Material Hardship among Lower-Income Households: The Role of Liquid Assets and Place

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Abstract

Lower income households are at risk for material hardship, particularly amidst the economic fallout of COVID-19. Where one lives (e.g. suburb, small town) may affect this risk due to variable access to resources, yet the evidence is mixed concerning the influence of place. We used a pooled, national cross-sectional sample of 66,046 lower-income tax filers to examine differences in material hardship in rural, small town, micropolitan, and urban areas. Controlling only for standard demographic variables, hardship risk appears higher in non-urban areas, yet these differences disappear after controlling for financial characteristics such as liquid assets and home ownership.

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Introduction

Before the COVID-19 pandemic, many U.S. households were struggling financially; the crisis is certain to make things worse. Half of households found it somewhat or very difficult to cover their usual expenses and pay bills, 20% experienced an unexpected drop in income, and 19% spent more than their incomes. Over half of U.S. households do not have an emergency fund, which is defined as having saved enough money to cover three months of living expenses in the event of a job loss or other major source of income loss (FINRA Investor Education Foundation [FINRA], 2019). In fact, nearly a third of households are not saving any of their income (Board of Governors of the Federal Reserve System [Federal Reserve], 2019). This lack of savings is of concern given that over half of U.S. households have experienced a large and unexpected expense, such as a health emergency or significant loss of income, in the prior year (Pew Charitable Trusts, 2017). This vulnerability to shocks will only be amplified in the wake of the economic impact of the COVID-19 pandemic.

Low- and moderate-income (LMI) households are especially economically vulnerable. Almost half of U.S. households with annual incomes under $40,000 say they are just able or struggling to meet their needs; only a third would cover an unexpected $400 expense with liquid assets or a credit card that they would pay off at the end of the month (Federal Reserve, 2017). Indeed, only 23% of households with annual income under $25,000 have an emergency fund (FINRA, 2019). In addition to having too little income to cover and exceed expenses (Browning & Lusardi, 1996; Chang, 1994), income fluctuations due to factors such as irregular work hours and seasonal employment are a key reason why LMI households struggle to pay bills and save (Federal Reserve, 2017; Morduch & Schneider, 2017). Another reason is that over 70% of LMI households spend over 30% of their incomes on housing (Federal Reserve, 2019). Lacking liquid

assets, LMI households turn to debt, largely through accessing credit cards, to pay for ordinary expenses (Seefeldt, 2015).

Financial insecurity is clearly illustrated when households experience material hardship - difficulty meeting basic needs such as food and housing (Beverly, 2001). Not surprisingly, income and material hardship are strongly related (Mayer & Jencks, 1989; Heflin, 2014; Mimura, 2008; Siebens, 2013). The incidence of material hardship was 36% among households in the lowest income quintile compared to 29% and 21% of households in the next two highest quintiles (Siebens, 2013). Similarly, among a sample of lower-income households, 59% had experienced at least one form of material hardship in the six months after filing their taxes (Authors, 2018a). Nearly a third of households with income below 185% of the federal poverty level were food insecure compared to only 12% of all U.S. households (Coleman-Jensen, Rabbitt, Gregory, & Singh, 2017). The negative consequences of material hardship are myriad: depression (Heflin & Iceland, 2009; McCarthy et al., 2018), family stress and child maltreatment (Cummings & Davies, 1999; Kang, 2013), poor child and adolescent development (Conger et al., 1994; Gershoff et al., 2007; Kainz et al., 2012; McLoyd, 1990; Rauh et al., 2004), inhibited labor market participation (Bauman, 2002), and residential instability (Desmond & Kimbro, 2015).

The role of place is important to consider in determining a household's likelihood of experiencing material hardship. Income and employment growth are lower while poverty is higher in rural compared to urban and suburban communities (U.S. Department of Agriculture Economic Research Service [USDA], 2019), which suggests rural households may be more likely to experience material hardship. Yet the evidence on the relationship between urbanicity and material hardship is mixed (Coleman-Jensen et al., 2017; Nord & Leibtag, 2005; Ouellette et al., 2004).

The relationship between urbanicity and material hardship may be better understood when considering a wider range of household economic characteristics and circumstances. For example, liquid assets, not just income, predict material hardship (Authors, 2018b; Gjertson, 2016; McKernan, Ratcliffe, & Vinopal, 2009; Ribar & Hamrick, 2003; Shobe, Narcisse, & Christy, 2018). In addition, the ability to borrow affects material hardship. Thus, a household's ability to borrow and save affects the likelihood of material hardship independent of income (Ribar & Hamrick, 2003), which is consistent with economic theory concerning consumption smoothing (Carroll, 1997; Leland, 1978).

The purpose of this study is to better understand the relationship between urbanicity and material hardship by controlling for and examining an array of household financial characteristics and circumstances beyond income and demographic characteristics. We analyze data from a pooled cross-sectional sample of lower-income tax filers (N=66,046) who completed a detailed household financial survey and use USDA 2010 Rural-Urban Commuting Area (RUCA) codes to examine differences among urban, micropolitan, small town, and rural households.

We find that non-urban households have a greater prevalence of and odds for material hardship based on a standard set of demographic controls, yet these differences mostly disappear when controlling for additional factors such as liquid assets, unsecured debt, and bank account and credit card ownership. We also find that despite similarities in income, urban households have much higher liquid net assets than non-urban households and a lower probability of material hardship based on the same amounts of liquid assets. In using an entirely low-income sample, we focus on the most economically vulnerable households across urban and non-urban settings to help inform public policies aimed at financial inclusion and poverty alleviation.

