



WORKING PAPER

Local Conditions and Debt in Collections

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June 2016

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Acknowledgments

Support for research on consumer indebtedness was provided by the CCRI (Encore Capital Group). The views expressed are those of the authors and should not be attributed to the Urban Institute, its trustees, or its funders. Funders do not determine research findings or the insights and recommendations of Urban experts. Further information on the Urban Institute's funding principles is available at www.urban.org/support.

We are grateful to participants at the Association for Public Policy Analysis and Management Fall 2014 Research Conference, the Society of Government Economists seminar, National Collections and Credit Risk 2015 Conference, and Urban Institute seminar participants for helpful comments. We thank Peifang Guo, lead statistical analyst at Encore, for initial data preparation and evaluation of the paper's technical components. We thank Urban Institute's Bing Bai, Bowen Garrett, and Kyle Caswell for helpful suggestions, and Emma Kalish for excellent research assistance.

Local Conditions and Debt in Collections

Delinquent debt in the United States is an important concern for both researchers and policymakers,¹ yet little is known about which localities in the country are most affected by, and which local characteristics are most associated with, financial distress. This paper begins to bridge this gap by using unique credit bureau data to examine the geographic distribution of debt in collections in the United States and, merged with local-level data, identify the characteristics of neighborhoods (census tracts) with high debt in collections. In doing so, we answer the following research questions:

1. How is debt in collections geographically distributed across the United States, and which areas have the highest concentration of debt in collections?
2. Which neighborhood characteristics are associated with debt in collections? How do local-area health insurance coverage, housing market conditions, labor market conditions, and socioeconomic characteristics relate to individuals' financial distress, as measured by debt in collections?

These questions are important because debt in collections can decrease an individual's financial opportunities, and recovering debt is important for the maintenance of broader financial systems. Credit report information, including debt in collections, can be used to determine an individual's eligibility for jobs, access to rental housing and mortgages, and insurance premiums (FTC 2013; Traub 2013). Debt in collections can lower credit scores, thereby affecting future access to credit and the price of credit and reducing debt in collections and its associated financial stress can improve consumer health and well-being (see, for example, APA 2015; Arber, Fenn, and Meadows 2014; Berger, Collins, and Cuesta 2015). Further, research has underscored the importance of debt recovery to expanding access to credit (Bae and Goyal 2009; Berkowitz and White 2004; Fedasyeu 2013; Jappeli, Pagano, and Bianco 2005) and reducing the price of credit (Bae and Goyal 2009; Berkowitz and White 2004).

Our findings highlight how pervasive debt in collections is: roughly one-third of Americans with a credit file have debt in collections reported on their credit file. This debt is geographically concentrated; specifically, individuals in southern and western states are more likely to have debt in collections. And the average amount of debt in collections is high in states that were most affected by the foreclosure crisis (i.e., Nevada, Arizona and Florida).

We find that people who live in neighborhoods with lower health insurance coverage, lower housing values and homeownership rates, more delinquent and underwater mortgages, higher unemployment rates, and lower household incomes are more likely to have debt in collections. Debt in collections is also more prevalent in areas with lower educational attainment and more African Americans and Latinos. Further, these relationships hold for the amount of debt in collections.

These relationships could be driven by two different channels (or both). One channel is an individual-level effect. For example, people who are unemployed might be more likely to have debt in collections. An alternative possibility is a local-level effect. For example, areas with a high share of unemployed people might make *all* people in the area more likely to have debt in collections, regardless of whether the individual is unemployed. In this case, just being surrounded by unemployed people affects whether a person has debt in collections—possibly through the networks available. Although our results are unable to fully distinguish between the two, our work contributes to the literature by describing the relationship between neighborhood characteristics and debt in collections.

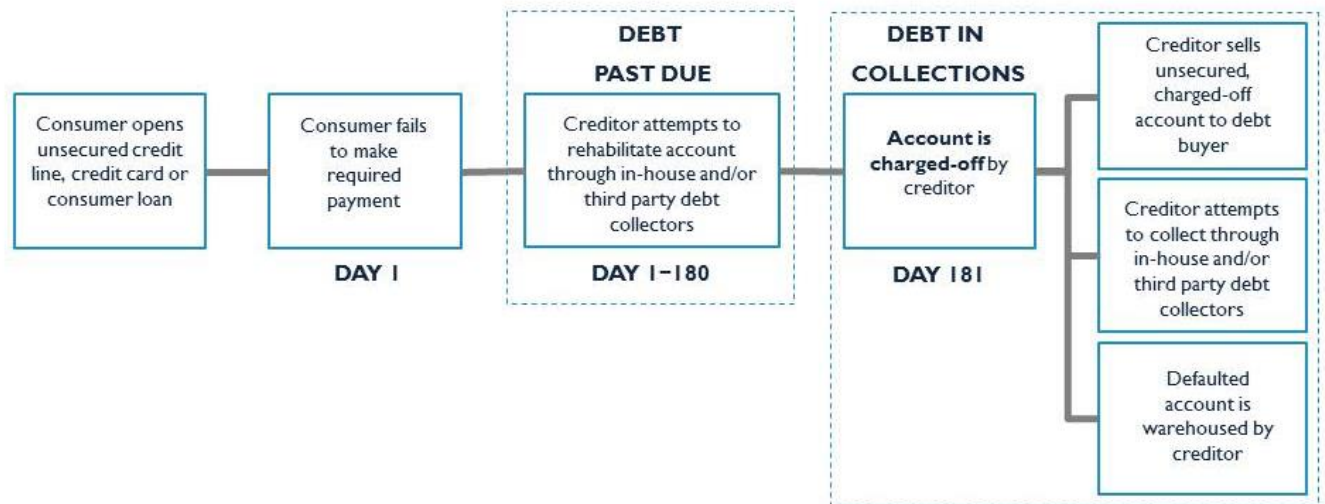
The remainder of the paper is organized as follows. First we define debt in collections, place the paper in the context of the literature, and describe the paper's contribution. Next, our conceptual framework provides hypotheses for how local health care, housing, economic, education, and demographic characteristics relate to an individual's ability to repay a debt. Then we describe the data, variable definitions, and empirical strategy for measuring the relationship between local characteristics and debt in collections. After that, we present the results and draw our conclusions.

Background, Related Literature, and Contribution

Debt in collections includes various forms of nonmortgage debt. Here we define debt in collections to include debt accounts (e.g., credit cards) that were previously more than 180 days past due and have been closed and charged off.² Unpaid student and car loans can also end up in collections. Debt in collections can also originate from unpaid bills (e.g., medical bills, utility bills, parking tickets, child support payments, membership fees) that are reported to a credit bureau. While mortgage debt could result in collections activity, it is very rare. Figure 1 shows the archetypal path of unsecured credit, such as credit card debt, from open and current to past due to charged off and in collections. Notice that debt in collections can be held by a third party (i.e., a debt buyer) or by the original creditor.

FIGURE 1

Timeline from Onset of Account Delinquency



Why focus on debt in collections? Though debt past due might be associated with an individual's short-term inability or unwillingness to pay bills, debt in collections is more likely to be associated with a repeated or chronic inability or unwillingness to fulfill financial obligations. And, as mentioned, debt reported in collections can have a long-term impact on an individual's financial opportunities and well-being.

This paper builds on a literature that examines factors associated with delinquent nonmortgage debt. Few studies examine debt in collections, while a somewhat larger number of studies examine debt past due (e.g., 30, 60, or 90 days past due). We examine a broad set of local-area health care, housing, and economic factors associated with debt in collections and present the geographic distribution of debt in collections across the United States.

Two relatively recent studies examine debt in collections (as well as other measures of delinquent debt) in the context of health insurance expansions. These studies examine third-party debt in collections, so they miss debt in collections that is not transferred to a third party (e.g., where a credit card company or hospital works to collect the debt in house). An analysis of Massachusetts's health reform found that health insurance expansions led to a decline in the amount of third-party debt in collections and the amount of debt 30 or more days past due, with the effect on collections debt small relative to past-due debt (Mazumder and Miller 2014). An Oregon experiment that expanded access to health insurance (Medicaid) via a lottery found that people offered health insurance were significantly less likely to have third-party debt in collections but were no less (or more) likely to have debt 30 or

more days past due (Finkelstein et al. 2011). While there are some differences in the specific findings across the two studies, both suggest that health insurance improves people's financial circumstances.

Using data gathered before the Great Recession, several other studies examine factors associated with delinquent debt but not debt in collections. Some studies focus directly on credit card delinquencies (e.g., Agarwal and Liu 2003; Gross and Souleles 2002; Stavins 2000), but broader credit delinquency indicators have also been examined. For example, Avery, Calem, and Canner (2004) look at whether any credit account is past due (60 or more days). While informative, analyses that use only credit card data miss other types of delinquent accounts (e.g., installment loans, student loans) and exclude people who do not use, or have access to, credit cards.

