans as low-income white neighborhoods (HUD 2000). Calem, Gillen, and Wachter (2004) also find a concentration of subprime lending in low-income and high-minority neighborhoods within Chicago and Philadelphia. Wyly et al. (2006) compare the supply-side characteristics of lending niches, market share, and type of institution with demand-side characteristics such as type of loan, creditworthiness, income, and race. In neighborhoods where there is more subprime activity than predicted by supply-side characteristics, they conclude that “bad money chases good borrowers” (119) and the level of subprime activity is unfairly inflated. In addition, there is the prospect that certain households—especially those living within certain neighborhoods—may end up with a subprime loan even when they qualify for a prime loan. Studies conducted by Freddie Mac and Standard & Poor indicated that about one-half of the A-borrowers would qualify for a conventional, prime loan (Center for Responsible Lending 2003). Given that these A-borrowers are about two-thirds of the subprime market, this means that one-third of subprime borrowers should be able to acquire the better terms of a prime loan. Some of these discrepancies can be accounted for by race, as African American borrowers are more likely to receive a subprime loan, even when controlling for credit and location variables (Pennington-Cross, Yezer, and Nichols 2000). Because of the clear relationship between subprime lending and foreclosures, those neighborhoods with a high incidence of subprime lending are often the same neighborhoods where foreclosures are disproportionately concentrated (Immergluck and Smith 2005).

This study addresses these issues by first offering an assessment of some of the characteristics of mortgage loans that lead to foreclosure and how these compare with

and subprime lending in Summit County during this same period. Finally, we put these all together to determine how the geographical pattern of foreclosure activity corresponds with significant neighborhood characteristics, including subprime lending. Although several studies have looked into some of these aspects, this study benefits by our access to the precise location, lender, origination data, foreclosure data, and terms of nearly all foreclosures within one of the most housing-distressed counties in one of the most housing-distressed states in the United States.

Attributes of Foreclosed Properties

Foreclosures have had negative effects throughout the United States, but the impacts are particularly bad in Ohio. According to the U.S. Census, Ohio tends to fall in the middle of states in regard to several economic and demographic characteristics, although it has a much smaller percentage of Latinos and Asians. However, Ohio in the 1990s began to diverge from many other states in regard to the health of its housing market. Bond (2005) reports that in 1995, Ohio's mortgage default rate (the percentage of mortgages in foreclosure) was a little lower than the U.S. rate (0.67 percent compared to 0.87 percent, respectively). By 2004, however, the U.S. default rate had climbed to 1.5 percent, and Ohio's rate was 3.5 percent. Bond sees this as primarily a function of Ohio's relatively weak economy—the state has undergone significant industrial restructuring—and lower levels of housing appreciation, but other factors may also play a role.

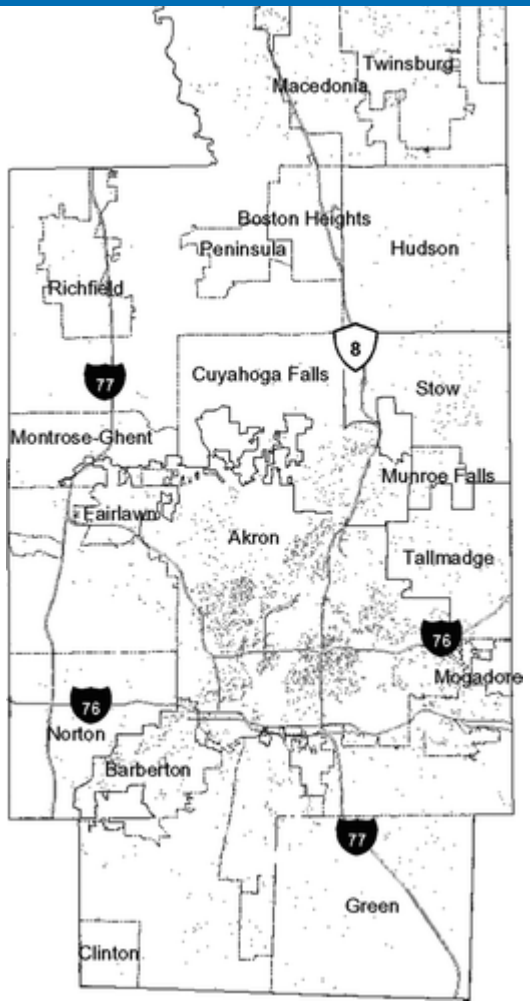
Our analysis begins with a single county as a means of getting more detailed, individual, and neighborhood-level information regarding the causes of foreclosures. Summit County, which includes the city of Akron, was particularly hard hit by the explosion in foreclosures, even by Ohio standards. Summit County is similar to the state of Ohio with respect to population composition, home ownership rates, median housing value, and household income. Yet in 2006, Policy Matters Ohio reported that Summit County suffered the third highest rate of foreclosure filings to population in the state (Schiller 2007). Unfortunately, this was no aberration. The county also provides excellent documentation of each foreclosure filing. For the period between October 2001 and January 2003, each foreclosure in Summit County was entered with information related to location, lending institution, and particular loan terms, including

data to include only those foreclosures with clear information on geography and lender, we were left with a total of 2,958 foreclosures, of which 1,963 were originated by prime lenders and 995 by subprime lenders.[3] Most of these foreclosures also contained information on interest rates (2,891) or loan amount (2,929).

Most of the Summit County foreclosures occur within the city of Akron. Whereas the city contains 40 percent of the county's housing units, and 35 percent of all owner-occupied units, it accounts for 70 percent of all foreclosures. Moreover, the bulk of foreclosures are accounted for by just a few neighborhoods, with one-fifth of all block groups in Summit County accounting for half of all foreclosures. This does not mean that foreclosures are not found in suburban areas—in fact there are indicators of stress in some of the wealthiest suburban districts—but the incidence is far higher in urban neighborhoods.