Material Hardship and Urbanicity

The difficulty households experience in meeting their basic needs may differ based on urbanicity. Rural areas and small towns offer fewer economic and job opportunities and have fewer resources such as banks, colleges and universities, large retail stores, high speed internet access, health care facilities, and community-based organizations. Yet the cost of living in urban areas is much higher – especially for housing - and urban environments are more complex spaces to navigate due to factors such as traffic and crime. Conversely, rural residents have more natural resources to use to lower expenses and subsist on lower incomes (McGranahan, 2003), though poorly maintained roads, no public transportation options, and the length of time it takes to get to jobs, medical care, and shopping pose challenges.

Personal income is 26% lower and growing more slowly in non-urban compared to urban areas. Rural communities have been slower to recover after the Great Recession, with employment growing at annual rates (0.4%) less than half those of urban areas (1.5%) between 2010 and 2018, due in part to slower population growth (USDA Economic Research Service, 2019). Most (85%) counties in the U.S. designated as experiencing persistent poverty (i.e., 20% or more of households living in poverty) are in rural areas (USDA, 2017). Additionally, people living in rural areas are more likely to be uninsured or underinsured when compared to their urban counterparts (National Advisory Committee on Rural Health & Human Services, 2014). Even with passage of the Affordable Care Act in 2010, pronounced disparities in access to health insurance among rural populations remain (Newkirk & Damico, 2014).

The social and economic indicators outlined above suggest material hardship might be higher in rural compared to urban areas, yet the evidence is mixed and depends on types of hardship and ways of measuring urbanicity. The overall prevalence rate of experiencing any type

of material hardship ranged from 19 to 25% based on data from multiple panels (1992 to 2003) of the Survey of Income and Program Participation (SIPP) and ranged from 18 to 24% in metropolitan areas. Rates for specific types of hardship such as not having enough to eat, not paying the full amount of utility bills, and not paying the full amount of rent or mortgage were similar across panel years for metropolitan areas compared to the U.S. (Yelowitz, 2017). In 2011, the overall rate of households experiencing at least one type of material hardship based on the SIPP was 22%. A higher proportion of central city households had difficulty meeting two or more basic needs (19%) than suburban (11%) and nonmetropolitan (12%) households (Siebens, 2013).

Food Insecurity

Other research has focused on food insecurity and housing cost burden as specific instances of material hardship. Nord et al. (2010) found that household food insecurity prevalence was highest in urban counties, followed by non-urban and suburban counties. Controlling for income and other household characteristics, Coleman-Jensen (2017) found that households in suburban and urban counties had 30% and 28% greater odds of food insecurity ($p < .001$) than households in non-urban counties, respectively. In a systematic review of 18 studies, 13 of which were conducted in the U.S., Carter, Dubois, and Tremblay (2013) found that rurality was inversely related to food insecurity, concluding that living in a rural area may be a protective factor. That food insecurity is lower in rural places is consistent with the finding that urban households spend more on food than rural households (Hawk, 2013). An exception was a study of one urban and six rural counties in central Texas in which rural residence was associated with food insecurity (Dean & Sharkey, 2011).

Housing Hardship

The national prevalence rate of housing cost burden – defined as spending more than 30% of income on housing – was 32% in 2016 and higher among renters compared to owners. Housing cost burden is associated with place. Almost 40% of households in the ten largest metropolitan areas are cost burdened, compared to 26% in small metropolitan and 25% in rural communities (Joint Center for Housing Studies, 2018). Similarly, households living in rural suburb and rural nonmetropolitan places had much lower prevalence of housing induced poverty – being unable to pay for basic needs after paying for housing - compared to households in central city, urban suburban, and urban nonmetropolitan and suburban places (Kutty, 2005). The shortage of affordable housing units for lower-income renters is more acute in urban compared to rural communities (Getsinger et al., 2017).

Indirect Factors

Additional research indicates that factors known to explain variation in hardship differ based on urbanicity. For instance, whereas homeownership is associated with decreased hardship (Joint Center for Housing Studies, 2018; Lerman & Zhang, 2014), data from the American Community Survey (ACS) indicate a homeownership rate 20 percentage points higher in rural compared to urban areas (Mazur, 2016). In addition, households outside of metropolitan statistical areas (MSAs) have median household credit card balances that are $700 less than households in MSAs (Comoreanu, 2017). This might mean that indebted households are less able to meet basic needs or that the debt itself makes covering basic needs more possible.

Analyzing data from cross-sectional samples in the Panel Study of Income Dynamics (PSID), Fisher and Weber (2004) found that living in a nonmetropolitan (rural) or in a central metropolitan county was associated with higher risk of being asset poor (i.e., lacking net assets

needed to meet basic needs for three months at the poverty level), controlling for employment status and other household and demographic characteristics. Households that are asset poor are at elevated risk for material hardship because they lack resources that are immediately or readily available to replace income to meet basic needs (Gjertson, 2016; McKernan et al, 2009).

