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METROPOLITAN POLICY PROGRAM THE BROOKINGS INSTITUTION

Borrowing to Get Ahead, and Behind:

The Credit Boom and Bust in Lower-Income Markets

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Findings

Lending in lower-income markets has radically transformed in recent decades, highlighted by a dramatic increase in the supply of credit. However, little is known about lending variations across different lower-income markets, nor the underlying forces affecting borrowing patterns. Using Federal Reserve data and a unique database of over 14 million anonymous credit reports supplied by TransUnion, this paper examines the nation's lower-income credit and lending markets and finds:

- **Over 55 percent of lower-income households held debt in 2004, a 10 percent increase since 1989.** Total debt held by these households increased by 308 percent during this period, now adding up to over \$481 billion. Most of this debt is for mortgages and home-related installment trades. Over 32 percent of lower-income borrowers struggle to pay bills on time; about 27 percent now spend more than 40 percent of their income servicing debt.
- **Usage of credit in lower-income markets varies widely across the country, from a high in Boston (where 75 percent of borrowers in lower-income markets owed money in 2005) to a low in Las Vegas (where less than 40 percent did).** Credit usage in lower-income markets increases as the credit scores of borrowers improves, when divorce rates and the proportion of immigrants decreases, and when the proportion of seniors increases. Total debt increases with rising credit scores of borrowers in lower-income markets, when the proportion of the uninsured and immigrants increases, and when mortgage lending policy becomes more stringent. The highest levels of indebtedness are also found in the areas of the country with the lowest costs of living.
- **Management of credit in lower-income markets also varies widely across the country, from a low in San Jose, where less than 5 percent of borrowers in lower-income markets were behind on debt payments in 2005, to a high in Memphis, where over 18 percent were delinquent on at least one bill.** Delinquency rates in lower-income markets increase as unemployment rates increase, and when the proportion of borrowers without health insurance increases. Surprisingly, the highest delinquency rates in lower-income markets are also in the least expensive areas in the country.
- **Based on an evaluation of credit scores, potential growth in the supply of credit in lower-income markets is also widely variable across the country, from a low in Memphis and Milwaukee, where the average credit score in lower-income markets was 556 in 2005, to a high in Portland and San Jose, where the average score was over 635.** Improvements in the credit score profiles in lower-income markets are associated with increases in credit usage, decreases in delinquency and unemployment rates, and decreases in the proportion of non-white borrowers.

With the expansion of lending in lower-income markets, an entirely new generation of policy implications has emerged, transcending the traditional focus on the supply of credit. Now, policymakers must also be concerned with the ability of consumers to choose from myriad different credit products, the capacity of bad apples in the credit industry to take advantage of information asymmetries and hurt both borrowers and lenders, and the need for research to assess the effect of lending on both borrowers and the businesses underwriting those loans. Yet, policymakers need to proceed cautiously with these recommendations so as to address markets with apparent problems, while preventing disruption to markets without serious problems.

Introduction

Lending in lower-income markets has undergone a radical transformation in recent decades. Just forty years ago lenders were being accused of “redlining” lower-income neighborhoods, systematically denying credit to worthy applicants.¹ These charges were supported by evidence—much of which did not consider lending risks—which showed comparatively high denial rates and low relative loan volumes in lower-income neighborhoods, particularly those with high proportions of minorities. In response, Congress passed legislation and new rules for creditors, including the Fair Lending Act, Community Reinvestment Act, and Home Mortgage Disclosure Act, among others.²

This legislation, combined with sweeping technological and market changes, spurred a dramatic increase in lending in the subsequent years—a trend we refer to as “greenlining.”³ Signs of this trend include that the number of lower-income households (the bottom income quartile) with a mortgage increased by 46 percent between 1989 and 2004; and the overall debt held by lower-income households increased by 308 percent.⁴ During this same period, non-bank, short-term lenders that target lower-income markets, like pawnshops and payday lenders, swelled from a few thousand establishments in the early 1990s to over 30,000 today.⁵

As lending expanded, an entirely new generation of policy implications emerged. Chief among these concerns are worries related to the credit being sold in lower-income markets at comparatively more expensive rates than in higher-income markets.⁶ Non-bank financial service companies, for instance, sell credit at 35 to 40 times the average rate charged by credit cards in some markets.⁷ Similarly, lower-income homebuyers are 36 percent more likely to buy a “high-cost” mortgage than a higher-income home-

buyer; and 50 percent more likely to pay an above average price for an auto loan.⁸ Studies have noted the comparatively higher risk or business costs in some of these lower-income markets, but unexplained price differences remain even after higher risks or costs are controlled for.⁹

At the same time, while access to credit yields benefits for millions of families, doubt is growing that credit is a smart purchase for *all* lower-income consumers that qualify.¹⁰ William Goetzmann and Matthew Spiegel found, for instance, that the return from homeownership is historically lower than alternatives like stocks and bonds, making it “dangerous for homeowners to devote too much of their wealth to an asset that has low historical return and a serious risk of loss over multiple-year horizons.”¹¹ Those risks are particularly high for lower-income households because much higher shares of their wealth are concentrated in housing investments.¹² Similarly, housing experts Eric Belsky, Nicolas Retsinas and Mark Duda recently found that renting was a better option than owning for lower-income borrowers during a “considerable number of years,” indicating that “the constant drum beat for expanded low-income homeownership should be carefully and discriminatingly evaluated.”¹³

Along these same lines, numerous recent studies have pointed to the high relative levels of delinquencies on lower-income accounts, contributing to the evidence that drove investors to recently withdraw billions of dollars in the market value of businesses that specialize in higher risk lending.¹⁴ About one-third of lower-income households, for instance, now report that they have trouble paying their bills on time and occasionally fall behind on payments; and over one in four report that they pay more than 40 percent of their income on debt service payments.¹⁵ Such a large proportion of households reporting difficulty paying for credit and such

highly leveraged positions suggest that many lower-income households may now be overextended.

Over the last forty years, then, borrowing and lending in lower-income markets has substantially expanded, creating countless benefits for lower-income consumers and their underwriters, but also new concerns about the suitability of credit products for lower-income consumers. Yet, public leaders know little about the geographic distribution of the increase in credit usage in lower-income markets, and the attendant rise in debt and delinquencies, curbing their ability to appropriately respond.¹⁶

Lower-income consumers in some markets, for instance, may be handling credit just fine. But, consumers in other markets may be overextended, suggesting they need help managing the supply of and demand for credit. Such geographic information informs the extent of policy needed to respond to any problems, addressing markets where the credit cycle is busting, while guarding against action that disrupts markets where credit supply is booming without serious problems.