The attributes of properties that eventually undergo foreclosure are distinct from those of other properties. They are concentrated in particular locations, as Figure 1 indicates. They also tend to be focused on a few lenders, a disproportionate number of which are subprime. Just forty lenders in our foreclosure database accounted for over half the properties that were foreclosed. These high-foreclosure lenders carried at least twenty or more foreclosures with the most foreclosures (119) recorded for Equicredit. Equicredit is determined by HUD to be a subprime lender, meaning that more than one-half of its loans are subprime loans. In this regard, it represented many of the high-foreclosure lenders. Fully nineteen of the forty high-foreclosure lenders could be identified as subprime; overall, one-third of the loans in the foreclosure database originate from subprime lenders. This contrasts with all new mortgage originations between 1999 and 2001, as detailed by the Ameristate data set, where less than one out of ten of the loans originated from subprime lenders.

Figure 1 Summit County foreclosures. Each dot equals one foreclosure.



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As can be seen in Table 1, properties that experience foreclosure tend to carry much higher interest rates and lower mortgage loan values. For the entire set of foreclosures that we could examine, the average interest rate was 9.5 percent, and the average loan value was just over $61,000. However, this average covers a broad spectrum of years and is thus difficult to compare to other property loans. To make a better comparison, we used two pieces of evidence. First, we extracted only those foreclosed properties with loans originating between 1999 and 2001. Then we compared them to the Ameristate data, which cover all new loans for the period between 1999 and 2001 (only about 10 percent of the Ameristate records contained information on the interest rate; a higher proportion contained information on the loan value).

Table 1 Summit County loan data: 1999–2001

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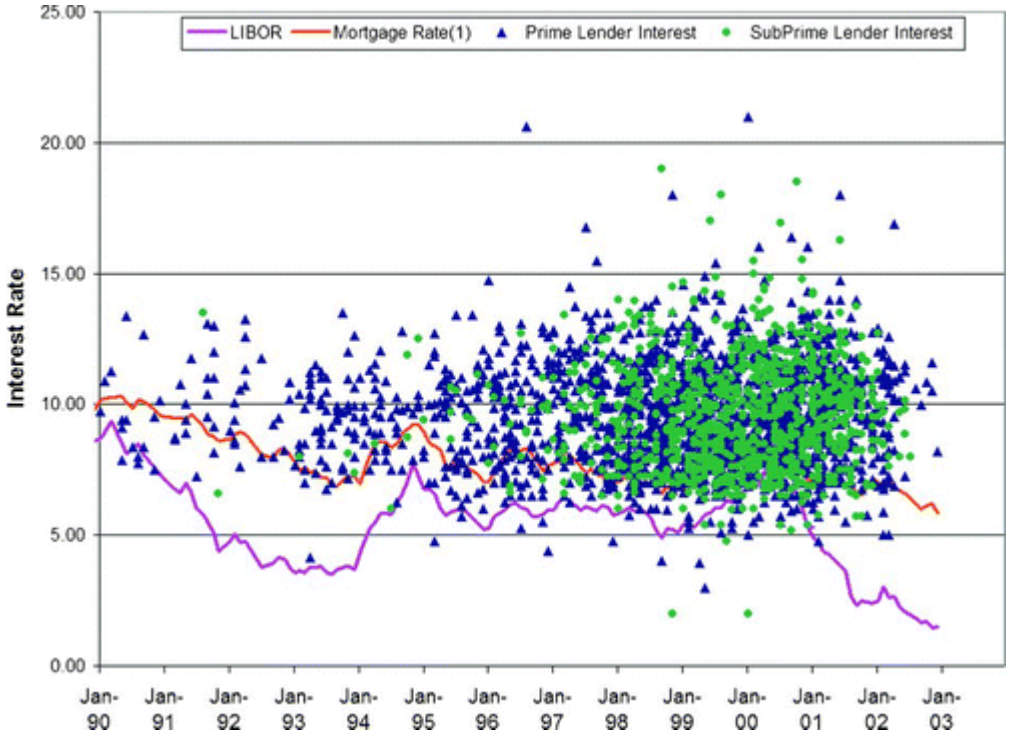
On average, foreclosed properties began with smaller loans, consistent with the fact that foreclosure tends to strike poorer households more frequently. Among the set of all new loans, loans from subprime lenders were substantially smaller than prime lender loans, again related to the higher incidence of poorer households taking out subprime loans. There was no real difference among those property loans that led eventually to foreclosure. Looking at interest rates, the difference between loans by prime and subprime lenders among foreclosed properties was negligible. When these foreclosed properties are compared to all properties, however, it depends on whether the comparison is made among prime or subprime lenders. Considering prime lenders, foreclosed properties had much higher interest rates compared to all new loans. Considering subprime lenders, foreclosed properties averaged slightly lower interest rates. Moreover, prime lenders issued a slightly higher proportion of adjustable rate mortgages and balloon mortgages than subprime lenders, contrary to what much of the literature suggests.

Our second piece of evidence compares the mortgage rate of a foreclosed property with the prevailing rate at the time of the loan's origination. Two indicators of prevailing rates are shown in Figure 2. First, there is the one-year London Interbank Offered Rate rate, a common benchmark interest rate that determines what sort of interest people pay on a whole host of loans, including mortgage loans. Second, there is a measure of thirty-year mortgage rates by month as determined by Freddie Mac. Comparing the interest rates for the foreclosed properties with these two benchmarks yields the graph in Figure 2. Although there are a few interest rates below the prevailing mortgage rates throughout the 1990s and early 2000s, most of the rates are much higher than existing rates. This is true among both subprime and prime lender loans. Based on these data, we might speculate that several lenders made loans that were well above prevailing interest rates and in fact could be considered predatory solely on the basis of the assessed interest rates alone. This chart also calls into question the common usage of the list of subprime lenders provided by HUD. Much of the analysis of mortgage lending considers all loans from flagged subprime lenders to be subprime loans. This might not necessarily be the case. Subprime lenders can make prime loans. Conversely, several prime lenders make high-interest loans that could be considered subprime or even predatory. Such higher interest loans entail higher monthly costs and so can make it difficult for a borrower to keep up with monthly payments.