Place also impacts residents' access to resources that provide support and opportunities for low-income residents. Most (82%) individuals who live in education deserts - having no colleges or universities within 25 miles or having access to a single community college within 25 miles - are rural residents (Rosenboom & Blagg, 2018). This may limit rural residents' opportunities to gain new skills and credentials to increase earnings. The vast majority (87%) of zip codes in the U.S. that lack either a bank or credit union are in rural areas, while the population-adjusted density of banks and credit unions is 14% lower in rural compared to urban zip codes (Authors, 2017a). Lack of access to financial services may make it more difficult to save for emergencies, manage spending, and access credit (Authors, 2019). Among Earned Income Tax Credit (EITC) recipients, hardship risk was greater among households without bank accounts compared to those with accounts (Lim, Livermore, & Davis, 2010). Similarly, Birkenmaier and Kim (2016) found a relationship between bank account ownership and food security.

Mobile and digital banking might be an opportunity to expand access to financial services in rural areas. However, over a quarter of rural residents lack broadband or high-speed internet access, compared to only 2% of urban residents (Federal Communications Commission, 2019), and those rural residents who do have internet access often experience unreliable service (Tomer, Kneebone, & Shivaram, 2017). Authors (2020) work suggest that 44% of rural residents living in high-poverty rural zip codes do not have high-speed internet access in their homes.

Nonprofit and public agency safety net resources are critical to helping lower-income families avoid material hardship – services like emergency financial assistance and benefit programs like the Supplemental Nutrition Assistance Program (SNAP). Yet access and use varies by geography. There are fewer nonprofit organizations in rural communities, which affects the amount of philanthropic resources these communities receive. However, Ashley (2014) found that the distribution of foundation funding was equitable in comparison to urban communities in Georgia. Additionally, SNAP participation rates in rural communities are three percentage points higher than in small towns and metropolitan areas (Food Research and Action Center, 2017). Furthermore, the lack of physical and mental health and dental providers practicing and hospital closures in rural communities may mean rural residents are unable to get the care they need to continue to work and earn income through small businesses (Ellis et al., 2009; Health Resources and Services Administration, 2017; Kaufman et al., 2016; National Rural Health Association, 2012; Sawyer et al., 2006).

The evidence reviewed above is mixed concerning the relationship between material hardship and place. Households in urban communities are more likely to experience housing hardship and food insecurity, have lower rates of homeownership and SNAP participation, and encounter severe shortages of affordable housing. Conversely, households in rural communities have lower incomes, fewer financial assets to cope with emergencies, and fewer resources such as nonprofit organizations, colleges and universities, and banks. These factors may influence material hardship in direct and indirect ways.

Study Purpose and Research Questions

The current study seeks to better understand the relationship between material hardship and place by addressing important limitations in the research to date. First, prior research mostly

depends on income and a standard set of demographic variables (e.g., household size, gender) as controls in multivariate analyses. We incorporate a more robust set of variables chosen for their relationship to material hardship, e.g., homeownership, car ownership, liquid assets, and unsecured debt. Incorporating these factors in models predicting hardship risk may offer new insights.

Second, we focus on a lower-income sample. This helps attenuate the relationship between material hardship and place because income is a strong and consistent predictor of hardship. We can assess variation in the risk for material hardship among lower-income households based on the type of community where they live and work.

Third, we use a more nuanced and economically relevant geographic coding scheme that may offer a different set of findings than prior studies, which operationalized place using a subjective assessment of rurality at the zip code level or an urban or rural dichotomy. We crosswalk zip codes with USDA RUCA codes that account for commuting patterns to tap into within-county population and economic diversity and examine four different types of communities, not just urban or rural.

Fourth, given the strong association of liquid assets with material hardship, we examine whether risk for material hardship varies based on different amounts of assets across the four types of communities. This helps identify whether the amount of liquid assets low-income households need to reduce their risk for hardship differs by place. Perhaps lower-income households in rural and small town communities need less in emergency savings than in large cities where cost of living is higher.

Based on these contributions, our research questions are:

Research Question 1: Do the financial characteristics and circumstances of lower-income households vary by place?

Research Question 2: Does risk for material hardship among lower-income households vary by place after controlling for financial characteristics and circumstances?

Research Question 3: Does the relationship between different amounts of liquid assets and material hardship among lower-income households vary by place?

Research Question 4: Does the relationship between different amounts of unsecured debt and material hardship among lower-income households vary by place?

Findings from our study can be used to inform community-based interventions and state and federal policies aimed at improving the economic stability of lower-income households in different communities.

Methods

Sample and Design

Data for this study were from a pooled, cross-sectional sample of 66,046 lower-income tax filers who completed a household financial survey (HFS) when they filed their federal income tax returns using (blinded – tax program) in 2013, 2014, 2015, and 2016 and anticipated receiving a refund. (Blinded – tax program) is an online tax filing software program offered for free to taxpayers who have lower incomes (e.g., adjusted gross income of $33,000 or less in 2016), qualify for the Earned Income Tax Credit, or are active duty military personnel with limited adjusted gross income (e.g., $64,000 or lower in 2016).

The opportunity to complete the HFS was part of the (blinded) initiative, a project aimed at testing different types of messages and changes in refund allocation options to encourage tax refund saving among lower-income persons who file their federal income tax returns online using (name of software). In pooling the HFS datasets across four study years, 15,986 duplicate observations were identified and removed. These observations represented individuals who completed the HFS in more than one year. Data also came from administrative tax data taken from the tax return itself. The study was approved by the Institutional Review Board of a Midwestern university, and participants who completed the HFS provided informed consent to engage in the study.