Geographic distribution in credit usage also says something about the type of policy needed to respond to credit usage in lower-income markets. Rising unemployment rates, for instance, that cause increases in delinquencies signal different problems with credit usage than if delinquencies increase because of rising consumer debt. The former signals a short term economic shock, while the later cause may signal a longer term market problem, like a behavioral issue or a supply problem.

Lacking this information, public and private leaders may also inefficiently dedicate resources across the dozens of initiatives now underway to expand ownership of credit-backed assets, like education and homes, in lower-income markets. For instance, a community faced with large proportions of consumers with poor credit histories and low homeownership

rates—market conditions that describe the bulk of southern Texas, for instance—may benefit more from investments in credit repair counseling than investments in home-buying assistance.¹⁷

To those ends, this paper first describes the growth in credit usage in lower-income markets between 1989 and 2004, finding that there have been broad increases in usage across different lines of credit. Accompanying these increases has been large increases in the total debt held by lower-income consumers, and a much higher propensity among lower-income borrowers to fall behind on payments. What's more, all of these increases are very large when compared to rates of growth among higher-income borrowers.

We then address how these national trends were reflected in the neighborhoods of 50 major metropolitan areas in 2005, which collectively represent 54 percent of the U.S. population.¹⁸ We find that there are wide disparities in both the usage of credit and the performance of credit, varying because of differences in local economies, like unemployment rates, as well as differences in consumers in lower-income markets, like the proportion of immigrants and divorce rates.

Finally, we address the policy implications of these findings. Where the historic focus on credit in lower-income markets has been on the supply of credit, now policymakers must also be concerned with the ability of consumers to choose from the myriad readily available and constantly evolving credit products, the capacity of bad apples in the credit industry to take advantage of information asymmetries, and the need for new research to assess the effect of this new lending on both borrowers and the businesses underwriting those loans. At the same time, policymakers need to take care in the promulgation of these recommendations to place a priority on markets with apparent problems, while guarding against action that disrupts markets without

serious problems. In short, our conclusion is that we must move from “greenlining” credit in lower-income markets to a more cautious “yellowlining,” an evolution that we believe will foster more wealth and sustainable economic mobility in lower income neighborhoods.

Methodology

About the Data

National trends in credit usage are assessed with data from the 1989 and 2004 Survey of Consumer Finances, currently sponsored by the Board of Governors of the Federal Reserve System with the cooperation of the U.S. Department of the Treasury.¹⁹ In 2004, 4,522 households were randomly selected to participate in the survey, collectively representing the financial profile of American households. The 1989 survey was administered by the Federal Reserve in cooperation with the Department of the Treasury, the Department of Health and Human Services, the National Institute on Aging, the Small Business Administration, the General Accounting Office, the Comptroller of the Currency, and the Congressional Joint Committee on Taxation; and included a profile of 3,803 randomly selected American households. This survey is the most in depth, reliable time-series profile of household financial assets and liabilities available.

Credit usage in the 50 metropolitan areas is based on information from a partial copy of anonymous TransUnion credit reports for a sample of consumers in 50 U.S. metropolitan areas drawn from the first quarter of 2005. TransUnion is one of the three national credit reporting companies in this country that provides the underlying information for millions of business decisions every year, including decisions related to credit access and pricing.²⁰ TransUnion maintains credit histories for an estimated 500 million consumers around the world,

and informs business decisions made in more than 30 countries.²¹

Our sample of borrowers in 50 metro areas includes partial credit reports for about 14.1 million borrowers, or an average of about 13 percent of all adults that live in these metropolitan areas.²² Across the 50 metropolitan areas, there is a standard deviation of about two percentage points from that central tendency. That means, for instance, that the data used in this report includes credit report information for about 510,550 borrowers in the Miami metro area, or about 17 percent of the area's adult population, and 1,544,104 borrowers from the New York metro area, or about 10 percent of that area's adult population. These very large samples provide the capacity to analyze information across the metropolitan areas and between different segments of borrowers within these areas.

TransUnion drew these records from its Trend Data solution, which is drawn from the population of all borrowers with a credit report on file with TransUnion.²³ The sample for Trend Data is drawn every quarter to provide statistically representative information about borrowers from every county, metropolitan area, and state in the country. Depending on the quarter, that sample ranges in size from 21 to 28 million borrowers. Using these data, we created a sub-sample that included the 14.1 million borrowers in Trend Data from the 50 largest metropolitan areas.

The partial credit report differs from the full listing held by credit bureaus in several important respects.²⁴ First, the partial credit report was stripped of all individual identifiers other than the census tract that the borrower lives in. Second, the partial report includes information related to an individual's usage of credit-based products, but this usage is aggregated underneath broad categories of credit, like revolving or bank credit cards, instead of underneath a specific lender and line of credit. Third, the partial

report only includes a listing of the number of inquiries made into the borrower's credit and does not indicate who made the inquiry or why the inquiry was made. Finally, the only public record information included in the reports indicates whether the borrower has filed for bankruptcy protection within the last three years. In total, the partial credit report includes 60 different variables.

Supplemental information about the metropolitan area where the borrower lives is based on a number of sources, including the U.S. Bureau of the Census, ACCRA, state banking departments, and the Bureau of Labor Statistics. We also measure the impact of public policy on borrowing behavior. Mortgage stringency in a state was measured using information about state regulation compiled by the Center for Responsible Lending.²⁵ Payday lending stringency was measured as a dummy variable, where a value of 1 was assigned to metro areas in states where this form of lending is prohibited.²⁶

About the Debt Variables

We consider three different major types of debt. The first type is mortgage loans, which includes all loans secured by real estate. Mortgages are typically paid in installments and are non-revolving. However, one caveat to keep in mind is that the analysis that relies on the Survey of Consumer Finances treats home equity credit as mortgage products, since it is secured by real estate, while the TransUnion analyses treat home equity credit as either mortgages or revolving trades. Lenders report this information differently to the bureau, making it impossible to completely sort these loans into a single category of debt. The implications of this caveat for this analysis of lower-income markets are marginal, at best, since only about 2 percent of all lower-income households have a home equity line of credit.²⁷

The second type of debt we consider are all revolving loans, which are loans

that allow a consumer to borrow against a line of credit once its been either fully or partially repaid. Common examples include credit cards and retail cards. Finally, we consider installment debt, which is a non-revolving loan that is repaid with a fixed number of equal-sized payments and is not secured by real estate. Auto and education loans are two common types of installment debt. Unless otherwise noted, all dollar figures for lines of credit, loans, and any other currency variable, are reported in 2004 dollars.