Figure 2 Comparison of mortgage rates from foreclosed properties. LIBOR = London Interbank Offered Rate.



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One final finding of the foreclosure data is the short interval between when the loan originates (as recorded in the foreclosure documents) and the date of foreclosure. Our calculations suggested that the vast majority (83 percent) of loans foreclosed within five years and over one-third (36 percent) foreclosed within just two years of loan origination. The average interval between loan and default was three and one-half years. Why such foreclosures occur is not available in the data. Earlier research indicated that it can be the result of personal and financial catastrophes that make it impossible to keep up with payments (Family Housing Fund 1998). Foreclosure is more likely to occur, however, when households obtain loans that they are ill equipped to handle, possibly because the amount of debt servicing is too high based on the applicant's income. The fact that many foreclosures occurred so rapidly after the loan was originated suggests that foreclosure was a result of a faulty loan.

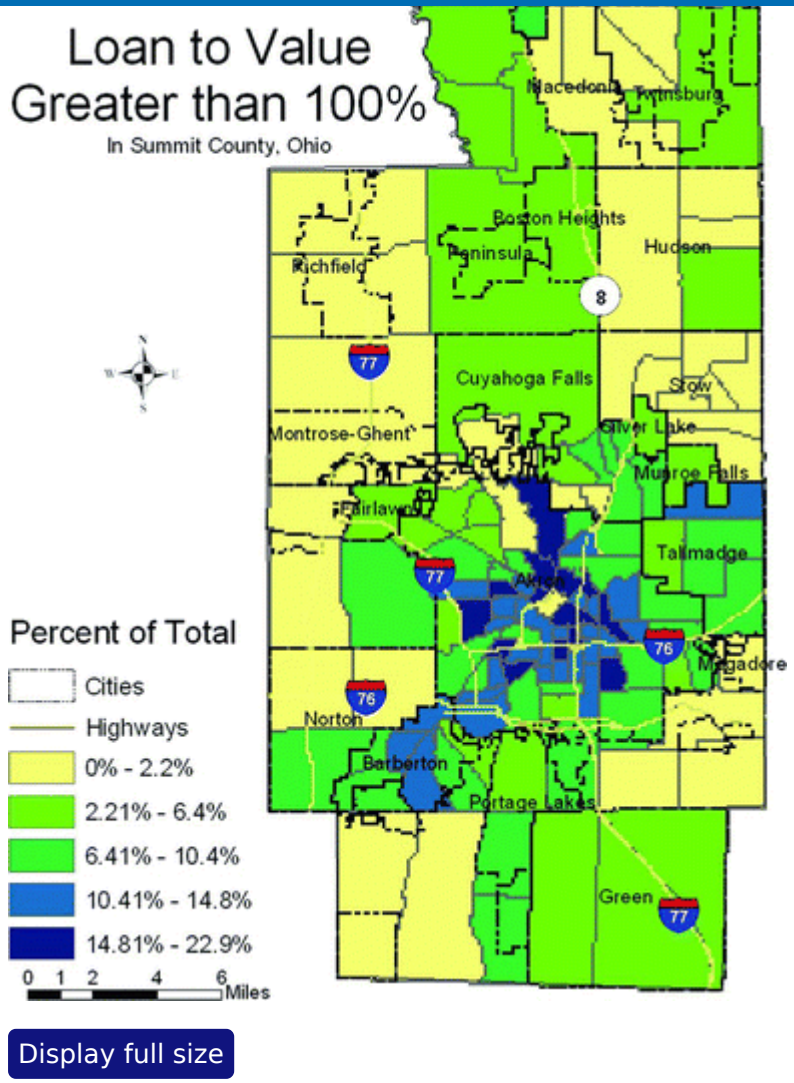
Housing Fiscal Stress and Subprime Lending

As noted earlier, foreclosures have been linked to predatory lending (Quercia, Stegman,

measure at an aggregate level, but it does tend to be indicated by loans that are at par or even above the value of the property, higher than average interest rates, and subprime lending. To give an idea of how these geographies play out in Summit County, we calculated and mapped three indicators: housing stress, interest rates, and subprime lending.

Housing fiscal stress has been tied to a higher incidence of foreclosures on one hand (Phillips and Vanderhoff 2004) and to higher interest rates on the other (Nothaft and Perry 2002). The evidence shown in Figure 2 also confirms this relationship. Nearly half of all foreclosures in our sample held mortgage loans with interest rates at least three percentage points above the prevailing mortgage rates. One out of six foreclosed properties contained mortgage loans with a spread greater than 5 percent above prevailing rates. One measure of housing stress—the housing finance ratio—indicates when the percentage of the monthly budget devoted to housing is too high. Another useful measure of housing stress is the LTV ratio. In the past, borrowers of conventional mortgage instruments were expected to make a down payment of at least 20 percent of the property value, with the remaining 80 percent financed. These stipulations were relaxed for households that took out a Veterans Administration (VA) or a Federal Housing Administration (FHA) loan. Other lending programs have allowed households to borrow more than 80 percent of the property value, provided they take out additional mortgage insurance. In some instances, borrowers are able to borrow more than the value of their property. These additional amounts absorb costs associated with the mortgage, like points and closing costs, and can also be a vehicle for “packing” additional fees. High-LTV loans have also been offered as a form of home equity, allowing borrowers to finance home improvements and even non-property-related items. These loans are notoriously risky and are much more likely to lead to default (Van Order and Zorn 2000).

The Ameristate data sources allowed for the calculation of LTV for nearly every home loan in Summit County between 1999 and 2001. For most such loans, the value of the mortgage is given along with the value of the property itself. Figure 3 indicates exactly where the amount of the loan is greater than the value of the property, sometimes a harbinger of later foreclosure. As seen in Figure 3, nearly all of the census block groups with the highest levels of housing stress are found within the city of Akron.