Measures

Dependent variables. Dependent variables for the study included material hardship, and tax refund allocation. Material hardship (Beverly, 2001; Nelson, 2011; Short, 2005) was measured by asking participants whether in the 12 months prior to tax filing they or someone in their tax household had paid less than the full amount of at least one rent or mortgage payment (housing hardship), skipped a bill payment or made a late payment (bill pay hardship), and could not afford the type or amount of food they needed (food insecurity). Responses were coded ‘1’ if the participant indicated they experienced the hardship, and ‘0’ if they did not.

These measures of material hardship assess household consumption which is affected by the cost of living in a community, which differs based on urbanicity. For example, whether a household missed a housing payment is a function both of their available financial resources and the rent or mortgage amount, which reflects local housing costs (Warren, 2018). This measurement approach is consistent with the U.S. Census Bureau's Supplemental Poverty

Measure which is based on consumption standards and adjusts for regional cost of living (Fox, 2019).

Independent variables. Independent variables of interest in this study with respect to research questions were urbanicity, liquid assets and unsecured debt. Liquid assets was measured by summing participants' self-reported amounts held in cash, checking and savings accounts, and prepaid debit cards. Extreme values were winsorized, with values above the 99th percentile recoded at the 99th percentile value. Unsecured debt was measured by summing participants' self-reported credit card, payday loan, unpaid bill, and negative bank account balances and winsorized in the same manner as for liquid assets.

Urbanicity was measured by cross-walking participants' self-reported zip codes from the HFS to the corresponding 2010 rural urban commuting area (RUCA) codes from the U.S. Census Bureau. RUCA codes identify communities with respect to population and commuting patterns to reflect labor markets rather than defining urbanicity at the county level.

Codes were collapsed into the following categories: urban, micropolitan, small town, and rural. The urban category included urbanized areas (UA) with populations of 50,000 or greater, as well as areas with primary and secondary commuting flows to UAs. The micropolitan category included large urban clusters (LUC) of 10,000 to 50,000 residents, and areas with primary and secondary commuting flows to LUCs. The small town category included small urban clusters (SUCs) with 2,500 to 10,000 residents, and areas with primary and secondary commuting flows to SUCs. The rural category included areas with less than 2,500 residents, and primary flows to areas outside urban areas and clusters and areas with secondary flows to urban areas or clusters.

These four categories for urbanicity were created using RUCA codes to account for variation in the geographic characteristics that a binary urban-rural distinction obscures. Examples of metropolitan zip codes included large cities such as Chicago, IL, smaller cities like Richmond, VA, and areas adjacent to large or small cities, such as Carthage, IN, which is 40 miles east of Indianapolis. Examples of micropolitan zip codes included Carrollton, GA, Montrose, CO, and Marshall, TX. Examples of small town zip codes included Havre, MT, Franklin, NC, and Grinnell, IA. Examples of rural zip codes included Natural Bridge Station, VA, Charlevoix, MI, and Questa, NM.

Covariates. The following covariates were used in multivariate models: age, year of tax filing, gross income, race/ethnicity, gender, marital status, dependents under age 17, current student status, employment status, home, car, checking account, savings account, and credit card ownership, unsecured debt, and health insurance status.

In addition, participants' self-reported budgeting and savings habits were included as covariates to control for financial management behaviors that might affect hardship and tax refund allocation. A value of '1' was assigned if the participant indicated that budgeting carefully and trying to save each month is "mostly" or "very much like me", and '0' if the response was "somewhat", "not much", or "not at all like me". Except for gross income which came from tax return data, all covariates were measured using data from the HFS.

Data Analysis

For research question 1, bivariate analyses were conducted to assess differences in household financial characteristics and circumstances by urbanicity. For research question 2, regarding hardship risk, logistic regression models were estimated for each hardship indicator using a baseline model with demographic covariates (e.g., age, gender), followed by a model that

added a block of financial covariates (e.g., income, liquid assets, car ownership). Following a hierarchical regression approach, Wald tests were conducted to determine whether adding the block of financial covariates improved model fit. These models take the form:

$$\Pr(Y_i) = (\alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon_1) / [1 + (\alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon_1)$$

where Y_i = 1 if the household experienced the material hardship and Y_i = 0 if otherwise; Pr(Y_i) is the probability of material hardship for household i; α is the intercept; X_1 represents urbanicity (urban, micropolitan, small town, or rural); X_2 is a vector of demographic variables (e.g., age, marital status); X_3 is a vector of financial variables (e.g., liquid assets); and ε_1 is the error term. Heteroskedasticity-robust standard errors were clustered at the state level to account for intra-group correlation.

To answer research question 3, interaction terms for liquid assets X urbanicity and unsecured debt X urbanicity were added to models predicting having any of the three material hardships. If each model reflected a statistically significant interaction to indicate that urbanicity moderates the relationship, predicted probabilities were calculated using the margins command in Stata 15 (StataCorp, 2017) for increments of $500 in liquid assets and unsecured debt.

Results

Sample Description

The average age of participants was 35 years old. Most participants were white, single, had no dependents under age 17, and employed either part- or full-time. Just under a third of participants were currently enrolled as students in a post-secondary educational program. There were slightly more males than females. The sample was imbalanced on nearly every demographic characteristic by urbanicity. For example, participants living in urban zip codes

were more racially diverse while participants in non-urban areas were more likely to have dependents under age 17 and be married.