Consistent with Mazumder and Miller (2014), Gross and Souleles (2002) and Stavins (2000) find that health insurance is associated with lower credit card delinquency. Unpaid medical bills generally bypass “past due” status and go right into collections, so this finding suggests that either health insurance helps people better manage their nonmedical bills and expenses³ or that some people pay medical bills with credit cards and then have trouble repaying those cards. The literature also reveals that employment conditions matter for debt delinquency and default (Agarwal and Liu 2003; Avery, Calem, and Canner 2004; Stavins 2000). Gross and Souleles (2002) find that census region home prices are related to bankruptcies. Individual characteristics, such as age, income, education, and marital status are also related to past-due credit card debt (Avery, Calem, and Canner 2004).

In addition, our paper relates to a growing literature on the geographic distribution of economic factors. For example, Chetty and colleagues (2014) show that intergenerational mobility varies substantially across the country, while Skinner (2012) demonstrates that health care utilization and costs are significantly different across regions in the United States.

To our knowledge, this is the first paper to examine the geographic distribution of debt in collections across the United States. In addition, and in contrast to past work, we examine extensive local-level characteristics that are hypothesized to affect debt in collections. Specifically, we examine household income, health insurance coverage, health care costs, housing market characteristics (including the rental market), labor market, and local socioeconomic characteristics, such as educational attainment. Using data from 2013 allows us to examine these relationships in the aftermath of the Great Recession. Also, unlike earlier studies that focus on third-party debt in collections, our analyses consider all debts in collections—whether held by the original creditor or transferred to a third-party collections agency. Thus, our analysis provides a more accurate picture of people's severe financial delinquencies as recorded in their credit files. Overall, this paper provides a current picture of how

local-level characteristics affect debt in collections. These results can be used to guide place-based efforts and help identify target populations at higher risk of financial distress.

Conceptual Framework

Understanding consumer debt presents challenges not just for consumers and policymakers, but for researchers. On the one hand, credit (which produces debt) can be used to meet immediate needs, smooth consumption, and generate increased returns through financial leverage. On the other hand, consumers may not use credit optimally and can struggle to manage their household debt levels despite the recent financial recovery. While researchers have long examined economic factors related to household solvency, including income, house prices, and cost of living, household debt accumulation has received far less attention.

Traditional economic theory suggests that individuals make their spending, savings, and credit decisions based on their expected permanent income (Friedman 1957). Accordingly, debt is created so individuals can smooth consumption and personal investments over time, for example through investments in human capital (e.g., education or training to upgrade job skills or marketability) or physical capital (e.g., to start or expand a small business). Traditional theory holds that individuals will make utility-maximizing decisions regarding how much debt to take on, when, and for what purpose.

More recently, a wide array of findings from psychology, behavioral economics, and related experimental fields has emerged that attempts to describe the behavioral factors underpinning consumer financial decision making generally and negative financial outcomes in particular. Of note, it has been demonstrated that impatience (i.e., present-biased preferences) (Meier and Sprenger 2010, 2012), mathematical ability (Agarwal and Mazumder 2013; Gerardi, Goette, and Meier 2013), risk aversion (Brown, Garino, and Taylor 2013; Daly, Delaney, and McManus 2010),⁴ debt literacy (Lusardi and Tufano 2009), and the “pain of paying” (Rick, Cryder, and Loewenstein 2008) may all play roles in explaining debt accumulation and the presence of delinquent debt. Moreover, several personality traits have been demonstrated to relate to financial outcomes, including conscientiousness (Daly, Delaney, and McManus 2010) and risk taking/sensation seeking (Tokunaga 1993). Finally, researchers have postulated that the attentional burden associated with scarcity may itself be a significant factor in perpetuating financial distress (Shah, Mullainathan, and Shafir 2012). Although this work describes many of the individual behavioral factors that influence household financial trajectory, while generally

controlling for external factors such as demographics, it has largely ignored the effects of macroeconomic variables.

Debt can play both positive and negative roles in consumers' lives, but the impact of debt in collections is almost uniformly negative. Practically, debt in collections generally derives from one of three deficits possessed by indebted consumers: ability to pay, willingness to pay, or awareness of the debt. Although these deficits are not mutually exclusive, and often coincide with each other, we focus here on factors largely related to ability to pay. Ability-to-pay deficits often reflect one of two scenarios in which expenses exceed income:

1. The individual had the ability to repay the loan but, as a result of deteriorating personal or market conditions, is now unable to make repayments. For example, following a financial shock, low- and moderate-income consumers often struggle to meet basic needs, much less stay current on borrowing (Dynan, Elmendorf, and Sichel 2012; Lusardi 2011, 2013; Lusardi, Schneider, and Tufano 2011).
2. The individual was never able to repay the loan, which may occur if a credit issuer purposefully (e.g., predatory lending) or accidentally (e.g., poor underwriting) sells a credit product badly matched to a consumer's financial circumstances, or if a consumer enters into a credit negotiation without understanding his or her credit, wealth, or income profile and thereby takes on more debt than he or she is able to pay.

Debt and the Role of Place

While no one would dismiss the importance of individual-level factors when explaining the over-accumulation of debt, and of debt that enters into collections, a robust and growing literature finds that individuals' financial outcomes are influenced not just by their personal and family dynamics but by the communities in which they live (Chetty, Hendren, and Katz 2016; Clampet-Lundquist et al. 2006; Currie and Moretti 2007; Ellen and Turner 1997; Kling, Liebman, and Katz 2007; Leventhal and Brooks-Gunn 2000; Ludwig 2012; Orr et al. 2003; Sharkey 2013).

Our approach combines quantitative geographic analysis and several broad and deep datasets (including a new, nationally representative dataset from TransUnion) to identify the factors (active at the individual/family level, surrounding community level, or both) that bear on the presence and magnitude of household debt. The following section details the specific indicators we use, their sources, and how we construct them. But before turning to that, it is important to outline our framework for

local conditions that either directly have a strong likelihood of influencing individual debt in collections or proxy for individual characteristics.⁵

Beginning with health care, it is clear that insurance is a protective factor that provides a hedge against catastrophic health claims that could rapidly deplete savings (even to the point of bankruptcy). In this way, the extent of health insurance coverage locally can signal fiscal vulnerability or security, and be associated with higher or lower levels of debt in collections. Relatedly, we hypothesize that regions with higher health care costs will experience higher debt in collections, given the increased demand on households' finances.

A second area of life we expect to be linked with debt in collections is housing. Owning a home, as an asset, can be a protective factor, and in this way we expect higher homeownership rates to be associated with lower rates of debt in collections. But, as we learned through the Great Recession, homes cannot be subdivided and can be difficult to liquidate, especially during economic downturns. Looking at the value of owner-occupied homes is interesting, because here the theory is more muddled. Higher values may mean there will likely be higher asset building over time as the mortgage principal is paid down, and therefore a larger cushion is created for homeowners. But higher values also mean higher costs for new homeowners—leaving them with fewer financial options should an adverse event occur.

Unlike with owner-occupied housing, we do not anticipate positive benefits to high prices for rental housing. With the latter, there is no asset building through the collection of rents from non-owners, and higher costs can mean that people have little slack if they run into trouble. Therefore, we expect higher rents will be associated with higher debt in collections.

Local rates of negative home equity (being underwater) are hypothesized to be positively associated with higher debt in collections. This may be the case not just through direct effects, but also through indirect effects. For example, if most of your neighbors are underwater on their mortgages, you will likely face fewer housing resale opportunities. With similar logic to negative home equity, we expect that delinquent mortgages are negatively associated with debt in collections.

Turning to economic measures, we anticipate that unemployment is linked with debt in collections at the neighborhood level. This is likely the case both because of a direct effect—less income means fewer buffers against financial shocks—but also because of broader neighborhood factors. For example, high unemployment and low earnings may reflect limited access to economic opportunities. These factors may also be indicative of neighborhood-level social networks or norms that do not readily facilitate or encourage high-wage employment. Unemployed people can often find a job more quickly in more prosperous places. Similarly, we expect that increasing levels of formal education will be

associated with less debt in collections, because of direct as well as “neighborhood” effects. (See Galster 2012 for a theoretical review of how neighborhood education, peer supports, knowledge sharing, social networks, and the like can affect individual-level outcomes.)

Finally, we expect a series of local demographic factors to be related to debt in collections. Race/ethnicity can matter, as the United States has a long history of racial exclusion and discriminatory lending, including different prevalence of loans and different loan products for people and communities of color (Immergluck 2004; Ross and Tootell 2004; Squires 1997). Thus, we hypothesize that people who live in neighborhoods with a higher share of nonwhite residents will have higher debt in collections. Similarly, greater shares of foreign-born residents are expected to be associated with higher debt in collections. We also expect areas with higher rates of single mothers to experience higher debt in collections as these communities experience greater financial vulnerability (Meyer and Sullivan 2008; Wilson 1996).