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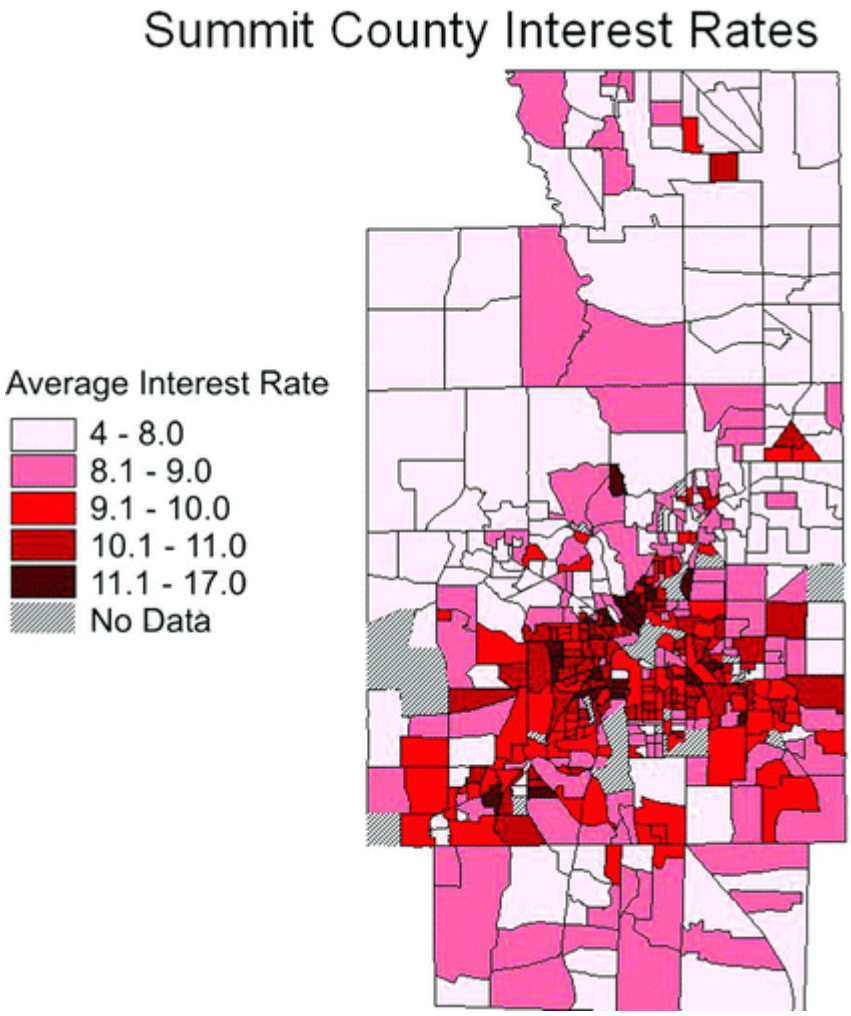
Interest rates paid for a mortgage vary by week, loan type, loan term, and lender. Although subprime loans assess a higher interest rate than prime loans, some loans charge far more interest than what subprime credit risk would justify. This was made clear in Figure 2, which examined individual foreclosed properties, but it does not address the question of whether mortgage interest rates tend to vary geographically among all loans. An examination of interest rates provides for some useful comparisons across neighborhoods to see whether any meaningful patterns emerge. Nothaft and Perry (2002) show that borrowers in low- and moderate-income neighborhoods paid slightly higher rates for thirty-year mortgages but that the racial composition of a neighborhood did not appear to have a significant effect. This study was conducted from 1992 to 1995, however, and so missed the explosion in subprime lending. To answer this question, we consulted the Ameristate database, which includes data on all new mortgage loans (not refinances) between 1999 and 2001. Approximately 10 percent of the records (about 3,600) within the Ameristate database provide information on the interest rate. During this period, prevailing thirty-year rates varied between 6.45 and 8.64 percent and averaged about 7.5 percent.[4] Figure 4 shows the

pattern of average interest rates from a more recent period and shows that average residents of neighborhoods in Akron's inner city paid more for their mortgages.

Figure 4 Average interest rates, Summit County 1999–2001.



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The distribution of subprime lending might help to explain why. The third indicator looks at subprime loans or, more accurately, loans originated with subprime lenders. To be sure, all subprime loans should not be considered predatory, but analysts have scrutinized the growth and geographical distribution of such loans with some concern (Immergluck and Smith 2005). Subprime loans are more likely to be found in poor neighborhoods—perhaps understandable given the poor credit history of many residents—but are also disproportionately found in African American neighborhoods. The factors behind this can be partially due to levels of income, levels of wealth, and credit history. LaCour-Little (2004) shows how the probability of obtaining a subprime mortgage increases with lower credit scores. Subprime credit can also be related to the