[Table 1 near here]

Financial Circumstances by Urbanicity

As reflected in Table 2, statistically significant differences were found by urbanicity for all household financial circumstances except for unsecured debt. Despite having lower average income than participants in non-urban communities, urban participants had higher liquid assets and net worth, and were more likely to have checking and savings accounts, credit cards, and health insurance, and to indicate they save regularly. For example, urban participants had $986, $1,024, and $867 more in liquid assets than participants in micropolitan, small town, and rural communities $F(3, 65{,}467) = 42.35$, (all pairwise comparisons $p < .001$). These differences in liquid assets were very similar in amount and statistical significance for liquid net worth $F(3, 65{,}347) = 30.20$, $p < .001$, as differences in unsecured debt by urbanicity were very small $F(3, 65{,}614) = 0.23$, $p = .87$. Yet, micropolitan, small town, and rural participants had higher rates of both car and home ownership.

[Table 2 near here]

Material Hardship by Urbanicity: Bivariate Results

Participants living in non-urban communities had higher rates of all types of material and health care hardship than urban participants (see Table 2). Compared to participants living in urban areas, participants living in micropolitan, small town, and rural communities had 23%, 22%, and 30% greater odds of difficulty making rent or mortgage payments (all $p < .001$). Micropolitan, small town, and rural participants also had 36%, 35%, and 41% greater odds than

urban participants of difficulty paying bills (all $p < .001$) and 27%, 28%, and 24% greater odds of experiencing food insecurity, respectively (all $p < .001$).

Material Hardship by Urbanicity: Multivariate Results

Table 3 presents multivariate results concerning material hardships by urbanicity. After controlling for demographic characteristics, some differences in hardship were observed by urbanicity. Households living in micropolitan communities had 13%, 23%, and 13% greater odds of housing ($p < .01$), bill pay ($p < .001$), and food hardship ($p < .01$) compared to urban participants. Small town and rural households also had statistically significant greater odds for bill pay hardship compared to urban participants ($p < .05$). After adding a block of variables controlling for household financial characteristics and circumstances (e.g., liquid assets, unsecured debt), these statistically significant differences disappeared. However, rural households had 11% lesser odds for food insecurity ($p < .05$) compared to urban participants.

[Table 3 near here]

Several demographic and financial covariates were also related to hardship risk. Compared to white participants, black and Hispanic participants had greater odds for all three types of material hardship, while Asian participants had lesser odds. Having a dependent(s) under the age of 17 considerably increased odds of all types of hardship. Liquid assets, checking and savings account ownership, credit card ownership, home ownership, and health insurance were all consistent and strong predictors of less odds of hardships, while unsecured debt was associated with greater odds of all types of hardship.

The interaction between liquid assets and urbanicity was a statistically significant predictor of material hardship ($p < .05$), while the interaction between unsecured debt and urbanicity for material hardship was not ($p = .08$). That is, liquid assets, but not unsecured debt

predicted hardship differently by urbanicity. Therefore, to further examine this source of variation, predicted probabilities of material hardship were calculated for each urbanicity category (urban, micropolitan, small town, and rural) for increments of $500 in liquid assets.

Predicted Probabilities of Hardship by Liquid Assets and Urbanicity

Table 4 displays model-predicted probabilities of hardship according to $500 increments of liquid assets for participants in each of the four urbanicity categories. At all threshold points from $0 to $5,000, the hardship risk is lower among urban compared to all other households. For example, at $2,000 in liquid assets, participants living in rural areas have a probability of material hardship (63%) that is 15% greater than among urban participants (55%), all other things being equal. However, the decrease in hardship probabilities as liquid assets rise is steady across all urbanicity categories, as reflected in Figures 1-4.

[Table 4 near here]

[Figures 1-4 near here]

Discussion

In this study, we examine risk for material hardships among lower-income households living in different types of communities: urban, micropolitan, small town, and rural. We delve more deeply into the financial lives of lower-income households and examine how financial characteristics and circumstances relate to hardship risk by community type. We build on prior research by considering the role of factors like liquid assets and unsecured debt and use a urbanicity coding scheme that uses zip code-level observations and takes both population density and commuting patterns into account.

Concerning our first research question, we find that lower-income households in urban communities are mostly better off financially than households in micropolitan, small town, and

rural communities. Despite having less income, urban households had considerably higher liquid assets and net worth. These households were also more likely to have checking and savings accounts, credit cards, and health insurance, and to save money. However, non-urban households were more likely to own cars and homes, a finding consistent with American Community Survey data (Mazur, 2016; Pucher & Renne, 2005). Urban households had higher amounts of liquid assets – a finding consistent with Fisher and Weber (2004), yet non-urban households were more likely to own non-liquid assets. There were no differences though in amounts of unsecured debt, such as outstanding credit card balances. Thus, the balance sheets of LMI households vary considerably by urbanicity despite similarities in income.

Higher liquid assets among urban households may relate to greater access to banks and credit unions (Authors, 2017a), which is related to household saving (Authors, 2017b), while higher rates of homeownership in non-urban places is related to lower housing costs (Joint Center for Housing Studies, 2018). Liquid assets (Gjertson, 2016; McKernan et al., 2009) and homeownership (Lerman & Zhang, 2014) are associated with decreased material hardship among lower-income households. We also find that being African American, Latinx, or multiracial compared to being white greatly increases odds of hardship, all other things like income, assets, and debt being equal, a finding consistent with prior research on racial economic inequality (Authors, 2018c; Chetty et al., 2020; Shapiro, 2017).