Although these categories of debt represent the universe of debt categories, we may not be capturing the universe of all debt. Over 30,000 non-bank financial service retail branches, for instance, lend money in lower-income markets, and only a few of these reportedly share information with the credit bureaus.²⁸ Other types of inconsistently reported information include educational loans, health loans, and personal loans. Similarly, there may be some instances where lenders report information to only one of the three major bureaus, although there is no empirical data to support this conjecture. Despite these shortcomings, this is the information that is used in millions of business decisions every year, and thus has an immense amount of analytical value.

About the Income Thresholds

The national assessment of borrowing trends across income groups and neighborhood income groups is assessed using quartiles of income in 1989 and 2004. Low- and moderate-income borrowers are all borrowers that earned an income in the bottom quartile, or approximately less than \$17,594 in 1989 and \$22,000 in 2004 (2004 dollars).

Borrowing within and across different lower-income markets is assessed using the median household income of the census tract that the borrower lived in 2004. The lower-income markets are all of the census tracts in the 50 metro areas in our analysis that

have a lower median income than 75 percent of all of the other census tracts.²⁹ The lower middle income markets are those that fall between the 25th and 50th percentiles; the higher middle fall between the 50th and 75th percentile; and the high-income markets have a median income higher than 75 percent of the other census tracts in the analysis.

Markets refer to lower-income neighborhoods within a given metropolitan area.³⁰ We assess markets, rather than borrowers, with TransUnion Trend Data because we did not have a verifiable income estimate of the borrower in the credit bureau data. As important, the accusations of redlining were (are) largely based on assessments of lending across different neighborhoods. This makes it informative to assess how lending has changed across different markets, rather than the borrowers themselves.

About the Impact Analyses

Impact analyses are provided in several areas of this report. These analyses are based on first difference effects calculated from regression models, the results of which appear in Appendix A of this report.³¹ First differences are the effect on the dependent variable caused by moving a variable from a standard deviation below its mean to a standard deviation above its mean, while every other variable is held constant at its mean value. Such analyses illustrate the comparative importance different variables have on a given dependent variable. We have also provided the means and ranges of the variables in the Appendix so that readers can calculate additional effects than we have space to provide.

Findings

A. Over 55 percent of lower-income households held debt in 2004, a 10 percent increase since 1989.³²

Total debt held by these households increased by 308 percent during this period, now adding up to over \$481 billion. Most of this debt is for mortgages and home-related installment trades. Over 32 percent of lower-income borrowers struggle to pay bills on time; about 27 percent now spend more than 40 percent of their income servicing debt.

How Much Has Lending to Lower-Income Consumers Increased Over Time?

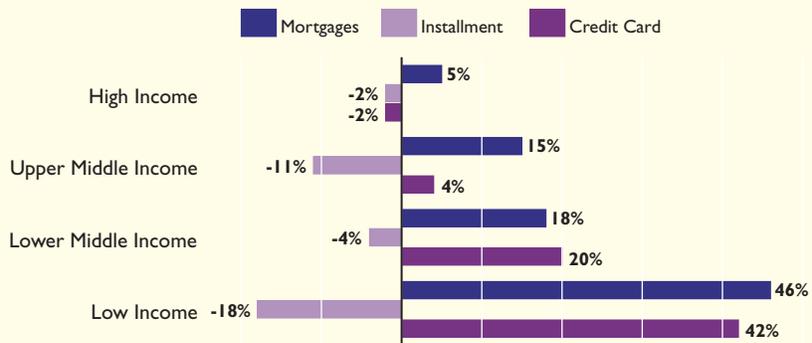
Far from being redlined by creditors, lower-income markets are now awash with credit, even growing at much faster rates than higher-income markets (Figure 1). The proportion of lower-income households that owed money to a creditor increased by 10 percent between 1989 and 2004 and now includes over half of all lower-income households. Along with the increase in the number of indebted households, the overall debt held by lower-income households increased from \$118 billion in 1989 to over \$481 billion in 2004—a 308 percent increase.

While the total debt held by lower-income families accounted for just 5 percent of the overall consumer debt held in 2004, it is among the fastest growing part of the market.³³ The proportion of families who are in debt in the highest income quartile has decreased slightly between 1989 and 2004, while only 3 percent more families in the third quartile have taken on debt during this time period. In fact, the only part of the market that has grown at a comparable rate of growth during this period is the second income quartile, which saw the proportion of families that owe money increase from 69 to 77 percent—a 12 percent increase. Together, this evi-

Figure 1a. Proportion of Households with Debt, by Household Income



Figure 1b. Rate of Increase in the Proportion of Borrowers Managing Debt, by Household Income and Trade Type (1989–2004)



Source: Authors' analysis of the 1989 and 2004 Survey of Consumer Finances

dence points to fact that the growth in the consumer credit market—at least as measured by the number of families that hold debt—has been in the bottom half of the income distribution in recent years.

What Are Lower-Income Families Buying With Credit?

By far the largest increases in lower-income debt occurred because of greater mortgage borrowing (Figure 2). The mortgage usage rate among lower-income borrowers grew by nearly 46 percent between 1989 and 2004, now

including about one out of every five lower-income households. Such large growth in mortgage borrowing among lower-income households reflects the impact of the legislation passed during the 1960s and 1970s, as well as the sweeping technological and market changes that occurred during the 1990s.³⁴ Together, these changes in the mortgage market substantially expanded access to homeownership among lower-income households over this time period.³⁵

While countless benefits have been afforded to both lower-income families

Figure 2. Growth in Borrowing Among Lower Income Consumers, by Trade Type (in billions, 2004 dollars)



Source: Authors' analysis of the 1989 and 2004 Survey of Consumer Finances

and neighborhoods as a result of this mortgage lending, there are at the same time growing concerns about whether homeownership is a smart investment for *all* lower-income households that qualify for a mortgage.³⁶ Lower-income households are relatively less likely to claim homeownership tax incentives, like the mortgage interest deduction and property tax deduction, making homeownership relatively more expensive for lower-income households.³⁷ Also, more than 4.2 million lower-income households are now paying a higher than average price for their mortgage, eroding their ability to diversify their investments.³⁸ When combined with the historically low returns households obtain from home ownership, the prospect of wealth from an investment in homeownership by a lower-income household is questionable, even if it is the dominant form of wealth today for lower-income households.³⁹

Likewise, lower-income households are increasingly relying on credit cards to supplement their incomes, conferring questionable long term benefits. Between 1989 and 2004, usage of credit cards by lower-income households increased from 18 percent to

over 32 percent, now amounting to about \$30 billion in total credit card debt held by lower-income households. While that is just 6 percent of all of the debt held by lower-income households, it is comparably much more than middle and higher-income households. Increasing reliance on credit card debt among lower-income consumers may point to their greater need to supplement their scarce earnings. But, any number of factors could be driving that higher demand, pointing to the need for additional research on this matter.⁴⁰ And, in any case, this credit card debt represents a very small share of overall debt.