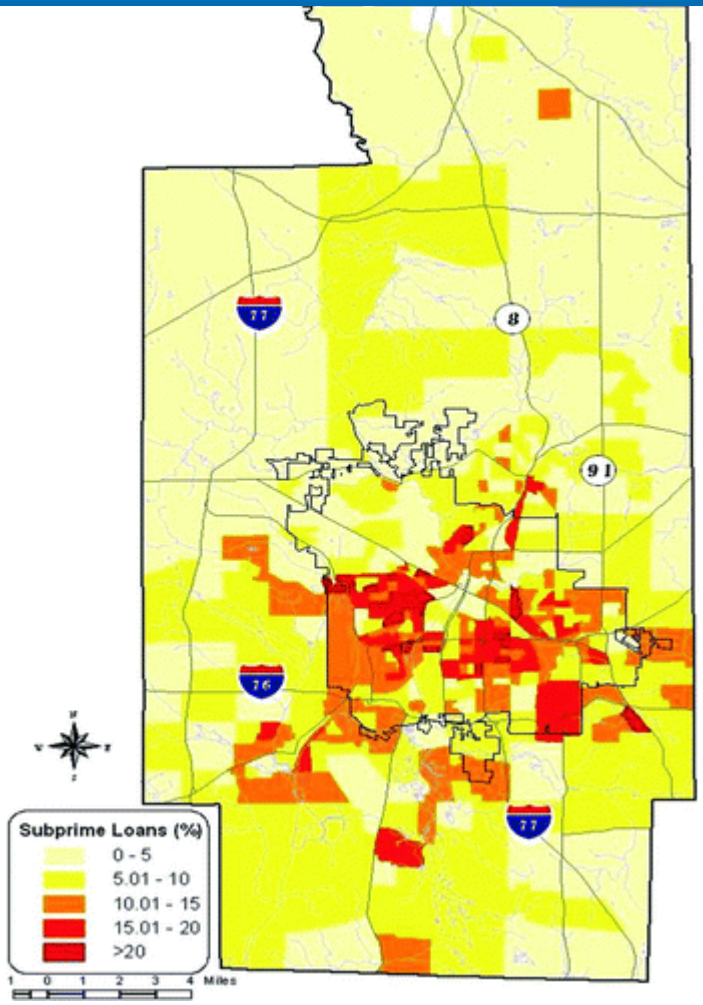
reliance on subprime lenders, even among those who might otherwise qualify for prime loans (LaCour-Little 2004).

In Summit County, our data indicate that subprime loans are concentrated within a few neighborhoods. Akron itself has just a little more than half of the total number of loans compared to the suburban areas in Summit County, but about two-thirds of all subprime loans. In most of the county, particularly in the suburbs, subprime loans account for less than 10 percent of all loans. Within some neighborhoods in Akron, however, subprime loans account for more than 20 percent of the total. These neighborhoods with a high incidence of subprime loans cover about half of the city of Akron.

Neighborhoods where subprime activity is exceptionally high (over 22 percent) share a number of characteristics. They all have a high minority proportion, primarily African American. Generally, levels of income are lower and poverty rates are higher. These attributes do not always vary in tandem, however. Among our sample, two neighborhoods manifest a slightly lower poverty rate than the countywide average, but these neighborhoods are also marked by high minority percentages.

The maps in Figure 3, Figure 4, and Figure 5 demonstrate that high LTV ratios, higher interest rates, and a high percentage of subprime loans seem to cooccur within similar neighborhoods. The percentage of loans that are subprime is moderately correlated with interest rates ($r = 0.55$). The relationship between subprime lending and LTV ratios over 100 percent is quite a bit weaker ($r = 0.36$), as is the correlation between interest rates and LTV ratios over 100 percent ($r = 0.36$). Interestingly, the correlation of LTV ratios over 80 percent and LTV ratios over 100 percent is unexpectedly weak ($r = 0.28$), indicating that these represent very different neighborhoods. Taking out a mortgage loan with less than 20 percent down is a normal feature of home ownership today and occurs in all kinds of neighborhoods. That is not the case, however, where loans exceed house value. This is spatially concentrated and more likely to be associated with other measures and outcomes of fiscal stress.

Figure 5 Percentage of subprime loans in Summit County, 1999–2001.



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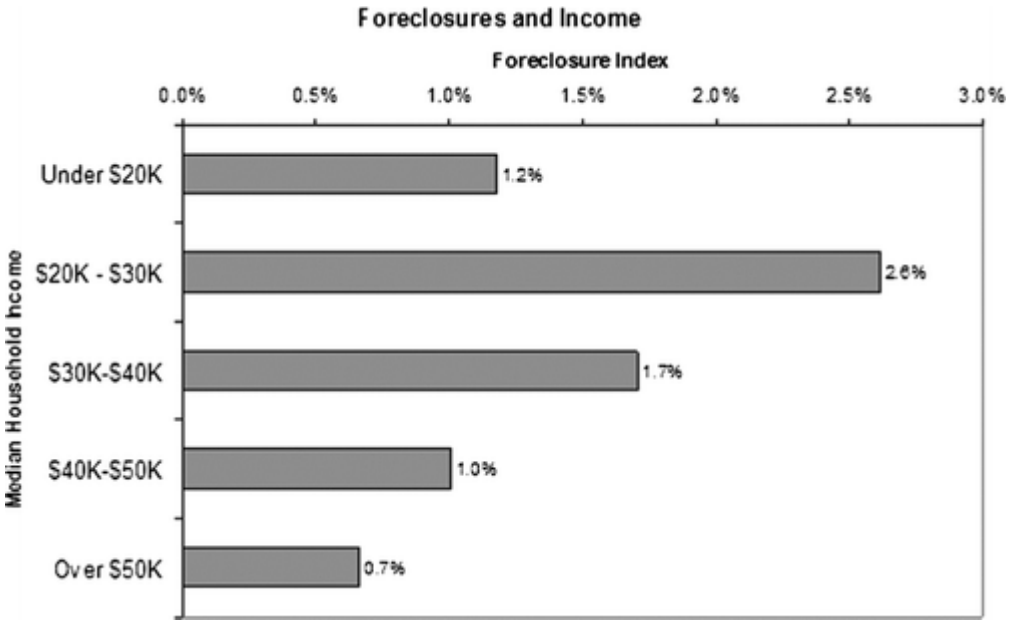
Neighborhood Correlates of Foreclosures

To obtain a better gauge of how the distribution of foreclosures corresponds with neighborhood attributes, we developed a foreclosure index that standardized the number of foreclosures by the number of housing units within the block group. A block group is a geographic unit that is nested within the more commonly used census tract and averages around 1,000 people; there are 477 block groups within Summit County. Our foreclosure index includes vacant as well as occupied units but seemed to be the best measure because a property does not have to be occupied to be subject to foreclosure. The foreclosure index varied from a low of zero for twenty-nine block groups up to a high of seventy-eight (per 1,000) for one block group. The average foreclosure index is fourteen (per 1,000) and the median is nine (per 1,000), indicating that the distribution is positively skewed with a long tail of high-foreclosure block groups. We also employed a logged version of this foreclosure index but felt that the

unlogged version yielded better results and fit better with our other block group attributes.