The differences we found for factors like liquid assets and unsecured debt underscore the importance of considering financial variables in addition to income to help understand variation in hardship risk by place. Indeed, regarding our second research question, adding financial variables like liquid assets and unsecured debt made an important difference in findings. Only using a standard set of controls like age, gender, and employment status, hardship risk appears

greater in non-urban places, especially micropolitan communities. Yet these differences disappear when we control for financial variables, while rural households emerge as having less risk for food insecurity, a finding consistent with prior research (Carter et al., 2014; Coleman-Jensen, 2017). Rural households may have more opportunities and resources to grow their own food or barter than urban households, thus decreasing their risk for food insecurity.

Using these additional controls, our finding that risk for housing hardship among lower-income households did not vary by place departs from prior studies (Getsinger et al., 2017; Joint Center for Housing Studies, 2018; Kutty, 2005). It may be that the set of favorable financial characteristics among urban households in our sample (e.g., higher liquid assets than non-urban households) mitigates housing hardship risk. Another possibility is that the urban households in our sample have access to subsidies (e.g., housing choice vouchers, low-income housing tax credits, municipalities with affordable housing unit requirements for developers) that help mitigate higher housing costs. Future research might further examine whether access to and use of different types of housing subsidies varies by place and the degree to which subsidy access affects difficulties paying rent and eviction risk.

Lastly, we find that regardless of the type of place where one lives and works, having liquid assets, limiting unsecured debt, and owning a home, credit card(s), and bank account(s) all help mitigate risk for material hardship. We also find that liquid assets, but not unsecured debt, moderates the relationship between place and hardship risk. At low levels of liquid assets, hardship risk is higher among lower-income households living in micropolitan, small town, and rural compared to urban communities.

Our findings concerning liquid assets, bank account ownership, and hardship risk are important to consider in the wake of the COVID-19 pandemic, which has fomented an economic

crisis of a magnitude not seen in decades in the U.S. All households and especially lower-income ones need emergency savings heading into a major crisis. Households are receiving stimulus payments and additional unemployment assistance through the Coronavirus Aid, Relief, and Economic Security (CARES) Act. However, individuals who lost a job or income need savings to pay bills in the period between their paycheck and when they receive financial assistance. Furthermore, unbanked households – more likely to be in non-urban areas – must wait longer for stimulus checks to be mailed.

These findings underscore the need to ensure all households have access to affordable financial products and services (Authors, 2019). To promote financial inclusion in rural communities, the Community Development Financial Institutions (CDFI) fund could be increased to support service expansions in rural areas. The service test under the Community Reinvestment Act (CRA) could be strengthened to compel banks to better serve rural areas and offer affordable credit products such as Federal Deposit Insurance Corporation (FDIC) Model Safe Accounts. Offering basic financial products and services at post offices could also expand access as there are more post offices than banks or credit unions in rural areas (Authors, 2017). Expanding broadband and cellular access in rural areas would help rural residents better take advantage of digital and mobile banking.

Yet access to financial services alone is insufficient as most lower-income households struggle to save. Even absent a major crisis like COVID-19, material hardship was common among our sample. Given the host of negative outcomes associated with hardship noted earlier in the paper, a broader set of policies and economic reforms concerning a living wage, universal health insurance, and affordable housing and childcare are needed.

Overall, we find that the type of place matters little in determining lower-income households' risk for material hardship. It's not that living in a big city or a small town is not difficult for lower-income households; it's that the economic difficulties these households experience may be universal. That is, our findings do not seem to suggest that lower-income households may be better off living in a certain type of community. Yet practice and policy solutions might need to be different based on place. Low-income households in rural areas and small towns may need greater access to financial services while in micropolitan and urban areas, an increased stock of affordable housing may be critical.

Conclusion

This study assessed differences in financial characteristics and circumstances and risk for material hardship by urbanicity among lower-income households. We found that there are important financial differences among lower-income households in urban, small town, micropolitan, and rural communities. Controlling for these factors, we find that place is generally unrelated to hardship risk, except that rural households are at less risk for food insecurity and that liquid assets lessen hardship risk more for urban than other households. Still, more research is needed. Our study used a sample comprised of lower-income individuals who filed their federal tax returns online and may not be representative of the general lower-income population. Our measurement of hardship was limited; only a single item was used to assess food insecurity and we did not observe the severity or duration of hardship. Nonetheless, that the financial characteristics and circumstances we studied were so strongly correlated with material hardship warrants the use of these variables in future research.

TABLE 1. Sample Description (N = 66,046)

	Urban	Micropolitan	Small town	Rural	All	*p*
Age	34.20	36.33	38.23	39.57	34.70	***
Race/ethnicity						
White	71.39	83.70	86.34	90.75	73.61	***
Black	9.06	5.11	4.80	2.50	8.36	***
Hispanic	9.56	4.87	3.47	2.00	8.69	***
Asian	4.84	1.19	0.62	0.13	4.22	***
Multiracial/other	5.15	5.13	4.76	4.63	5.12	
Gender (ref: Female)						
Male	50.72	49.72	50.94	50.81	50.64	
Female	48.66	49.88	48.91	49.13	48.80	
Other	0.61	0.40	0.16	0.06	0.56	***
Marital status						
Single	67.95	56.44	49.57	48.35	65.66	***
Married	13.11	19.41	21.84	23.46	14.30	***
Separated/divorced	16.82	21.33	25.55	24.33	17.64	***
Widowed/er	2.12	2.81	3.05	3.87	2.26	***
# of dependents <age 17	0.37	0.51	0.52	0.60	0.39	***
Current student	32.94	25.90	19.88	20.09	31.45	***
Employment						
Unemployed	24.89	25.51	26.94	30.21	25.16	***
Part-time	30.34	27.53	26.04	25.16	29.78	***
Full-time	44.77	46.96	47.01	44.63	45.06	*