Home equity credit is another form of revolving credit that lower-income households are increasingly relying on, although the overall share of lower-income households with this form of debt is quite small. While the overall proportion of lower-income households with home equity credit is small, the overall value of that debt is nearly as high as the amount owed on credit cards; or, about \$30 billion in both home equity credits and credit card debt.

In general, about half of the lower-income households with home equity credits are using that money for invest-

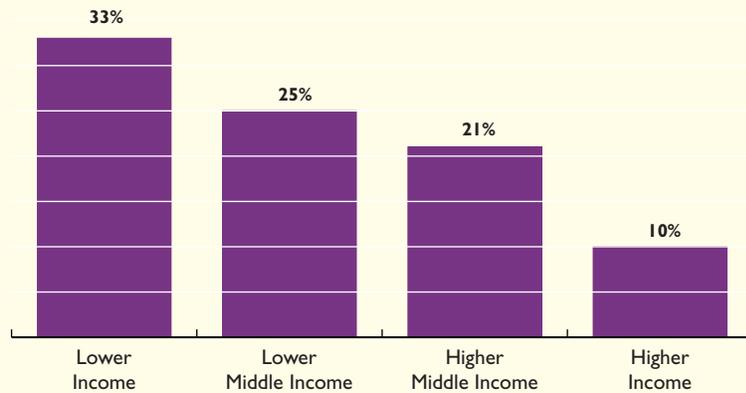
ments, another 42 percent are using that credit to buy consumer goods (e.g., clothing, jewelry) and pay bills, and the remaining 8 percent are buying vehicles.⁴¹ Compared to higher-income households, lower-income households are using a lower proportion of this money to make additional investments (e.g., education, small business loans, and home improvements). In fact, families in the highest income quartile—which represents the bulk of the home equity market—are using 60 percent of that money to make additional investments, pointing to their greater overall likelihood to have a diversified portfolio.

Finally, bucking this trend of growing credit usage among lower-income households, usage of installment debt actually fell between 1989 and 2004, likely replaced by their increasing usage of credit cards. While the overall value of installment debt did increase by 133 percent between 1989 and 2004, use among lower-income households fell by 18 percent during this period. About the same proportion of lower-income households use installment credit as used credit cards, but credit cards have clearly become preferable among lower-income households. This debt is both more flexible, and is renewable, or revolving, which makes credit card debt comparatively easier for lower-income households to access.

How Are Lower-Income Families Managing Credit?

Together, these data point to a broad credit expansion in lower-income markets, both in the number of lower-income borrowers and in the total debt held by these borrowers. That expansion created substantial benefits for both lower-income consumers and the businesses underwriting those loans. Still, while the vast majority of lower-income households are managing credit just fine, there is at the same time a large, relative share of lower-income borrowers who are struggling to manage their

Figure 3. Proportion of Borrowers Who Fall Behind on Payments, by Household Income



Source: Authors' analysis of the 2004 Survey of Consumer Finances

debt. This is indicated by at least two credit trends that set lower-income borrowers apart from other borrowers.

First, lower-income households are highly leveraged. In fact, about 27 percent of lower-income families are now paying more than 40 percent of their income on debt payments—a dramatically higher proportion of households compared to those with a higher income. In fact, among the second income quartile, 15 percent of families pay these high debt-to-income ratios; about 10 percent within the third quartile; and just 3 percent of the top income quartile. With such high debt service obligations, these 27 percent of lower-income borrowers face greater difficulty saving for additional investments and paying bills on time.

Second, lower-income borrowers are much more likely to fall behind on payments compared to higher-income borrowers (Figure 3). In fact, about one out of every three lower-income borrowers (33 percent) reported in 2004 that they have trouble making payments on time. In contrast, between 22 and 25 percent of borrowers in the second and third income quartiles, fell behind on payments; and just 10 percent of borrowers in the top income quartile fell behind on

credit payments in 2004.

The consequences of falling behind on payments can be particularly acute for lower-income families because of their smaller margin of error in their budgets. Late fees, higher interest rates, and universal default policies all mean that one late payment can add to up much higher overall debt levels, which is increasingly expensive to maintain.⁴² On top of that, missing payments lowers a consumer's credit score, which drives up the price of future credit and insurance, and may make it more difficult to qualify for a job or apartment, since an increasing number of employers and landlords are using this information to assess applicants.

B. Usage of credit in lower-income markets varies widely across the country, from a high in Boston (where 75 percent of borrowers in lower-income markets owed money in 2005) to a low in Las Vegas (where less than 40 percent did).

Credit usage in lower-income markets increases as the credit scores of borrowers improves, when divorce rates and the proportion of immigrants decreases, and when the proportion of

seniors increases. Total debt increases as the credit scores of borrowers in lower-income markets improves, when uninsured and the proportion of immigrants increases, and when mortgage lending policy becomes more stringent. The highest levels of indebtedness are also found in the most affordable areas of the country.

How Does Credit Usage Vary Between Lower-Income Markets?

Although both credit usage and the total debt held by lower-income consumers have surged in recent years, that national trend has played out very differently across metropolitan markets. Among the 50 major metropolitan areas included in this analysis (or, about 54 percent of the U.S. population), places like Boston, MA, Providence, RI, and Pittsburgh, PA fill out the top of the most indebted places in the country (Table 1). In each of these markets, over 60 percent of the borrowers of lower-income neighborhoods currently owe money to a creditor. Boston, MA is on the top of this list, where 75 percent of consumers in lower-income markets owe money to a creditor. On the other side of the distribution are places like Las Vegas, NV, Indianapolis, IN, Detroit, MI and Charlotte, NC, where less than 42 percent of consumers in lower-income markets owe money to a creditor.

Why Does Credit Usage Vary Between Lower-Income Markets?