Age often relates to life cycle and, therefore, to debt (Carasso and McKernan 2008). For example, there is relatively less opportunity to take on debt in very early adulthood as lenders are more reluctant to extend credit to those with short credit histories (note that while a consumer’s age is typically not a factor in credit scoring models, the average age of their credit accounts is usually included). It is our expectation that because the ability to accrue debt can grow over one’s working life that debt in collections will grow as well. However, this trend may reverse at some juncture: older individuals may have accumulated sufficient assets to mitigate financial distress and be better able to prevent debt from entering collections.

In sum, many factors related to financial shock and stress on the one hand, and financial security and protection on the other, are expected to relate to debt in collections. At the local level, observed conditional correlations could be driven by individual effects or place-based effects, with local characteristics serving as proxies for individual characteristics. For example, having low educational attainment might be directly correlated with debt in collections. And, local characteristics can pick up place-level effects. For example, neighborhoods with low rates of educational attainment might have higher rates of debt in collections, even among residents who do not have low rates of educational attainment, because of neighborhood or peer effects. While we are not able to disentangle these two sets of effects because of the structure of our data, it is important to note that the intersection of individual and place is very difficult to distinguish and define empirically even with individual-level and place-level data, given the entwined nature of both individual-level and neighborhood-level conditions and characteristics (Galster 2012).

Data and Variable Definitions

We use individual-level TransUnion credit bureau data from September 2013. The data were randomly sampled from TransUnion’s national database and include a sample of approximately seven million US consumers. The TransUnion data only include individuals with a credit file (thick or thin), so our sample does not represent the roughly 26 million US consumers with no credit file (Brevoort, Grimm, and Kambara 2015). Adults without a credit file are more likely to be black, Hispanic, and low-income (Brevoort, Grimm, and Kambara 2015), so our sample likely underrepresents these groups.

Nonetheless, the credit bureau data provide rich credit histories and include debts that are current, past due, and in collections. The data also present information on age and geographic location (latitude and longitude, zip code, and county).⁶ Using the latitude and longitude information, we identify the census tract of each consumer. Transunion did not provide personally identifiable information (PII) for any consumer.

We supplement our data with local-level characteristic measures from different sources. We obtain demographic, economic, housing, and health insurance coverage data at the census tract level from the American Community Survey (ACS). This information is only available as an average over five years; we use years 2008 through 2012. Housing market data come from CoreLogic, with zip code-level data for the most populated areas and county-level data for less populated areas.⁷ All the housing market variables are averaged over 2009–12.⁸ Finally, we obtain measures of health care costs from the Dartmouth Atlas of Health Care, which provides unique geographic data on health care spending (Skinner 2012). These data are available at the county level for 2010.⁹

Our analysis is restricted to individuals with an available geocoded identifier. Also, we trim the sample at the top 0.25 percent of the amount of debt in collections—our key dependent variable—to reduce measurement error. The final sample includes 6,499,499 US consumers.

Variable Definitions

This paper focuses on two credit-related outcomes (table 1). The first is an indicator of whether the individual has debt in collections. We identify a person as having debt in collections if he or she has a collections amount greater than \$100. This lower bound of \$100 is to avoid generally inconsequential and easily forgotten small bills. In fact, the new FICO score model excludes collection accounts that originate with balances of less than \$100, calling them “nuisance” collections.¹⁰ As a robustness check, we also estimate models using an indicator of whether the individual has debt in collections of any amount.

TABLE 1

Variable List

Source	Level of identification	Period covered	Variables	Definition
TransUnion	Individual	Sept. 2013	Has debt in collections	Has more than \$100 in collections
			Amount of debt in collections	Amount of debt in collections ^a
			Has debt in collections and recent activity	Has debt in collections greater than \$100 and increase greater than \$25 in past two years
			Amount of recent debt in collections	Amount of debt in collections if increase greater than \$25 in past two years ^b
			Age	Age reported in credit file
American Community Survey	Census tract	2008–12 average	% uninsured population	Share of civilian noninstitutionalized population without health insurance
			% homeownership	Share of occupied housing units that are owner occupied
			Median housing value	Median value of owner-occupied housing units
			Median rent	Median monthly rent for renter-occupied housing units paying cash rent
			<i>Race and ethnicity</i>	<i>Share of the population in each category</i>
			% non-Hispanic white	
			% non-Hispanic black	
			% Hispanic	
			% non-Hispanic Asian	
			% non-Hispanic other	
			% foreign-born	Share of population born abroad
			<i>Education</i>	<i>Share of the population ages 25 and older in each educational level</i>
			% no high school	
			% high school or GED	
			% some college	
			% bachelor's	
			% more than bachelor's	
			% single-mother families	Share of families with female head of household, no husband present, and own children under 18 years
			Unemployment rate	Share of the labor force that is unemployed
			Median household income	Median household income in the past 12 months (in 2012 inflation-adjusted dollars)
Dartmouth Atlas	County	2010	Health cost	Price-adjusted yearly Medicare reimbursements per enrollee
CoreLogic	Zip code / county ^c	2009–12 average	Share of delinquent mortgages	Mortgages delinquent 90 days or more, including loans that are in REO or foreclosure, as share of total mortgages
			Share of properties with negative equity	Share of properties with values less than the outstanding balance on the mortgage

^a Variable set to zero if debt in collections lower than \$100.

^b Variable set to zero for people without debt in collections greater than \$100.

^c Zip codes are used for the more populated areas, counties for the less populated areas.

The indicator of whether an individual has debt in collections could represent a bill that was unpaid up to seven years before September 2013 (when the data extract was created). We present robustness checks using debt in collections with recent activity. Specifically, we create an indicator of whether the individual had debt in collections greater than \$100 in September 2013 *and* whether the amount of debt in collections increased more than \$25 in any month over the prior two years.

The second outcome of interest is the dollar amount of debt in collections. We again treat collection amounts below \$100 as zeros to avoid considering small bills about which individuals may be unaware. We also present the same two robustness checks as above—using actual dollar amount of debt in collections (i.e., actual amount for values less than \$100) and the dollar amount (greater than \$100) if debt in collections increased by more than \$25 over the past two years.

Our explanatory variables fall out of the conceptual framework. From the ACS, we obtain information at the census tract level on median household income, health insurance coverage, unemployment rate, share of the population in each race/ethnicity category (non-Hispanic white, non-Hispanic black, non-Hispanic Asian, Hispanic, non-Hispanic other), share of the population at each educational level (less than high school, high school/GED, some college, bachelor's degree, more than bachelor's degree), and share of single-mother families, share owning homes, median value for owner-occupied housing units, and median rent.

Health care costs come from Dartmouth Atlas and measure Medicare reimbursements per enrollee by county. This measure was created to analyze health care spending and health care cost variation across the country. Medicare is chosen because it is a health insurance with near-universal coverage and publicly available data. Variation in Medicare reimbursements per enrollee across the country can be explained by many factors. On the one hand, places with higher Medicare expenses might have more expensive doctors with different practices (e.g., more or less emphasis on preventive medicine, higher hospitalization costs). On the other hand, places with higher Medicare expenses might have sicker patients that demand more services and reflect higher costs rather than higher demand for services. To control for the demand component, we use Medicare reimbursements measures that adjust for differences in demographics characteristics (age, sex, and race) across counties.

Our analysis also incorporates two measures of housing market tightness from CoreLogic: (1) the share of mortgages delinquent by 90 days or more, including foreclosures and loans that are real estate owned (REO), over total mortgages; and (2) the share of properties with negative equity, which is defined as share of properties where the value is less than the outstanding mortgage balance.

Empirical Strategy

To analyze how debt in collections is geographically distributed across the United States, we use descriptive maps created in ArcMap 10 with rounded Jenks natural breaks based on census tract-level means.

Our analysis of how local characteristics relate to debt in collection is based on probit and Tobit model estimates with local explanatory variables drawn from our conceptual framework. White/Huber standard errors are clustered at the census tract level.

The probit model accounts for our binary dependent variable that indicates whether an individual has debt in collections. The probability of reported debt in collections is defined as

$$Pr(D_{ils} = 1 | Local_{ils}, Age_{ils}, d_s) = \Phi(\beta_1 Local_{ils} + \beta_2 Age_{ils} + d_s)$$

where D_{ils} indicates if person i in location l in state s has reported debt in collections and $\Phi(\cdot)$ is a standard normal cumulative distribution function. $Local_{ils}$ are local characteristics—measured at the census tract, zip code, or county level—and include health, housing, economic, education, and demographic measures.¹¹ Age_{ils} is individual i 's age, and d_s are state dummy control variables.

The Tobit model accounts for the large proportion of individuals (67 percent) who do not have debt reported in collections. For the dependent variable Y_{ils} , we add 1 to the amount of debt in collections and take the natural log.¹²

$$E(Y_{ils} | Local_{ils}, Age_{ils}, d_s) = \Phi(\alpha) (\beta_1 Local_{ils} + \beta_2 Age_{ils} + d_s + \frac{\phi(\alpha)}{\Phi(\alpha)})$$

where $\alpha = \beta_1 Local_{ils} + \beta_2 Age_{ils} + d_s$, $\Phi(\cdot)$ is a standard normal cumulative distribution function, and $\phi(\cdot)$ is a standard normal probability density function. Other variables are defined as in the model above. Results are presented as average marginal effects.