Analysis of the correlates of neighborhood foreclosure activity suggests that there is a strong relationship with household income and race. The variations by neighborhood type were striking. Looking first at median income rates (Figure 6), foreclosure rates are very high in those block groups where the median income ranges between $20,000 and $30,000. Foreclosure rates drop sharply for all higher income neighborhoods. Interestingly, lower income neighborhoods also have lower foreclosure rates. Renting is much more common in these neighborhoods and the proportion of owner-occupied units is low, at under 25 percent in most cases. Because renters cannot be foreclosed on—only evicted—these neighborhoods appear to be at far less risk.

Figure 6 Foreclosures and median household income, Summit County.



Display full size

The calculation of minority percentage combines African American, white Hispanic, and Asian American groups (Figure 7). Keep in mind that both the Hispanic and Asian percentages are quite small (1.1 percent and 1.8 percent, respectively, compared to 14 percent African American) and likely have little effect on the findings. Here, evidence exists of a monotonic relationship between foreclosure rates and a neighborhood's minority status. Majority minority neighborhoods have more than three times the rate of foreclosure as neighborhoods with a small (less than 10 percent) minority population.

Figure 7 Foreclosures and minority status, Summit County.

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Minority percentage is partially a function of income, as poorer neighborhoods tend to have a higher minority percentage. The evidence suggests, however, that this occurs in a manner partly independent of income. One way to test this is to divide block groups into income and minority ranges. The resulting figures indicate that at each income range, foreclosure rates step up with increased minority percentage, often dramatically. The only partial exceptions are those block groups with median incomes between $40,000 and $50,000. In this case the foreclosure rates among majority minority neighborhoods are slightly lower than rates among those neighborhoods with between a one-quarter and one-half minority population. In both of these cases the number of block groups is small, and this could skew the findings.

Bivariate correlations between the foreclosure index and neighborhood attributes indicate some strong relationships. First and foremost, the correspondence with subprime lending is clear ($r = 0.59$). Block groups with a very high incidence of foreclosures (a foreclosure index over 4 percent) have more than four times the level of subprime lending as those neighborhoods with a low incidence of foreclosures.

Other neighborhood attributes are likewise important. The percentage African American and the percentage minority are both highly correlated with foreclosures, although racial change from the previous ten years is not. Median household income is also inversely correlated, as suggested in Table 2. A couple of other indicators of economic weakness—unemployment rates and poverty rates within the neighborhoods—are both

years exhibits a slight but significant inverse relationship. Some researchers have hypothesized that neighborhoods with many vacant properties are also more likely to experience foreclosures, creating a vicious circle in that foreclosures so often lead to vacancies. Baxter and Lauria (2000) did not find a direct relationship between foreclosures and vacancy rates, but they did find that there were some indirect effects. We likewise did not witness any linear relationship between the two variables; neighborhoods that experienced a rise in vacancies were not any more or less likely to see greater foreclosure activity.

Table 2 Correlates of neighborhood foreclosure

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Some of the literature on predatory lending has indicated that elderly women are especially susceptible to foreclosures (Immergluck and Smith 2005). Our analysis indicated, however, that this was not the case for Summit County. In fact, many of the neighborhoods with a higher proportion of elderly women were less likely to experience foreclosures.

One set of variables that were significant included three measures of economic stress. We have already discussed the importance of LTV ratios, and an LTV ratio over 100 percent is clearly more related to foreclosure rates than an LTV ratio over 80 percent. Another way to measure fiscal stress, gathered from the U.S. Census, was through the percentage of homeowners whose mortgage payments exceed 30 percent of household income, beyond the recommended percentage of debt. This was moderately associated with the foreclosure index.

One question that might be raised is the extent to which the correlation between foreclosures and subprime lending explains much of the relationship with the other variables, particularly race. As the second column in Table 2 indicates, there is some indication of this relationship, but certain variables exert an effect independent of subprime percentage. Racial variables hold up even when controlled for subprime lending. Most other variables also continue to have some, although generally a weaker, effect. The one variable that is most affected is median household income. A simple bivariate correlation indicates that foreclosure incidence decreases with an increase in

opposite. Lower income neighborhoods are more likely to have a larger subprime presence, which in turn leads to higher foreclosure rates. At least at the neighborhood level, however, there is no independent effect of household income on foreclosures; it is instead mediated through the incidence of subprime lending.

Our final piece of analysis placed all of these variables within a simple multivariate model. This model utilizes ordinary least squares regression because the results are easier to interpret. Variations in variable conditioning were tried, including quadratic and logarithmic formulae, but a simple linear regression seemed to work best. Many other variables were also attempted, including several variables that showed changes from 1990 to 2000,[5] but the variables listed in Table 3 are those that made the most intuitive sense.[6] Moreover, we chose to go with a fairly straightforward model, although a path model that showed how racial and economic factors are mediated through subprime lending and other mortgage indicators could be a useful analysis to consider in the future.