Research examining why credit usage varies between different neighborhoods usually looks at variance within markets, and stresses either the impact of the credit quality of borrowers in those neighborhoods, or one or more of their social characteristics.⁴³ Theories related to the credit quality of borrowers are fairly straightforward: As the credit quality of borrowers'

Table 1. Highest and Lowest Credit Usage Rates and Debt Levels in Lower Income Markets

Metro Area	Credit Usage Rate
Boston-Cambridge-Quincy, MA-NH	74.49%
Pittsburgh, PA	67.34%
Providence-New Bedford-Fall River, RI-MA	62.90%
Detroit-Warren-Livonia, MI	40.76%
Charlotte-Gastonia-Concord, NC-SC	39.95%
Las Vegas-Paradise, NV	36.16%
Metro Area	Median Total Debt
Indianapolis, IN	\$16,330
Denver-Aurora, CO	\$15,963
Jacksonville, FL	\$15,963
San Jose-Sunnyvale-Santa Clara, CA	\$5,952
Milwaukee-Waukesha-West Allis, WI	\$5,837
New York-North NJ-Long Island, NY-NJ-PA	\$4,487
Metro Area	Median Total Non-mortgage Debt
Birmingham-Hoover, AL	\$9,087
Indianapolis, IN	\$8,483
Jacksonville, FL	\$8,418
San Jose-Sunnyvale-Santa Clara, CA	\$4,071
New York-North NJ-Long Island, NY-NJ-PA	\$3,559
Milwaukee-Waukesha-West Allis, WI	\$3,347

Source: Authors' analysis of data from TransUnion's Trend Data

increases, lending in those markets is thought to increase because more people qualify for credit.⁴⁴ On the other hand, predictions about the effect of social characteristics on borrowing behavior vary across each effect. Divorce rates, for one, may increase borrowing because a divorce forces *some* individuals to adjust to less income, which they may compensate for with more borrowing. Similarly, seniors may rely relatively more on credit because of a potentially greater difficulty they face paying for unexpected costs or bills on a fixed or limited income.⁴⁵

Other social characteristics of borrowers are more controversial. The proportion of non-white borrowers, for instance, is thought by some to trigger

redlining, or a denial of credit based exclusively on a borrower's race.⁴⁶ Along these same lines, non-citizen status may limit access to credit because of the paperwork requirements necessary to qualify for credit or because of social pressure to limit lending in some parts of these markets.⁴⁷ And, workers without health insurance may rely in greater relative numbers on credit to pay for unexpected health costs.⁴⁸

To this list of variables, we add the impact of public policy. In recent years, dozens of states have taken steps to limit the availability of some forms of mortgage credit in lower-income markets, and to control the terms that some of this credit is sold.⁴⁹ This regulation may have curbed the usage rates

of mortgages in lower-income markets. The exact opposite effect may have occurred because of a similar wave of state regulation designed to curb the availability or the price of alternative, high-priced credit, like payday and pawnshop loans.⁵⁰ As this regulation becomes more stringent, consumers may be driven in systematically higher numbers to other forms of credit, like revolving and installment trades. We consider the impact of both forms of public policy on credit usage in lower-income markets.

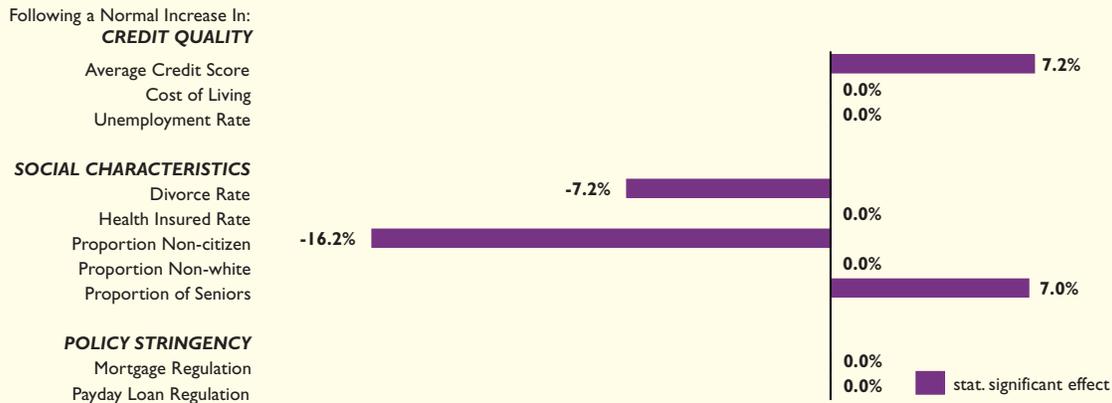
The Impact of Borrowers' Credit Quality

Differences in the overall credit quality of borrowers are strongly related with differences in the credit usage between lower-income markets (Figure 4).⁵¹ Where borrowers appear comparatively less risky candidates for loans, they tend to qualify for credit in greater numbers; and where they look more risky, they tend to use less credit.

Take two typical metro areas on either end of the distribution. Borrowers in Milwaukee's lower-income markets had the worst average credit score compared to any other in large metropolitan areas—556. From the perspective of a lender, then, the typical lower-income market in Milwaukee is a fairly risky place to lend compared to a lower-income market in metros like San Jose, Portland, and Tampa, where the typical borrower in a lower-income market had a credit score higher than 630. That is not a prime credit score, but it is fairly close to the national average (662), suggesting that the typical lower-income borrower in these metropolitan areas is just modestly more risky to lend to as the typical American household.⁵²

Other credit quality indicators do not have a significant effect on credit usage rates. Although unemployment rates have a significant correlation with credit usage, the significance of that effect does not hold-up after other influences are controlled for. Similarly, cost of living differences do

Figure 4. Predicted Change in Credit Usage in Lower Income Markets



Note: All available data in TransUnion’s Trend Data is based on depersonalized consumer credit reports; the dependent variable is the average proportion of borrowers living in a lower income neighborhood in a metropolitan area who are in debt; the estimated effects are based on first differences, or the effect on the dependent variable caused by moving a variable from a standard deviation below its mean to a standard deviation above its mean, while every other variable is held constant at its mean value. This is described in the figure as a normal increase in the independent variable.

Source: Authors’ analysis of data from TransUnion’s Trend Data, the U.S. Bureau of Labor Statistics, the U.S. Census Bureau, and individual state mortgage and payday loan regulations

not have a significant effect on credit usage rates. Even though the income of borrowers in New York covers fewer of the costs of living than that same amount of income in Topeka, for instance, they are not prone to borrow at higher rates. Still, nearly all of the differences in the credit quality of borrowers have a significant effect on other borrowing characteristics.⁵³

The Impact of Borrowers’ Social Characteristics

Besides the impact of borrowers’ credit quality on credit usage in lower-income markets, a number of social characteristics also have a significant influence on borrowing behavior. Of these, the citizenship status of borrowers in these markets is the most robust effect.⁵⁴ That is reflected in a comparison of demand between immigrant gateways like Miami and Los Angeles—where over 20 percent of residents in a typical lower-income neighborhood are non-citizens, and about 50 percent were indebted—and areas with very few non-citizens, like Pittsburgh—where far fewer of the

residents in a typical lower-income neighborhood are non-citizens and over 67 percent were indebted. This finding is consistent with evidence reported by one of the large credit bureaus that credit histories for non-citizens tend to be comparatively thinner than citizens, making them look relatively more risky as potential borrowers.⁵⁵ At the same time, recent immigrants may not be as familiar with the credit markets, driving down their overall demand relative to native born borrowers.⁵⁶ There has also been some hesitancy among lenders to pursue this market.⁵⁷

Borrowing also tends to increase in lower-income markets as its population ages. In particular, lower-income markets with higher relative proportions of seniors borrow in higher numbers than in lower-income markets that have borrowers who tend to be comparatively younger. For instance, lower-income markets like those in San Jose, CA and Austin, TX are full of very young consumers compared to places like Miami, Pittsburgh, and Tampa, where over 30 percent of

the lower-income population in a typical neighborhood is over 50 years old. As illustrated in Figure 4, that translates into systematically higher levels of overall borrowing in these “greyer” lower-income markets.