Results

A Descriptive Look at Debt in Collections and Neighborhood Context

Nationally, we find that nearly one-third of Americans have a debt in collections recorded in their credit report (table 2).¹³ While the high prevalence of debt in collections may be surprising, this finding is corroborated by other analyses (Avery, Calem, and Canner 2004; Brevoort, Grimm, and Kambara

2015). Among those with debt in collections, the average amount owed is over \$5,000. The median is quite a bit lower, however, at \$1,589.

Roughly a quarter of individuals nationally have debt in collections with recent activity, with an average amount of roughly \$2,800 owed. This shows that much of the debt in collections represents recent activity on the account.

There are systematic differences between the individual and geographic attributes of people with and without debt in collections (table 2). Starting with age, an individual-level factor, the average age for individuals without debt in collections is 52.4, while it is just 43.5 for those with debt in collections.

Turning to neighborhood-level factors, several differences are apparent. The average neighborhood uninsured rate for individuals without debt in collections is 13.6 percent, while it is 17.7 percent for those with debt in collections. Health costs, measured at the county level, show modest differences: on average, they are \$231 higher for individuals with versus without debt in collections.

Homeownership rates are lower for individuals with debts in collections (62.2 versus 68.3 percent, respectively), and both median home values and median rents are lower in communities where those with debt in collections live. Moreover, those with debt in collections live in neighborhoods that have higher rates of delinquent mortgages or properties with negative equity, compared with individuals who do not have debt in collections.

The racial/ethnic composition of neighborhoods also varies for those with and without debt in collections: people with debt live in neighborhoods with a lower share of non-Hispanic whites and a higher share of non-Hispanic blacks and Hispanics. Education also differs across the two groups; people with debt in collections live in neighborhoods that have higher shares of residents without high school degrees and lower shares of residents with college degrees than the neighborhoods where those without debt in collections live.

TABLE 2

Descriptive Statistics

Geographic level	Type	Statistic	Has Debt in Collections		Total	Std. deviation
			No	Yes		
			Mean	Mean	Mean	
Individual		% of individuals with debt in collections	-	-	32.4%	46.8%
		% of individuals with debt in collections and recent activity	-	-	22.9%	42.0%
		Average amount of debt in collections	\$0	\$5,097	\$1,650	\$5,677
		Average amount of recent debt in collections	\$0	\$2,797	\$905	\$4,422
		Average age	52.4	43.5	49.5	18.9
Census tract	Health	% uninsured population	13.6%	17.7%	14.9%	9.4%
	Housing	% homeownership	68.3%	62.2%	66.3%	21.4%
		Median housing value	\$259,853	\$196,988	\$239,503	\$177,973
		Median rent	\$1,041	\$939	\$1,008	\$380
Zip code/ county		Share of delinquent mortgages	7.1%	9.0%	7.7%	5.4%
		Share of properties with negative equity	21.3%	25.7%	22.7%	17.7%
	Race and ethnicity	% non-Hispanic white	66.8%	54.8%	62.9%	29.9%
		% non-Hispanic black	10.0%	17.9%	12.5%	20.7%
		% non-Hispanic Asian	5.4%	4.0%	5.0%	9.1%
		% non-Hispanic other	2.8%	3.0%	2.9%	4.3%
		% Hispanic	15.0%	20.3%	16.7%	21.8%
		% foreign-born	13.2%	14.0%	13.5%	14.0%
	Education	% no high school	13.0%	18.0%	14.6%	11.6%
		% high school or GED	26.9%	29.9%	27.9%	10.6%
		% some college	28.8%	29.1%	28.9%	7.8%
		% bachelor's	19.4%	14.9%	17.9%	10.2%
		% more than bachelor's	11.9%	8.1%	10.7%	9.4%
	Income/ employment/ family	Median household income	\$63,938	\$51,438	\$59,892	\$28,182
		% unemployment	8.9%	11.0%	9.6%	5.4%
		% single-mother families	10.2%	14.0%	11.4%	8.8%
	County	Health costs	\$9,585	\$9,816	\$9,660	\$1,410
		# Individuals	4,395,528	2,103,971	6,499,499	

Source: Authors' calculations based on September 2013 TransUnion data, 2008–12 American Community Survey, Dartmouth Atlas 2010, and CoreLogic 2009–12.

Note: We trim the sample at the top 0.25 percent of the amount of debt in collections.

Geographic Distribution of Debt in Collections

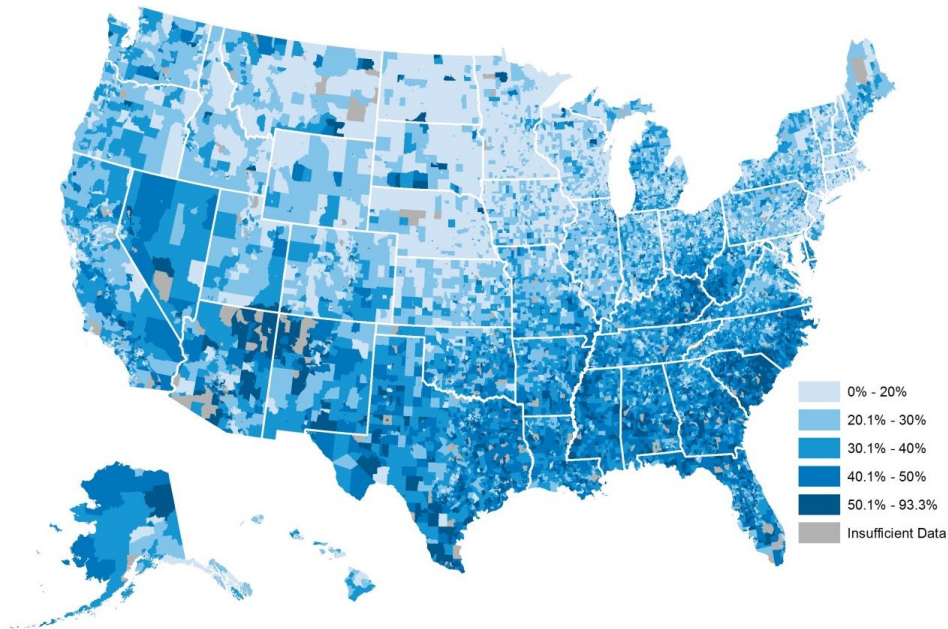
How is debt in collections geographically distributed across the United States, and which areas have the highest concentration of debt in collections? Figure 2 shows the share of US consumers (with a credit file) with debt in collections by census tract. The sheer amount of variation is striking. The darker areas are troubled neighborhoods, where roughly 50 percent or more consumers have a report of debt in collections. In the lighter areas, less than 20 percent of residents have debt in collections.

Neighborhoods with significant debt in collections are not evenly distributed across the United States and are especially prevalent in the South and West. Nevada, which was hard hit by the foreclosure crisis, tops the list of states: 43 percent of people with a credit file have reported debt in collections (appendix table A.1). But Nevada is closely followed by South Carolina and Mississippi—two states not strongly associated with the foreclosure crisis. Indeed, using the Census Bureau’s region definitions, the top 16 states for debt in collections are all in the South or West. Conversely, debt in collections is appreciably lower for states in the Great Plains and Northeast.

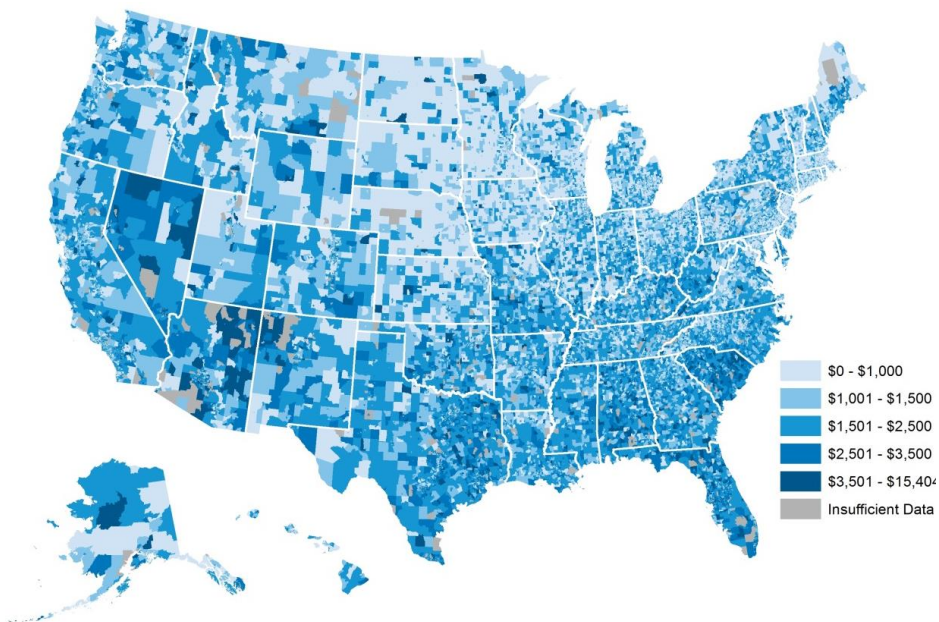
It is not just the prevalence of debt in collections that varies across the United States; the average amount of debt in collections does too. The South and West also have higher average amounts of debt in collections, with Nevada again taking the lead at \$2,968 (appendix table A.1). It is worth noting, however, that the amount of debt in collections is somewhat less geographically determined than is the occurrence of debt in collections.