Table 3 Regression of neighborhood variables on foreclosure index

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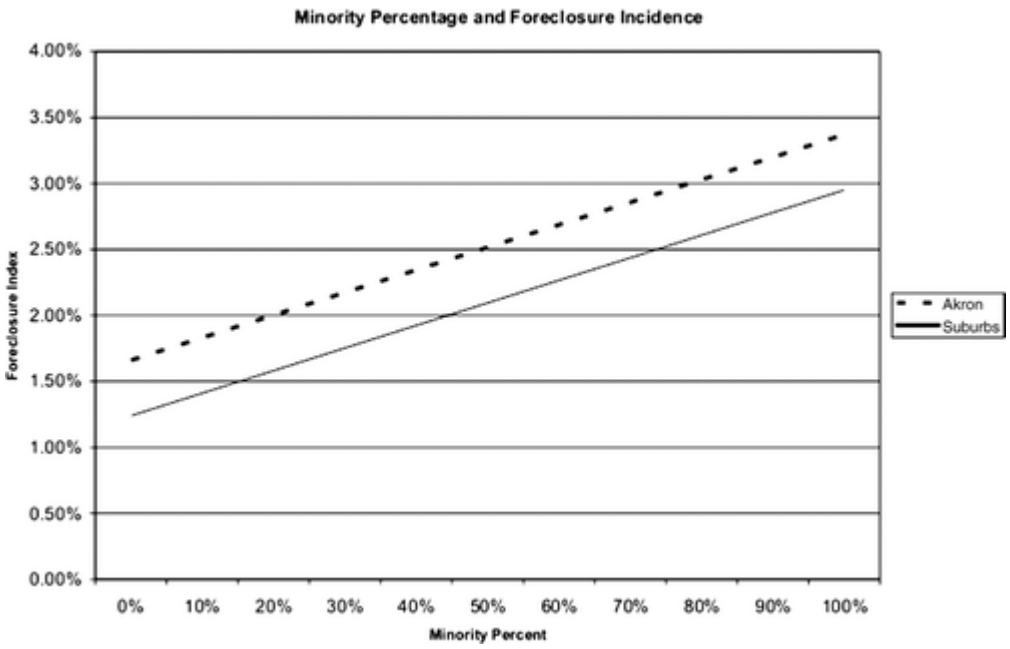
Table 3 is separated into Model 1, which includes a number of relevant demographic and socioeconomic variables, and Model 2, which also includes variables related to housing finance and vacancy rates. Just based on neighborhood characteristics, Model 1 explains a great deal of the variance ($R^2 = 0.468$). With housing finance variables added, Model 2 performs substantially better ($R^2 = 0.546$). The significant variables are essentially the same as in results presented previously. Racial composition plays a tremendous role in the geographical distribution of foreclosures. Increasing minority percentages between 1990 and 2000 are inversely related to the foreclosure index. Also significant is the location within the central city of Akron.

Various income variables appear in a counterintuitive manner. Whereas median household income is negative, as expected, the percentage in poverty is also negative and the unemployment rate is not significant. The proportion of elderly women is negatively related to foreclosure rates, as is the percentage of movers (those people who were not in their present home five years earlier).

When a set of housing and housing finance variables are introduced (Model 2), race and Akron location retain their importance. The percentage in poverty, the percentage of movers, and the percentage of elderly women are all negative, as with Model 1. Three of the new fiscal variables are also significant. The proportion of subprime loans exerts a powerful effect, second only to racial composition. Two measures of household budgetary stress—the proportion with mortgage payments over 30 percent of income and the proportion of mortgage loan amounts greater than the value of the property—are also significant. Vacancy rates and the change from 1990 to 2000 are not significant within this larger model.

These relationships could probably be teased out further, but the important aspects of these findings would likely not vary. The rate of foreclosure is primarily related to race, central city location, and financing and budgetary stress. The racial aspect is more alarming, as it continues to exert such a strong independent effect. Figure 8 shows just how important the effect of minority composition is, even with all of the other variables in the completed model held constant. Akron exhibits a higher foreclosure incidence than the suburbs, but the likelihood doubles with increasing minority presence. This is also true of the suburbs. An interaction variable that combined minority percentage and city or suburban location did not add any meaningful information to the model.

Figure 8 Minority percentage and foreclosure incidence, Summit County.



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Conclusions

During the last decade, residential foreclosures affected some neighborhoods particularly hard. Each foreclosure represents a household tragedy but also contributes to neighborhood instability through greater vacancies, lost revenues, and greater levels of crime (Boylan 2001; HUD 2001; Stein 2001). Foreclosures have been shown to depress property values as well. Simons, Quercia, and Maric (1998) demonstrated that average sale prices for neighboring properties fell by $788 for every percentage increase in tax delinquencies. Immergluck and Smith (2006) estimated that each foreclosure resulted in a decline of 0.9 percent in the property value of single-family homes within an eighth of a mile and that the effect was greater in moderate- and low-income neighborhoods. More anecdotal evidence indicates that foreclosures can submerge afflicted communities (Schwartz 2007).

Current research has focused on some of the causes underlying foreclosures. To be sure, the regional economy and housing markets play a role. In the past year, foreclosures and delinquencies affected an astonishing one out of ten households nationally (Mortgage Bankers Association 2008). This wave of foreclosures has been partly driven by adverse economic conditions and declining property values, forcing many households to go under. The housing market was far more robust, even in northeast Ohio, during the period of this study (2001–2003). At the same time, foreclosures continued to increase, particularly in some neighborhoods. The reasons for this seem to lie in the changing nature of lending and the tendency for subprime and predatory lending to focus on particular areas. Although foreclosures occur throughout the metropolitan area and among a large range of households, these patterns suggest a process by which the combination of spatial inequity, household characteristics, and lending activities within certain neighborhoods and among particular households creates conditions that make foreclosures more likely.

Our analysis, based on one of Ohio's most distressed counties, indicates that foreclosed properties suffer from much higher interest rates, whether the loan originates from a prime or a subprime lender. The data we have do not show a marked increase in some other terms, such as balloon payments and adjustable rate mortgages, often implicated as factors leading to foreclosure. The evidence we had available did not allow us to determine whether the foreclosed properties in our database carried extra fees.

We also demonstrate that the foreclosures filed in Summit County between 2001 and 2003 were geographically concentrated. This pattern is partly related to the geography of income; certainly residential foreclosures are more frequently located in poor neighborhoods. This pattern is also equated with neighborhoods that experience a great deal of housing stress, and with neighborhoods that experience a significant amount of subprime lending. Maps and correlation coefficients suggest that LTV ratios, interest rates, and the percentage of subprime loans covary within similar neighborhoods and these, not coincidentally, are the neighborhoods that also experience a high number of foreclosures. Beyond these factors, what also stands out is the fact that the percentage of minority residents within a neighborhood has a significant independent effect on the rate of foreclosure, even when the percentage of subprime lending is held constant. Ironically, these were precisely the types of neighborhoods that suffered from low mortgage originations and high denial rates before the advent of subprime lending in the mid-1990s.