This relationship between age and borrowing propensity may seem surprising, given the fact that seniors are relatively more likely to have already paid off big ticket items, like mortgages and installment loans, compared to their younger peers, who are just starting to accumulate durable goods and houses.⁵⁸ But, *lower-income* seniors borrow more revolving credit than their younger peers, which drives these overall patterns.⁵⁹ That could reflect their higher relative difficulty financing costs of living on a fixed income; or it might reflect the relatively more time lower-income seniors have to shop for basic goods. Still other reasons driving this relationship may be that seniors qualify for more debt because of their greater, relative wealth, or because seniors tend to buy more expensive debt than their juniors. Recent research finds that

seniors tend to borrow at higher rates and pay more fees than younger borrowers with a comparable risk profile.⁶⁰ Those findings suggest a relatively higher tolerance for risk among seniors, which may lead them to also systematically utilize more credit, relative to their younger peers.

Divorce rates also have an effect on credit usage in lower-income markets, but in the opposite direction than expected. In particular, the proportion of indebted borrowers in a lower-income market is predicted to decrease by about 7 percent following an increase from one standard deviation below to one deviation above the mean of this variable, or an increase in the divorce rate from 11 percent to 15 percent. Such a relationship may reflect the fact that divorced adults may be less likely to qualify for credit, because of related credit problems or a shortage of income, but more research is needed to determine with more confidence the source of this relationship.

It's also interesting to note the characteristics that do not impact the differences we observe in overall credit usage across lower-income markets. The proportion of non-white borrowers in a lower-income market has no effect on aggregate demand, suggesting that race is generally not an important factor in getting access to credit once other differences between markets are accounted for. Differences in health insurance rates also have no effect in the overall usage of credit, although it does affect the amount borrowed, as we discuss in the next section.

The Impact of Public Policy

Although mortgages and other forms of credit are much easier to obtain in some markets compared to others, we find that the stringency of state credit regulation has no effect on borrowing behavior across different lower-income markets. This finding supports other recent research by Michael Stegman, Keith Ernst, & Wei Li that found mortgage lending regulations do not impact the supply of credit in state

markets, suggesting that states are effectively curbing the supply of credit products sold by bad actors in these markets, while not impacting the overall supply of credit.

How Does Total Borrowing in Lower-Income Markets Compare to Higher-Income Markets?

Consistent with the national findings reported in the first section of findings, just over 50 percent of borrowers in the lower-income markets in this study owed money to a creditor in 2005, compared to about 70 percent of borrowers in the middle two income quartiles, and over 80 percent in the highest income markets. Borrowing, in short, increases with neighborhood income.

Such differences in borrowing between neighborhood income categories reflect the impact of economic and borrower differences that systematically vary by household and neighborhood income. The impact of these variables is evident in a comparison of metro areas where there are both sharp and modest levels of relative indebtedness between the lowest and highest income neighborhoods. On one side of the distribution, Detroit and Milwaukee stand out for having substantially higher levels of borrowing in higher-income markets compared to their lower-income markets—in fact, there is over a 40 percentage point difference in the level of indebtedness between these two types of markets.

On the other side, Boston, Providence, and Pittsburgh stand out for having relatively more equitable levels of borrowing across neighborhood income categories, although wide differences remain. Consistent with regression results presented in this section, Detroit and Milwaukee's lower-income neighborhoods tend to have higher proportions of borrowers with weak credit scores, and unemployed workers. The impact is reflected by systematically lower, relative bor-

rowing in these areas' lower-income markets when compared to higher-income areas.

How Does the Median Debt Held by Borrowers Vary Between Lower-Income Markets?

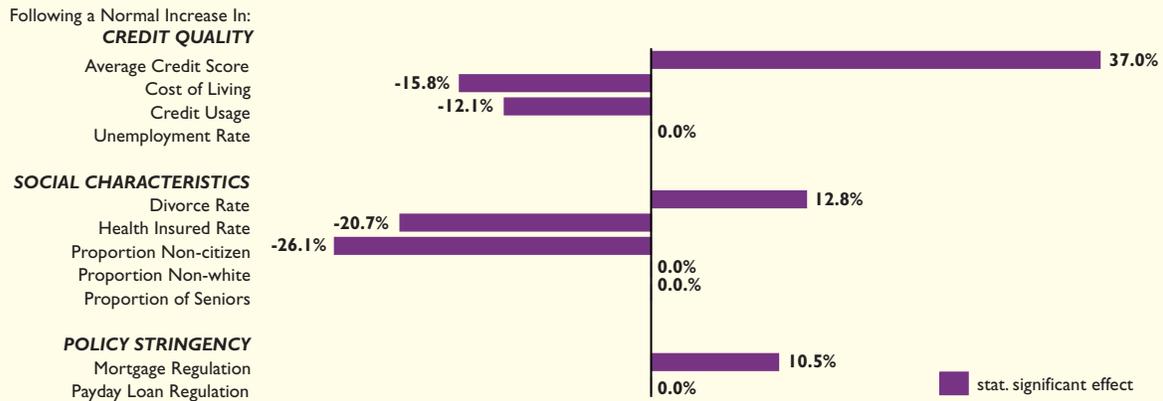
Usage of credit does not just vary by the proportion of people within a market that hold debt; it also varies by the typical total debt carried by lower-income borrowers across these markets.⁶¹ In fact, we find there are wide differences between markets in the amount of money that a typical borrower owes to creditors. Borrowers in the lower-income neighborhoods of New York and San Jose, for instance, had a median, total debt (mortgage, installment, and revolving) of less than \$6,000, and a median, non-mortgage debt of under \$4,100. In contrast, borrowers in lower-income markets in places like Jacksonville and Indianapolis had a median total debt over \$15,800 and a median, non-mortgage debt over \$8,400, pointing to much wider demand for houses, but also for other forms of credit-backed goods.