FIGURE 2

Share of Adults with Debt in Collections



Average Amount of Debt in Collections



Source: Authors' calculations from September 2013 Transunion data.

Note: Rounded Jenks natural breaks.

How Does Debt in Collections Relate to Local Conditions?

To take a closer look at local patterns, we focus on a state with a relatively high frequency of debt in collections: Texas. Texas is not uniform; it has areas with high and low shares of people with debt in collections and people with and without health insurance. Maps of Texas (figure 3) show that many of the neighborhoods with a high share of people with debt in collections are the same neighborhoods in which a large share of people lacks health insurance (darker color).

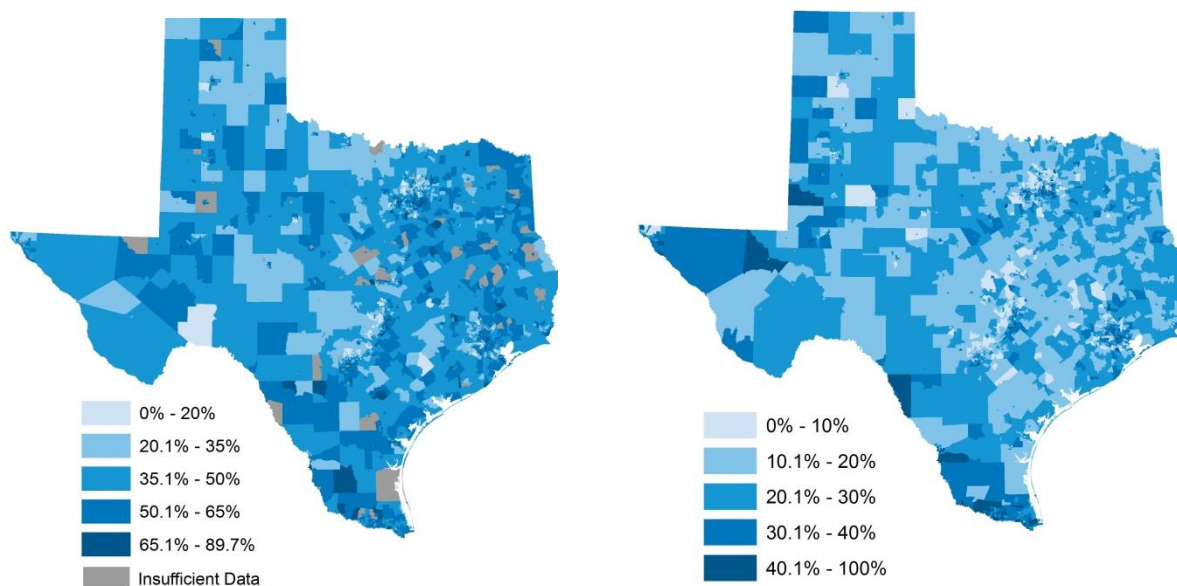
Minnesota—a state with a low rate of debt in collections—shows a similar alignment (figure 4). The state looks fairly light in terms of debt in collections and uninsured rates. Zooming in on specific areas of the state shows that some of the darker communities with high debt in collections are also those where a large share of people lack health insurance.

FIGURE 3

Texas Debt in Collections versus Health Insurance Coverage

Debt in collections

Without health insurance



Source: Authors' calculations from September 2013 Transunion data and 2008–12 American Community Survey.

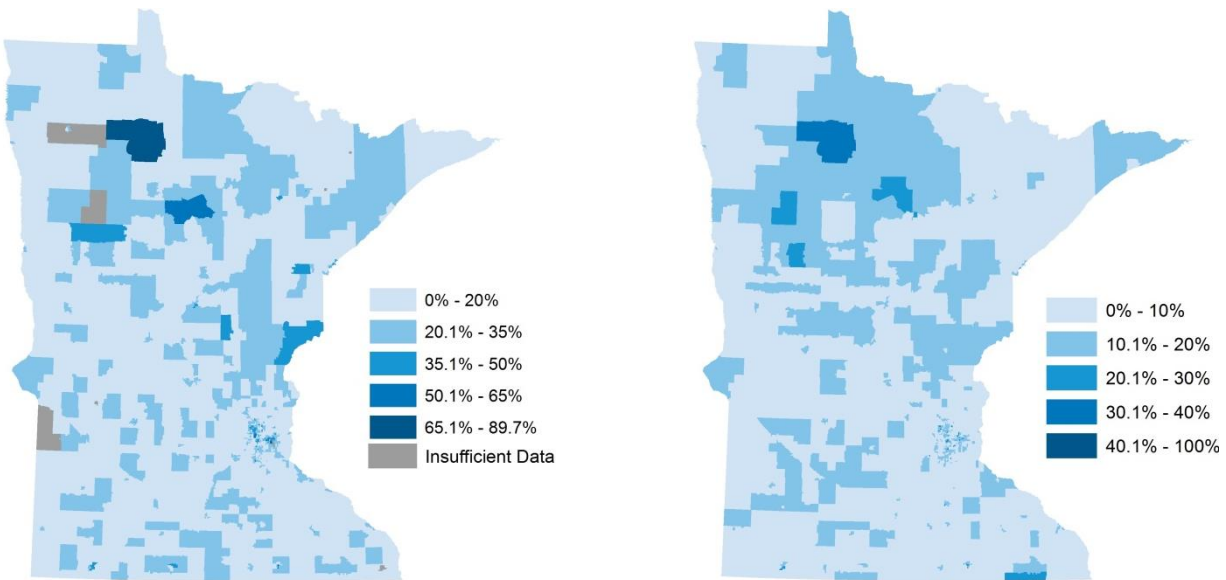
Note: Rounded Jenks natural breaks.

FIGURE 4

Minnesota Debt in Collections versus Health Insurance Coverage

Debt in collections

Without health insurance



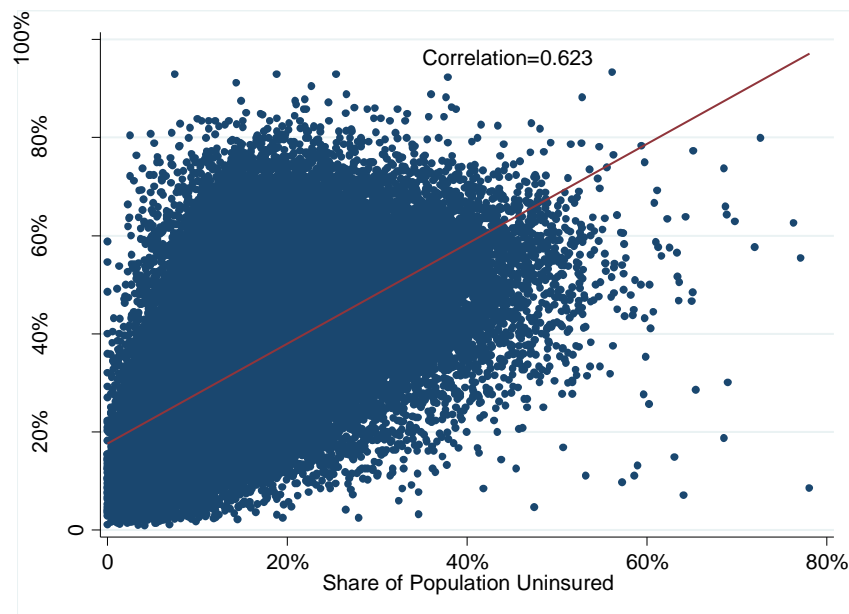
Source: Authors' calculations from September 2013 Transunion data and 2008–12 American Community Survey.

Note: Rounded Jenks natural breaks.

Figures 5, 6, and 7 expand on the maps presented above to more systematically explore the relationship between the percentage of people with debt in collections (y-axes) and other neighborhood factors (x-axes). Each dot represents a census tract, and the red line is a linear fit. We find a strong correlation of 0.62 between the share of individuals with debt in collections and the share of the population that is without health insurance (figure 5). We find a moderate correlation of 0.34 between debt in collections and negative equity at the neighborhood level (figure 6). And, as shown in figure 7, we find a strong correlation between debt in collections and the share of the population that is unemployed (0.56).