One item that is much harder to tease out from this analysis is the actual impact of predatory lending. Certainly some studies have examined subprime lending as a surrogate for predatory lending. At least as conventionally undertaken, this is problematic because the available data sets only flag lenders that have a majority of their loans in the subprime market. As our analysis of foreclosed property interest rates indicates, both prime and subprime lenders can make high-interest loans, adjustable rate loans, or balloon loans. However, the newest Home Mortgage Disclosure Act (HMDA) data may help solve this conundrum because it flags those loans, from all lenders, that charge higher interest rates (Avery, Canner, and Cook 2005). At the same time, the availability of credit score information would be tremendously useful in allowing us to determine how many of these higher interest loans are related to higher risk. Making this information available could prove as useful as when the original HMDA data—released in 1975 and refined in 1990—allowed us to see the patterns of mortgage denials and mortgage originations.

Much of the current political discussion of foreclosures focuses on the broad scope of the problem. Some suggested fixes—including the reduction of loan balances among precarious borrowers and government assistance in moving from adjustable loans to fixed rate loans—are intended to stop the hemorrhaging of the housing market, but are also seen by some as too expensive and unfair to other mortgage holders. The current cascade of foreclosures is largely a result of a depressed housing market and a weak

markets improve, foreclosures should decrease overall, but they might not decline everywhere. Foreclosures have been increasing in many inner-city neighborhoods since the mid-1990s, during both good times and bad. The reasons seem to have a lot to do with the nature of lending. Policies that curb predatory lending—in all of its manifestations—could go a long way toward easing the blight of foreclosures where they are at their worst.

Acknowledgments

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Notes

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1. There are two substantive differences between the two data sets. First, our database of foreclosed properties includes mortgages that originate in any years leading up to 2003. Ameristate properties include properties with mortgages that originated in the years 1999 through 2001. Second, the database of foreclosed properties includes both

do not cover refinances, which can be a great source of subprime loans and loans that lead to foreclosure. We realize that these differences do not allow for exact comparisons, but we believe that the value of comparing the two data sets outweighs the drawbacks.

2. Most recently, foreclosures have cast a broader shadow. The combination of a soft housing market, job losses, and a climb in adjustable rates has increased the risk of foreclosures among holders of prime loans (Bajas and Story 2008; Schwartz 2008). Moreover, foreclosure incidences in the suburbs have increased more rapidly than within the inner city, although the inner city continues to be disproportionately affected ("Predatory lending fallout spreads" 2002; Housing Research and Advocacy Center 2008).

3. The definition of a subprime lender is based on information provided by HUD. Each year HUD puts out a list of subprime lenders and its methodology counts a lender as subprime if more than 50 percent of all its loans are subprime. This method might understate the size of the subprime market because lenders who specialize in prime loans, like most of the major banks, can also make subprime loans. These do not show up in subprime databases based on HUD information.

4. This comes from historical data by Freddie Mac for conventional, conforming thirty-year fixed rate mortgages. These data also incorporate the effects of points, which varied by about 1.0 points during this period.

5. Grover, Smith, and Todd (2008) find that a variable measuring change in minority home ownership is very significant in their study of the Twin Cities in Minnesota. This is particularly true when accounting for the credit risk of each neighborhood.

6. In regard to data, we chose not to use HMDA data from the Federal Reserve. This was available for the time period measured and would have provided information on the percentage of loans that are declined, the percentage of loans that are FHA loans, and a few other items. There were two reasons we did not use this database. First, HMDA does not cover every loan, but only those originating from lenders of a certain size—it still omits 20 percent of all loans (Avery, Brevoort, and Canner 2006). Second, HMDA data are only available at the census tract level, rather than at the block group level at which we acquired our other variables. In the future, HMDA data could prove quite useful, especially because information on high-cost mortgages has been available since

Grover, Smith, and Todd (2008) find credit scores to be the most significant variable in determining the neighborhood distribution of foreclosures, but credit scores are not generally available in the public domain and are often acquired from PCI Corporation at considerable cost. It would be helpful to all housing researchers to have greater access to this crucial piece of information. Interestingly, our model, without credit score information, explained a lot more of the variance in foreclosure rates ($R^2 = 0.546$) than did their model, which was able to use credit score information ($R^2 = 0.373$).

Source: Geografiska Annaler Series B Human Geography

REDLINING AND MORTGAGE LENDING IN SACRAMENTO*

Source: Annals of the Association of American Geographers

Not in that neighborhood: The effects of population and housing on the distribution of mortgage finance within the Chicago SMSA

Source: Social Science Research

Do state predatory lending laws work? A panel analysis of market reforms

Source: Housing Policy Debate

A "Flip" Look at Predatory Lending: Will the Fed's Revised Regulation Z End Abusive Refinancing Practices?

Source: The Yale Law Journal

Do mortgage rates vary by neighborhood? Implications for loan pricing and redlining

Source: Journal of Housing Economics

The Value Impact of New Residential Construction and Neighborhood Disinvestment on Residential Sales Price

Source: Journal of Real Estate Research

New Information Reported Under HMDA and Its Application in Fair Lending Enforcement

Source: Federal Reserve Bulletin

The impact of predatory loan terms on subprime foreclosures: The special case of prepayment penalties and balloon payments

Source: Housing Policy Debate

The Neighborhood Distribution of Subprime Mortgage Lending

Source: The Journal of Real Estate Finance and Economics

Targeting foreclosure interventions: An analysis of neighborhood characteristics associated with high foreclosure rates in two Minnesota counties

Source: Journal of Economics and Business

Higher-Priced Home Lending and the 2005 HMDA Data

Source: Federal Reserve Bulletin

Mortgage Default in Local Markets

Source: Real Estate Economics

Income, Location and Default: Some Implications for Community Lending

Source: Real Estate Economics

Source: Housing Policy Debate

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