TABLE 2. Household Financial Circumstances by Urbanicity

	Urban	Micropolitan	Small town	Rural	*p*
Income	$15,661	$16,039	$16,210	$16,187	**
Liquid assets	$3,819	$2,833	$2,795	$2,952	***
Unsecured debt	$2,753	$2,792	$2,760	$2,839	
Liquid net worth	$1,057	$32	$32	$120	***
Own car	74.74	82.91	83.26	87.57	***
Own home	23.18	29.98	35.05	35.99	***
Has a checking account	94.08	91.00	88.96	91.57	***
Has a savings account	74.77	66.97	64.00	64.63	***
Has a credit card(s)	67.99	59.90	60.15	60.27	***
Is a careful budgeter	46.91	48.26	49.55	48.12	*
Tries to save each month	50.00	46.26	46.12	45.34	***
Has health insurance	84.71	81.25	80.28	81.10	***
Material Hardship					
Housing	18.52	21.84	21.69	22.78	***
Bill pay	45.18	52.94	52.63	53.81	***
Food insecurity	36.31	41.94	42.10	41.38	***

TABLE 3. Odds Ratios for Material Hardships by Urbanicity (N=61,341)

	Housing hardship		Bill pay hardship		Food insecurity	
Urbanicity (ref: Urban)	I	II	I	II	I	II
Micropolitan	1.12**	0.97	1.19***	1.04	1.11**	1.00
Small town	1.06	0.92	1.10*	0.96	1.08	0.97
Rural	1.11	0.99	1.14*	1.02	0.98	0.89*
Year (ref: 2013)						
2014	0.84***	0.94	0.71***	0.79***	0.46***	0.46***
2015	0.62***	0.68***	0.53***	0.56***	0.33***	0.32***
2016	0.61***	0.69***	0.51***	0.55***	0.30***	0.30***
Age	0.99**	1.00	1.00*	1.01***	0.99**	1.00*
Race/ethnicity (ref: White)						
Black	1.94***	1.52***	2.43***	1.99***	1.55**	1.26***
Hispanic	1.31***	1.14**	1.37***	1.20**	1.24***	1.10**
Asian	0.63***	0.85*	0.46***	0.57***	0.60***	0.71***
Multiracial/other	1.39***	1.28***	1.41***	1.33***	1.44***	1.36***
Gender (ref: Female)						
Male	0.96	0.93**	0.86***	0.81***	0.85***	0.81***
Other	1.14	0.99	0.98	0.85	1.31*	1.21
Marital status (ref: Single)						
Married	0.99	1.16***	0.96	1.13**	1.03	1.20***
Separated/divorced	1.64***	1.41***	1.74***	1.53***	1.70***	1.49***
Widowed/er	0.91	1.01	0.76***	0.87*	0.81**	0.88
# of dependents under 17	1.38***	1.30***	1.58***	1.46***	1.27***	1.21***
Current student	0.59***	0.76***	0.58***	0.70***	0.67**	0.79***
Employment (ref: unemp.)						
Part-time	0.83***	0.84***	0.99	0.97	0.92***	0.92**
Full-time	0.77***	0.96	0.97	1.15***	0.74***	0.89***
Income/$1,000		0.99**		0.99*		0.99***
Liquid assets/$1,000		0.80***		0.85***		0.89***
Unsecured debt/$1,000		1.04***		1.05***		1.04***
Owns a car		0.97		1.19***		0.96
Owns a home		0.69***		0.71***		0.68***
Has a checking account		0.65***		0.70***		0.79***
Has a savings account		0.79***		0.79***		0.78***
Has a credit card(s)		0.57***		0.63***		0.71***
Uninsured		1.54***		1.80***		1.51***
Constant	0.36***	0.98	1.13**	3.34***	1.57***	3.69***
Wald Chi Square		3753.35***		5907.44***		3684.42

Note: Logistic regression models include state as a cluster variable to adjust standard errors for correlated observations. For each hardship, Model I includes the block of demographic covariates only; Model II adds the block of financial covariates. * $p < .05$; ** $p < .01$; *** $p < .001$.

TABLE 4. Model-Predicted Probabilities of Hardships by Liquid Assets and Urbanicity

Material Hardship	Urban	Micropolitan	Small town	Rural
Amount of liquid assets				
$0	0.61	0.68	0.69	0.72
$500	0.60	0.67	0.67	0.69
$2,000	0.55	0.61	0.60	0.63
$5,000	0.44	0.48	0.46	0.48
$10,000	0.29	0.29	0.24	0.25
$20,000	0.09	0.07	0.04	0.04

Figure 1. Predicted probabilities of material hardship by levels of liquid assets in urban communities.