FIGURE 5

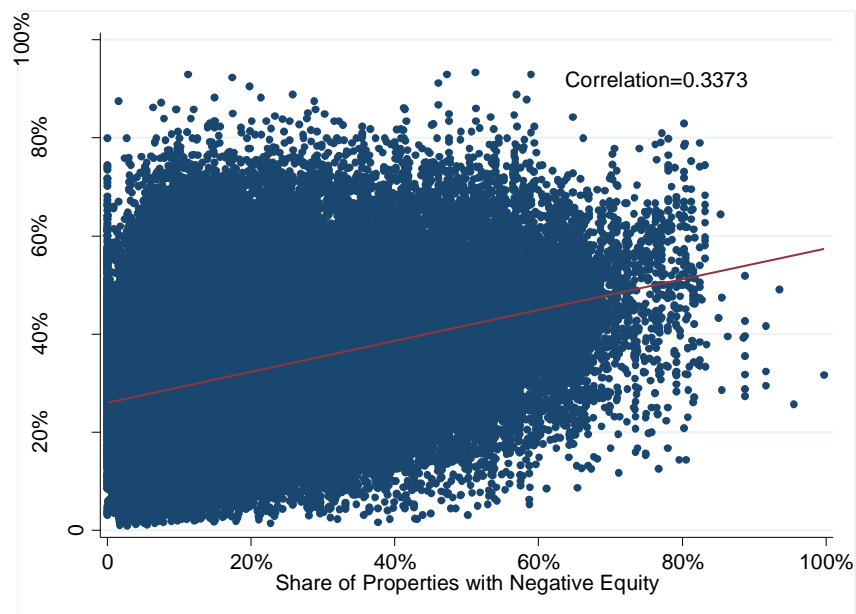
Relationship between Debt in Collections and Health Insurance



Notes: Each dot represents one census tract observation. Red line is a linear fit of the variables at the census tract level. Correlations are also calculated at census tract level.

FIGURE 6

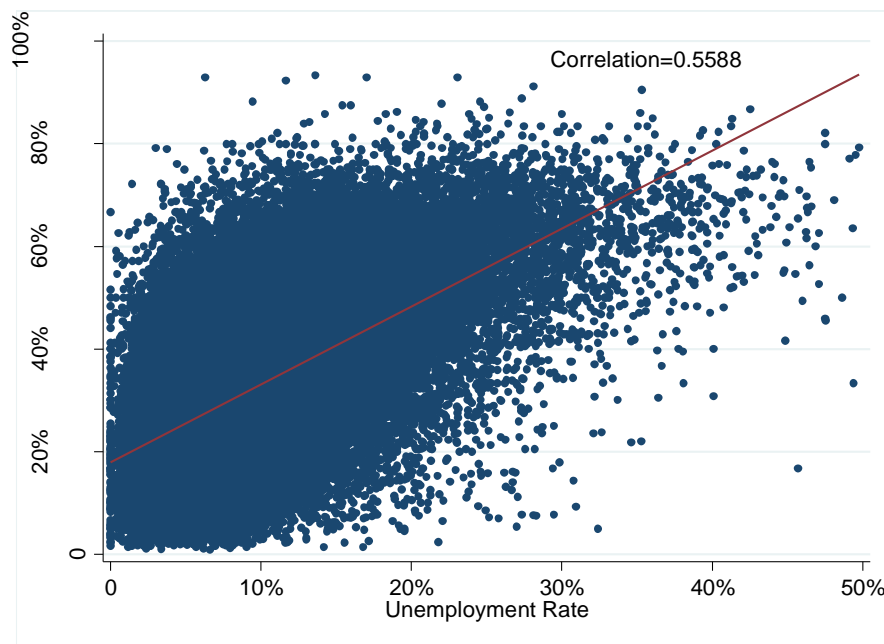
Relationship between Debt in Collections and Negative Home Equity



Notes: Each dot represents one census tract observation. Red line is a linear fit of the variables at the census tract level. Correlations are also calculated at census tract level.

FIGURE 7

Relationship between Debt in Collections and Unemployment Rate



Notes: Each dot represents one census tract observation. Red line is a linear fit of the variables at the census tract level. Correlations are also calculated at census tract level.

Regression Results

Our regression analyses indicate that people living in neighborhoods (census tracts) with a higher share of uninsured individuals are significantly more likely to have debt in collections (table 3, column 1). They also have higher amounts of debt in collections (table 3, column 2). Specifically, we find that a 1 percentage-point increase in the share of population without health insurance is associated with a 0.16 percentage-point increase in the likelihood of having debt in collections and a 1.3 percent increase (equal to \$20) in the average amount of debt in collections (from \$1,650 to \$1,670).

TABLE 3

Relationship between Debt in Collections and Local- and Individual-Level Characteristics, Main Results

Dependent variable: Method: Parameter: average marginal effect Model	Has debt in collections Probit (1)	Ln (amount debt in collections +1) Tobit (2)
Health		
Share of population uninsured	0.164 (12.77)***	1.254 (12.20)***
Log (health cost)	0.008 (0.95)	0.104 (1.43)
Housing		
Log (median housing value)	-0.035 (-13.31)***	-0.284 (-13.12)***
Log (median rent)	0.003 (1.25)	0.011 (0.52)
Share of homeownership	-0.073 (-17.00)***	-0.628 (-17.28)***
Share of delinquent mortgages	0.348 (7.60)***	2.641 (6.97)***
Share of properties with negative equity	0.034 (3.85)***	0.385 (5.29)***
Economic		
Unemployment rate	0.085 (5.15)***	0.455 (3.40)***
Log (median household income)	-0.025 (-7.64)***	-0.222 (-8.42)***
Education (omitted: less than high school)		
Share with high school diploma or GED	-0.030 (-1.30)	0.034 (0.20)
Share with some college	-0.081 (-4.22)***	-0.219 (-1.57)
Share with bachelor's	-0.223 (-9.28)***	-1.663 (-9.07)***
Share with more than a bachelor's	-0.238 (-9.76)***	-2.016 (-10.69)***
Race (omitted: non-Hispanic white)		
Share non-Hispanic black	0.156 (30.99)***	1.161 (27.11)***
Share non-Hispanic Asian	0.032 (2.19)**	0.206 (1.66)*
Share non-Hispanic other	0.203 (13.44)***	1.700 (12.65)***
Share Hispanic	0.058 (8.48)***	0.490 (9.11)***
Share foreign-born	-0.129 (-7.41)***	-0.908 (-6.79)***
Share of single-mother families	0.072 (10.37)***	0.461 (8.45)***

Dependent variable: Method: Parameter: average marginal effect Model	Has debt in collections Probit (1)	Ln (amount debt in collections +1) Tobit (2)
Individual age (omitted: 35–49)		
22 or younger	-0.121 (-46.97)***	-1.112 (-53.67)***
23–34	0.031 (26.26)***	0.219 (23.25)***
50–64	-0.098 (-45.76)***	-0.820 (-43.39)***
65 or older	-0.272 (-68.49)***	-2.390 (-62.92)***
Missing age	-0.156 (-37.24)***	-1.528 (-47.70)***
State dummies	Yes	Yes
Observations	6,499,499	6,499,499

Sources: TransUnion data, 2008–12 American Community Survey, Dartmouth Atlas 2010, and CoreLogic 2009–13 data.

Notes: White/Huber standard errors are clustered at the census tract level. *T*-statistics are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Looking at this in terms of health insurance expansion, a 5 percentage-point increase in the population with health insurance (say from 85 percent in the Bronx to 90 percent in Manhattan) is associated with a 0.8 percentage-point decrease in the likelihood an individual has debt in collections and a 6.3 percent (\$100) decrease in the average amount of debt in collections.¹⁴ Moving from one extreme to the other—0 percent with health insurance to 100 percent with health insurance—is associated with a substantial 16 percentage-point reduction in the likelihood of debt in collections. These results are consistent with previous studies that find that the expansion of health insurance coverage in Oregon and Massachusetts decreased collections debt. In comparison, Finkelstein and colleagues (2012) find that individual health insurance reduces the probability of having an unpaid medical bill sent to a collection agency by 20 percentage points, and Mazumder and Miller (2014) find that Medicaid coverage reduces the probability of having a medical collections debt by 6.4 percentage points.

While we find that health insurance matters, we do not find evidence that health costs—measured as Medicare reimbursements per enrollee—do. We find no statistically significant relationship between average county-level Medicare reimbursements and the likelihood of having debt in collections or the amount of debt in collections.

Homeownership rates and home values are related to debt in collections, but housing rental prices are not. People who live in neighborhoods (census tracts) with higher homeownership rates and home

prices are less likely to have collection debts and the amounts are lower, although the effects are modest. A 10 percentage-point increase in the share of housing units that are owner occupied is associated with a 0.7 percentage-point decrease in the likelihood of having debt in collections and a 6.3 percent (\$100) decrease in the average amount of debt in collections. For property values, we find that a 20 percent increase in the median home value—from \$240,000 to roughly \$290,000—is associated with a 0.8 percentage-point decrease in the likelihood of having debt in collections and a 5.7 percent (\$95) decrease in the average amount of debt in collections. This finding is consistent with Gross and Souleles (2002), who find that census region home prices are negatively related to bankruptcies.