Why Does the Median Debt Held by Borrowers Vary Between Lower-Income Markets?

The Impact of Borrowers' Credit Quality

The credit quality of borrowers in lower-income markets is the most important explanation for why borrowers in some lower-income markets borrow much more money compared to others (Figure 5). In fact, for every 20 point increase in the average credit score of borrowers in lower-income markets, the amount owed by the typical borrower increases by over \$1,700, all else held equal. That points to the strong impact that credit-building campaigns can potentially have on the amount of money lent within lower-

Figure 5. Predicted Change in the Amount of Median Borrower Debt in Lower Income Markets



Note: All available data in TransUnion's Trend Data is based on depersonalized consumer credit reports; the dependent variable is the average total debt held by indebted borrowers living in a lower income neighborhood in a metropolitan area; the estimated effects are based on first differences, or the effect on the dependent variable caused by moving a variable from a standard deviation below its mean to a standard deviation above its mean, while every other variable is held constant at its mean value. This is described in the figure as a normal increase in the independent variable.

Source: Authors' analysis of data from TransUnion's Trend Data, the U.S. Bureau of Labor Statistics, the U.S. Census Bureau, and individual state mortgage and payday loan regulations

income markets. Even marginal increases in the average credit profile of borrowers can cause large increases in the amount of money borrowed. It also helps explain why the amount of debt extended in lower-income markets can vary so widely across the country.

Differences in the costs of living across areas are a second major influence on the amount of debt held by the typical borrower. Where there are higher costs of living, borrowers in lower-income markets tend to borrow less compared to borrowers living in more affordable areas of the country. This is an important indication of how markets, not just the behavior or characteristics of borrowers, can regulate borrowing behavior. Places that are cheaper to live also afford more opportunities for people to borrow, because goods and services are more affordable, and because borrowers in these areas likely have more disposable income to spend on down-payments for credit-backed goods.

Variable housing affordability is one sign of how this is so. Houses in relatively low-cost areas like Jacksonville and Indianapolis, for instance, are

much more affordable than in expensive places like New York and San Jose, leading to sharp differences in homeownership rates. That is reflected by the systematically higher median debt held by borrowers from lower-income neighborhoods in low cost places like Jacksonville and Indianapolis compared to their higher cost peers.

But, it is not just mortgage debt that drives up the amount of debt held in more affordable areas of the country: median, non-mortgage debt is also higher in these low cost areas. What does cost of living have to do with those differences? For one, greater home buying rates in the lower cost areas of the country also likely produces higher relative demand for installment loans to buy appliances—costs that are less likely to be directly incurred by renters.⁶² Similarly, savings for down-payments to buy other credit-backed goods—like cars, consumer electronics, and furniture—are easier to accumulate when costs of living are low. This suggests that market differences can be nearly as an important influence on credit behavior as the decisions made by borrowers and lenders.

Credit usage rates are a third significant influence on the median total debt held by a borrower in a lower-income market, but in the opposite direction than one might expect. In particular, for every 5 percentage point increase in the proportion of borrowers in a lower-income market that owe money, the typical debt held by a borrower in that market is expected to decrease by about \$700. That relationship exists because revolving credit tends to be the entry level credit product in lower-income markets, and those trade lines tend to carry lower, average balances than alternatives, like mortgage and installment credit. Where there is higher credit usage, then, there also tends to be a higher reliance on revolving credit, which drives down the median amount of debt held.⁶³

The Impact of Borrowers' Social Characteristics

Social characteristics of borrowers are another robust set of indicators that impact the amount of money typically borrowed in lower-income areas. Of these, the most robust influence is the

citizenship status of borrowers. Where there tend to be higher shares of non-citizens, there also tends to be lower levels of total debt held by borrowers. This is consistent with the impact on credit usage, where we found less overall borrowing among borrowers in areas with larger, relative shares of non-citizens. Like credit usage, the total value of debt held by the median borrower could be lower in these areas because you may have larger shares of borrowers who are building up a credit history with the use of low value credit, like credit or retail cards, and smaller, relative shares of borrowers with enough of a credit history to qualify for larger credit lines.

Health insurance coverage is a second significant influence on borrowing levels. In particular, where there are high proportions of people with health coverage — like in Los Angeles and Miami—the value of debt held by the typical borrower in a lower-income market tends to be higher. This is consistent with expectations that uninsured borrowers should be relying more on revolving and installment credit to pay health bills than insured borrowers.⁶⁴

Median debt in lower-income markets is also higher where the divorce rate is comparatively high. Divorce has long been recognized as a source of financial insecurity.⁶⁵ So, too, we find that as an area's divorce rate increases, the median debt in a lower-income market tends to increase. This may reflect a greater share of people adjusting to less income following a divorce, which they may compensate for with more borrowing. But, the cause and effect relationship here is less clear in other cases, because it may be this higher debt that leads to higher rates of divorce, a matter for additional research.

The Impact of Public Policy

Public policy stringency also has an effect on the total debt held by borrowers in lower-income markets. In particular, states with stricter mort-

gage lending laws in place in 2005—states like Georgia, North Carolina, and Massachusetts—tend to also have higher, median debt in lower-income markets compared to states with less stringent regulations—states like California, Nevada, and Oklahoma. As we pointed out in the last section, this does not signal that there is more credit usage in these states with stricter rules in place. But, it might point to the fact that there is less usage of high-value credit in some of the more risky areas of lower-income markets in these states with stricter rules, compared to those states with less stringent regulations. This may pull up the median amount of debt, since the more risky areas of the mortgage market tend to be for comparatively lower-priced homes.

Is Less Money Borrowed in Lower-Income Markets Compared to Higher-Income Markets?

Consistent with expectations, the median debt held in lower-income markets is substantially lower compared to those with a higher, median income. Across the 50 metro areas, the median borrower in the highest income markets held over five times the amount of debt as that held by the median borrower in a lower-income market. But, there is quite a bit of variance across the markets in that ratio. Metro areas like Chicago and Seattle had the sharpest differences in the median debt held in different neighborhood income categories; in fact, the typical borrower in these area's higher-income neighborhoods holds more than 10 times the total debt held by borrowers in the lower-income neighborhoods. In contrast, areas like Buffalo and Rochester show much smaller differences in the total debt held by the median borrower in different neighborhood income categories, though there are still large differences. The typical borrowers in the higher-income neighborhoods of

these areas owe about three times the amount of money as the typical borrower in lower-income neighborhoods.

Those areas with sharper differences in the amount of money owed by borrowers in different neighborhood income categories also tend to have higher, relative shares of borrowers in lower-income markets with low credit scores and lower, overall credit usage rates. Places like Chicago and Seattle are also more expensive to live in than places like Rochester and Buffalo, which leads to relatively less high-value mortgage and installment borrowing in these expensive areas.