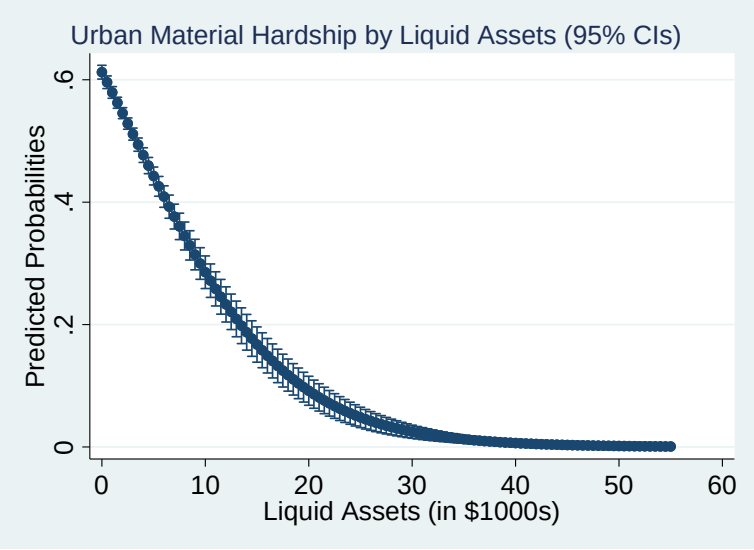


Figure 2. Predicted probabilities of material hardship by levels of liquid assets in micropolitan communities.

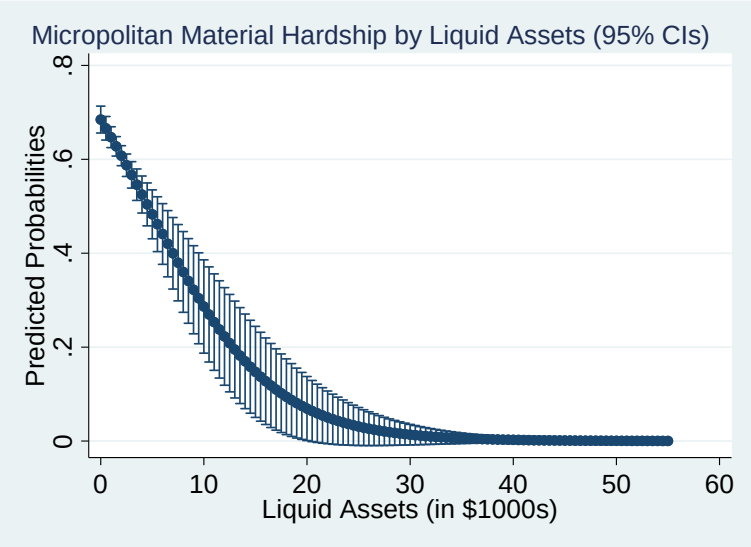


Figure 3. Predicted probabilities of material hardship by levels of liquid assets in small town communities.

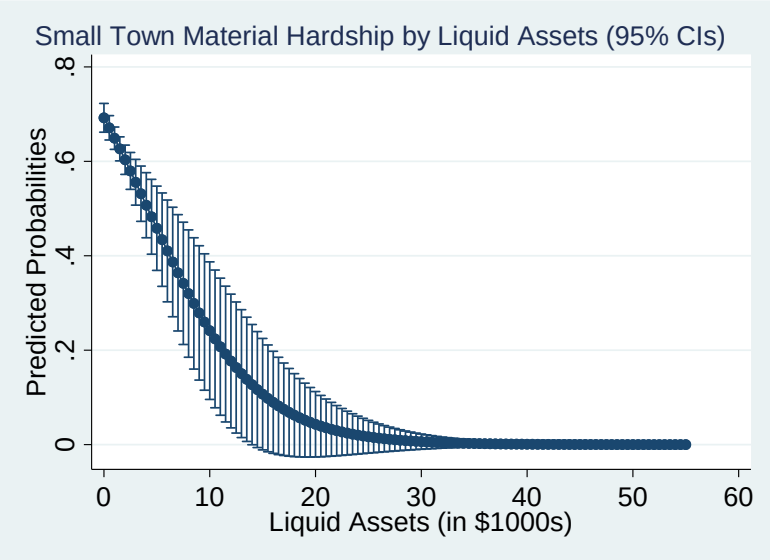
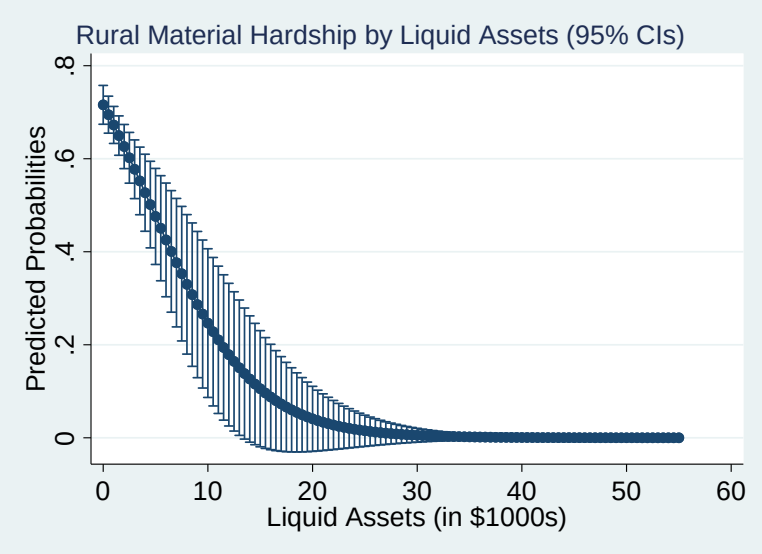


Figure 4. Predicted probabilities of material hardship by levels of liquid assets in rural communities.



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