A weaker local housing market characterized by a higher share of mortgages in default and a higher share of properties with negative equity (i.e., underwater) is associated with greater collections debt. Specifically, a 10 percentage-point increase in the share of delinquent mortgages—from 5 percent in Montgomery County, Maryland, to 15 percent in neighboring Prince George’s County—is associated with a 3.5 percentage-point increase in the likelihood of having debt in collections and a 26 percent (\$428) increase in the average amount of collections debt. Delinquent mortgage debt is not included in collections debt and is likely an indicator of broader financial strain. Some areas were hit particularly hard by the housing crisis in the mid-2000s, and some communities and their residents are still struggling to regain their footing. These findings are consistent with recent work using Equifax credit bureau data that suggest a person that defaults on one line of credit—in this case an auto loan—is much more likely to default on other credit lines (Cutts 2015).

Having underwater mortgages matters, but to a lesser extent. A 10 percentage-point increase in the share of properties with negative equity is associated with a 0.34 percentage-point increase in the likelihood of having debt in collections and a 3.9 percent (\$64) increase in the average amount of debt in collections. Having negative equity means that families cannot use their homes to buffer economic shocks. It also affects families’ housing resale opportunities, making it difficult for families to move to neighborhoods with better economic opportunities or to dispose of an asset they cannot afford.

People living in more economically disadvantaged census tracts—defined by higher unemployment rate and lower per capita income—have more debt in collections. Our finding is consistent with studies that find higher unemployment rates are a good predictor of having past due debt (Agarwal and Liu 2003; Avery, Calem, and Canner 2004).¹⁵ With lower incomes and higher unemployment rates, these individuals may not have the reserves to adequately react to adverse economic shocks. Further, increased difficulty finding a job following a layoff, for example, makes it more difficult for people to fulfill their financial obligations. We find that a 1 percentage-point increase in the unemployment rate is associated with a 0.09 percentage-point increase in the likelihood of having debt in collections and a

0.46 percent (\$7) increase in the average amount of debt in collections. The magnitude of this effect is modest, though we note that part of this could result from people in more distressed areas having limited access to credit and subsequently being less likely to have debt in collections.

People living in neighborhoods (census tracts) with higher levels of educational achievement have less debt in collections. These results show that educational achievement matters even after controlling for neighborhood median household income. A 10 percentage-point increase in the share of adults with bachelor's degrees is associated with a 2.2 percentage-point decrease in the likelihood of having debt in collections and a 16.6 percent (\$270) decrease in the average amount of debt in collections. Individuals living in highly educated neighborhoods can benefit from the social networks of their peers. They might receive more opportunities, support, and information that can help them to recover from a financially unstable period (see Galster 2012).

Debt in collections is lower in communities with a higher share of non-Hispanic white residents. This result is consistent with earlier research demonstrating that people who live in areas with larger minority populations are more likely to have delinquent nonmortgage debt (e.g., Avery, Calem, and Canner 2004). Our result is also consistent with the large documented racial wealth gap in the United States (Emmons and Noeth 2015; McKernan, Ratcliffe, Steuerle, et al. 2014).¹⁶ For example, in 2013, the median wealth of white families was 12 times larger than the median wealth of African American families and 10 times larger than the median wealth of Hispanic families (McKernan et al. 2015). Moreover, white families are five times more likely than African American and Hispanic families to inherit money, a difference that also contributes to the racial wealth gap (McKernan, Ratcliffe, Simms, et al. 2014). Further, we find that people in neighborhoods with higher shares of foreign-born residents are less likely to have debt in collections. This result is consistent with research that finds that many immigrant groups are hesitant to take on debt (Paulson et al. 2006). Additionally, immigrants are more likely to have “thin” credit files (Board of Governors of the Federal Reserve System 2007; Osili and Paulson 2004), which can restrict access to formal credit markets and limit collections debt.

Household structure is also related to debt in collections; specifically, the share of households in a census tract that are headed by single mothers is related to debt in collections. A 10 percentage-point increase in share of households headed by single mothers is associated with a 0.7 percentage-point increase in the likelihood of having debt in collections and a 4.6 percent (\$75) increase in the average amount of debt in collections. Single mothers have higher poverty rates and are more financially vulnerable, with fewer resources to buffer adverse economic shocks (Carasso and McKernan 2008).

Finally, older and younger Americans are less likely to have debt in collections. People ages 65 and older are the least likely to have debt in collections and have the lowest amounts of debt in collections. This is followed by people ages 22 and younger, who likely have limited access to credit. People between the ages of 23 and 34 are the most likely to have debt in collections reported in their credit files and carry the largest amounts of debt in collections. Our results are consistent with life-cycle patterns of debt acquisition (Carasso and McKernan 2008). According to the permanent income hypothesis, individuals spread their consumption over their life cycle. As individuals begin to have access to credit, they take on debt to finance their consumption and investments, then pay down their debt over time.

Robustness Checks

We present robustness checks for the paper's main findings in this section, focusing on collections debt acquired in the past two years in contrast with the seven-year window we have been using up to this point. Specifically, we examine two alternative dependent variables: (1) an indicator of whether an individual has acquired debt in collections in the past two years (table 4, column 1) and (2) the amount of debt in collections (log) acquired in the past two years (table 4, column 2).¹⁷ The most recent debt in collections restriction assures that debt in collections does not represent bills that have been long forgotten and/or do not reflect current levels of consumer financial distress.

Overall, analyses using this alternate dependent variable produce results very similar to those from our primary specification, with all significant coefficients having the same sign. One key difference is that health costs are significantly related to debt in collections in this alternate analysis. Specifically, a 10 percent increase in the average Medicare reimbursements per enrollee is associated with 0.2 percentage-point increase in the likelihood of having debt in collections and a 2.1 percent (\$20 at the mean) increase in the amount of recent debt in collections. One possible explanation for why health costs are only significant when most recent debt in collections is used as the dependent variable is that many individuals are unaware of old medical debt, because they assume it was covered by their health insurance.

Throughout the paper, we have defined debt in collections as any debt in collections greater than \$100 to exclude small bills that can be easily forgotten, thereby better representing measures of financial distress. As an additional robustness check, we also estimate models using an indicator of whether the individual has debt in collections of any amount (i.e., we do not set to zero “nuisance” collections below \$100). We find quantitatively similar results in analyses without any restrictions on the amount of debt in collections.¹⁸

TABLE 4

Relationship between Recent Debt in Collections and Local- and Individual-Level Characteristics, Robustness Check

Dependent variable: Method: Parameter: average marginal effect Model	Has debt in collections and recent activity Probit (1)	Ln(amount recent debt in collections + 1) Tobit (2)
Health		
Share of population uninsured	0.077 (8.35)***	0.622 (8.28)***
Log (health cost)	0.021 (3.72)***	0.211 (4.36)***
Housing		
Log (median housing value)	-0.030 (-15.78)***	-0.237 (-15.55)***
Log (median rent)	-0.001 (-0.41)	-0.011 (-0.79)
Share homeownership	-0.040 (-10.34)***	-0.350 (-11.16)***
Share of delinquent mortgage	0.260 (9.24)***	2.041 (8.51)***
Share of properties with negative equity	0.019 (3.31)***	0.191 (4.00)***
Economic		
Unemployment rate	0.048 (3.71)***	0.266 (2.59)***
Log (median household income)	-0.024 (-10.18)***	-0.199 (-10.60)***
Education (omitted: less than high school)		
Share high school diploma or GED	0.013 (0.88)	0.195 (1.72)*
Share some college	-0.014 (-1.15)	0.062 (0.69)
Share bachelor's	-0.156 (-9.27)***	-1.183 (-9.10)***
Share more than bachelor's	-0.165 (-11.67)***	-1.394 (-12.28)***
Race (omitted: non-Hispanic white)		
Share non-Hispanic black	0.123 (31.79)***	0.915 (27.63)***
Share non-Hispanic Asian	0.032 (3.50)***	0.192 (2.39)**
Share non-Hispanic other	0.148 (12.84)***	1.190 (12.01)***
Share Hispanic	0.048 (8.13)***	0.389 (8.76)***
Share foreign-born	-0.112 (-12.04)***	-0.800 (-11.17)***
Share single-mother families	0.05 (8.55)***	0.344 (7.52)***

Dependent variable: Method: Parameter: average marginal effect Model	Has debt in collections and recent activity Probit (1)	Ln(amount recent debt in collections + 1) Tobit (2)
Individual age (omitted: 35–49)		
22 or younger	-0.096 (-47.41)***	-0.806 (-46.87)***
23–34	0.020 (21.66)***	0.152 (20.85)***
50–64	-0.079 (-44.61)***	-0.640 (-42.23)***
65 or older	-0.231 (-74.04)***	-1.931 (-65.00)***
Missing age	-0.335 (-99.46)***	-2.771 (-93.22)***
State dummies	Yes	Yes
Observations	6,499,499	6,499,499

Sources: TransUnion data, 2008–12 American Community Survey, Dartmouth Atlas 2010, and CoreLogic 2009–13 data.

Notes: White/Huber standard errors are clustered at the census tract level. *T*-statistics are reported in parentheses.

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Conclusions

This paper describes the geographic distribution of debt in collections among US consumers and measures the local characteristics with which it is associated. Debt in collections shows significant geographic variation, with the South and West presenting the highest levels.

We identify local conditions significantly related to debt in collections. After controlling for local-level income and other characteristics, we find that people who live in neighborhoods with lower health insurance coverage, lower housing values and less homeownership, more delinquent mortgages and homes with negative equity, lower educational attainment, a higher share of African Americans and Hispanics, and higher unemployment rates are significantly more likely to have debt in collections. These results are robust to alternative measures of debt in collections that consider only recent debt in collections activity. While these characteristics are measured at the local level, they also proxy for individual-level characteristics.

Back-of-the-envelope calculations based on the magnitude of our measured relationships suggest that local conditions may play an important role in financial distress. For example, if the share of properties with negative equity across the United States was 10 percentage points lower, then the

country might have an estimated \$14 billion less in aggregate debt in collections, all else equal. Focusing in on a local area right outside Washington, DC, if the financial health of Prince George's County, Maryland, as measured by the share of delinquent mortgages, was similar to that of its neighbor Montgomery County, then Prince George's could have an estimated \$262 million less in debt in collections across its population.

Similarly, if the share of people with health insurance coverage was 5 percentage points higher nationwide, then the United States might have an estimated \$22 billion less in debt in collections, all else equal. And, if the population share with health insurance in the Bronx had been the same as in Manhattan, then the Bronx could have an estimated \$93 million less in debt in collections across its population.

The results suggest that steps to improve local financial health could improve the well-being of all residents, not just those in poor financial health. The potential importance of local conditions highlighted in this paper can begin to guide place-conscious efforts (Kubisch et al. 2010; Theodos and Firschein 2015).¹⁹ Place-conscious efforts may include targeted financial products, programs, or services, such as financial coaching and matched savings programs that can lead families onto more financially secure footing (Harris et al. 2014; McKernan et al. 2011; Theodos et al. 2015). These results also help identify target populations at higher risk of financial distress (e.g., people without health insurance coverage, low home values and underwater mortgages, low educational attainment, unemployment, single mothers, African Americans and Hispanics).

The results further suggest that health policy and housing policy have implications beyond physical health and housing. The Great Recession was one of the most tumultuous periods for housing markets in US history, and homeownership rates have fallen to levels not seen since the 1960s. Beyond this, dramatic changes in health insurance are sweeping the country, and our research adds to the evidence (e.g., Finkelstein et al. 2012; Mazumder and Miller 2014) that health policy also affects an individual's financial health.

This work provides one of the first views into the relationship between a wide array of local conditions and consumer financial distress (as measured by debt in collections). Through analysis of an interlocking set of data spanning multiple economic factors, we describe a set of relationships amenable to public policy intervention. Future work should focus on further establishing definitive causal links but, in the meantime, this work serves as an initial platform from which policymakers can begin to rethink economic factors relevant to both neighborhoods and the United States as a whole.

Appendix

TABLE A.1

Debt in Collections by State

State	Share with debt in collections	Average debt in collections
Alabama	37.9%	\$2,052
Alaska	30.8%	\$1,930
Arizona	36.2%	\$2,168
Arkansas	36.5%	\$1,663
California	30.2%	\$1,583
Colorado	28.9%	\$1,641
Connecticut	24.5%	\$1,121
Delaware	35.3%	\$1,772
District of Columbia	38.8%	\$1,346
Florida	38.3%	\$2,358
Georgia	39.0%	\$1,804
Hawaii	20.5%	\$1,172
Idaho	26.2%	\$1,677
Illinois	31.7%	\$1,567
Indiana	33.1%	\$1,617
Iowa	24.0%	\$1,169
Kansas	28.4%	\$1,444
Kentucky	37.3%	\$1,722
Louisiana	40.0%	\$1,724
Maine	26.6%	\$1,413
Maryland	34.2%	\$1,453
Massachusetts	21.5%	\$973
Michigan	32.1%	\$1,407
Minnesota	18.2%	\$1,002
Mississippi	41.9%	\$1,892
Missouri	32.6%	\$1,891
Montana	23.5%	\$1,556
Nebraska	23.0%	\$1,258
Nevada	43.5%	\$2,968
New Hampshire	25.5%	\$1,454
New Jersey	27.2%	\$1,145
New Mexico	36.4%	\$1,749
New York	25.7%	\$1,281
North Carolina	37.5%	\$1,625
North Dakota	17.1%	\$901
Ohio	32.5%	\$1,460
Oklahoma	36.1%	\$1,836
Oregon	28.2%	\$1,515
Pennsylvania	28.6%	\$1,427
Rhode Island	27.6%	\$1,243
South Carolina	42.6%	\$2,350
South Dakota	22.5%	\$1,452
Tennessee	36.4%	\$1,635
Texas	41.6%	\$2,116
Utah	27.2%	\$1,572

State	Share with debt in collections	Average debt in collections
Vermont	25.5%	\$1,044
Virginia	28.9%	\$1,428
Washington	28.5%	\$1,621
West Virginia	37.6%	\$1,876
Wisconsin	24.6%	\$1,278
Wyoming	27.1%	\$1,790
Total	32.4%	\$1,650

Sources: Debt past due and in collections from authors' calculations based on September 2013 TransUnion data.

Note: Monetary amounts are in 2013 dollars.

Notes

1. See for example Besharat, Carrillat, and Ladik (2014); CFPB (2014); Dobbie and Song (2015); McCarthy (1997); and Zinman (2014).
2. More flexible definitions of debt in collection are used in the lending industry and can include, for example, any debt that is not current or that is 90 or more days past due.
3. A key exception is medical bills for elective procedures, such as cosmetic plastic surgery.
4. Also from E. Johnson, S. Atlas, and J. Payne, "Time preferences, mortgage choice and strategic default," unpublished manuscript (New York: Columbia Business School, Columbia University, 2011).
5. For example, living in a neighborhood with a high unemployment rate can reflect an individual's employment status (e.g., unemployed) and a neighborhood's employment status (e.g., living in a high unemployment rate neighborhood and thus having a local network that cannot help in a financial emergency). Both elements may be related to debt in collections. We cannot disentangle these two elements because (with the exception of age) the credit bureau data do not provide information on individuals' demographic or nondebt economic characteristics.
6. Census tracts average about 4,000 inhabitants.
7. Data limitations restrict our ability to obtain CoreLogic housing market data at the zip code level for less-populated areas.
8. We only have access to the CoreLogic data starting in 2009.
9. The year 2010 is the most recent measure of health spending at county level from the Dartmouth Atlas of Health Care.
10. For more information on FICO determination, see, "A look at FICO® Score 8 and why there are multiple versions of FICO® Scores," accessed May 31, 2016, <http://www.myfico.com/crediteducation/fico-score-8.aspx>.
11. In the probit and Tobit models, we normalize the variance of the error to equal 1.
12. We add 1 to the amount of debt in collections because the natural log of 0 is not defined. We take the natural log of debt in collections because of its skewed distribution.
13. We only capture debt in collections reported in people's credit files, so we miss (a) any debt in collections that has not been reported to the credit bureau and (b) debt that is out of statute (more than seven years past due) and no longer reported on the credit file but is still owed and being actively collected.
14. A 5 percentage-point increase in the share of the population with health insurance is roughly half a standard deviation from the mean (see table 2, share of the population without health insurance).
15. These studies do not examine debt in collections.
16. Also see Rakesh Kochhar and Richard Fry, "Wealth Inequality Has Widened along Racial, Ethnic Lines since End of Great Recession," *Fact Tank* (blog), Pew Research Center, December 12, 2014, <http://www.pewresearch.org/fact-tank/2014/12/12/racial-wealth-gaps-great-recession/>.
17. Precisely, people with debt in collections with recent activity include those with (a) an increase in debt in collections of \$25 or more between October 2011 and September 2013 (a two-year period) and (b) with at least \$100 of debt in collections in September 2013. To create the amount of recent debt in collections, we look at monthly changes in debt in collections between October 2011 and September 2013. We then identify the months when the increase in debt in collection was nontrivial (i.e., greater than \$25). The amount of recent debt in collections is defined as the sum of all nontrivial changes between October 2011 and September 2013.

18. These results are available upon request.
19. Margery Austin Turner, "Tackling poverty in place," *Urban Wire* (blog), Urban Institute, December 10, 2014, <http://www.urban.org/urban-wire/tackling-poverty-place>.

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