C. Management of credit in lower-income markets also varies widely across the country, from a low in San Jose, where less than 5 percent of borrowers in lower-income markets are behind on debt payments, to a high in Memphis, where over 18 percent are delinquent on at least one bill.

Delinquency rates in lower-income markets increase as unemployment rates increase and when the proportion of people without health insurance increases. Surprisingly, delinquency rates also increase when costs of living drop; in fact, the highest delinquency rates in lower-income markets are in the least expensive areas in the country.

While the extension of credit in lower-income markets has provided a windfall of benefits to consumers and their underwriters, that lending has also come with costs, highlighted most clearly by the high delinquency rates among lower-income borrowers reviewed earlier. That more than a third of lower-income borrowers reported in the 2004 Survey of Consumer Finances that they have trouble paying bills on time points to the difficulty lower-income borrowers have managing debt.⁶⁶ Such difficulty can quickly set off a chain reaction that propels borrowers into serious financial problems. Policies like universal default, for instance, trigger rate

increases on credit cards that have this policy after a payment is missed on a single card. Similarly, a missed bill on any line of credit will be reported to the credit bureaus, which will lower their credit scores. In turn, the price of future credit and loans will rise, along with the price of insurance in some states. Lower credit scores also may affect a borrower's ability to get a job and lease an apartment, since a growing number of employers and landlords are using credit histories to screen applicants.

How Do Delinquency Rates Vary Between Lower-Income Markets?

This national trend plays out very differently in lower-income markets across the country (Table 2).⁶⁷ Overall delinquency rates, or the overall proportion of borrowers in a lower-income market that are at least 60 days behind on one credit-bearing account, ranges from a low in San Jose, where less than 5 percent of borrowers in lower-income markets were behind on debt payments in 2005, to a high in Memphis, where over 18 percent were delinquent on at least one bill. More troubling, however, is that an average of 7 percent of borrowers in lower-income markets were behind on their mortgage payments in 2005. And, in places like Philadelphia, Cincinnati, Charlotte, Cleveland, Detroit, and Memphis, over 1 in 10 borrowers in the typical lower-income neighborhood are behind on their mortgage payments. Clearly, despite falling unemployment and a growing economy, the housing market is not working for the many families having trouble making these payments on time.⁶⁸

For policymakers and other leaders to be able to respond to such high delinquency rates, though, they will need to understand why so many borrowers in lower-income markets are falling behind on payments, while others seem to be doing just fine. The answer is unfortunately not simple.

Table 2. Highest and Lowest Delinquency Rates in Lower Income Markets

Metro Area	Overall Delinquency Rate
Memphis, TN-MS-AR	18.11%
Riverside-San Bernardino-Ontario, CA	14.98%
Charlotte-Gastonia-Concord, NC-SC	14.37%
Portland-Vancouver-Beaverton, OR-WA	6.71%
Seattle-Tacoma-Bellevue, WA	6.59%
San Jose-Sunnyvale-Santa Clara, CA	4.42%
Metro Area	Mortgage Delinquency Rate
Memphis, TN-MS-AR	16.79%
Detroit-Warren-Livonia, MI	13.00%
Cleveland-Elyria-Mentor, OH	12.27%
Los Angeles-Long Beach-Santa Ana, CA	2.77%
San Diego-Carlsbad-San Marcos, CA	2.10%
San Jose-Sunnyvale-Santa Clara, CA	0.93%
Metro Area	Credit Card Delinquency Rate
Memphis, TN-MS-AR	7.17%
Richmond, VA	6.17%
Virginia Beach-Norfolk-Newport News, VA-NC	6.14%
Salt Lake City, UT	3.34%
Tampa-St. Petersburg-Clearwater, FL	3.34%
San Jose-Sunnyvale-Santa Clara, CA	1.48%

Source: Authors' analysis of data from TransUnion's Trend Data

Why Do Delinquency Rates Vary Between Lower-Income Markets?

Like the research on credit usage, literature that has looked at the causes of delinquency rates tends to emphasize the credit quality and social characteristics of borrowers. Credit quality is most clearly measured by credit scores: Where scores are lower, the probability of delinquency is predicted to be higher. But, because credit scores are partially a function of delinquency rates it would be inappropriate to model scores as an independent effect.⁶⁹ Instead, we measure credit quality as three different types of effects, including the median debt held in lower income markets, the unemployment rate, and

the costs of living. Debt service payments likely rise with debt totals in lower-income markets, which may make it increasingly difficult for borrowers with low-incomes to meet payments on time; rising unemployment rates may signal a growing number of borrowers with extant credit that they can no longer afford; and higher, relative costs of living may mean that a low-income goes less far in covering debt service payments, increasing the likelihood of delinquency.⁷⁰

Borrowers' social characteristics may affect delinquency rates in different ways. Divorce rates, for one, may lead or lag higher delinquency rates because of evidence that financial problems are one of the leading causes

Figure 6. Predicted Change in the Delinquency Rate in Lower Income Markets



Note: All available data in TransUnion's Trend Data is based on depersonalized consumer credit reports; the dependent variable is the average proportion of all borrowers living in a lower income neighborhood in a metropolitan area who are 60 or more days behind on a bill; the estimated effects are based on first differences, or the effect on the dependent variable caused by moving a variable from a standard deviation below its mean to a standard deviation above its mean, while every other variable is held constant at its mean value. This is described in the figure as a normal increase in the independent variable.

Source: Authors' analysis of data from TransUnion's Trend Data, the U.S. Bureau of Labor Statistics, the U.S. Census Bureau, and individual state mortgage and payday loan regulations

of divorces.⁷¹ The proportion of non-whites in a lower-income market may cause delinquency rates to increase because of evidence that non-whites are much more likely, as a group, to buy higher-priced credit products, which may make it relatively more difficult to meet debt service obligations on time.⁷² Seniors have been found to have relatively more difficulty managing credit, presumably because their fixed incomes may not be able to keep up with rising rates. And, delinquency rates may also increase in a market as the proportion of people without health insurance increases, since paying the high costs of healthcare out of pocket may drive a greater share of borrowers to miss bill payments.

We also consider the impact of public policy, since much of the recent regulation governing credit in the states has strived to reduce unscrupulous lending, which may cut down on the number of loans made to borrowers who have trouble managing debt payments.

The Impact of Borrowers' Credit Quality

One of the most robust influences on delinquency rates in lower markets is the unemployment rate (Figure 6). As the proportion of unemployed adults increases, delinquency rates likewise increase. In particular, for every 5 percentage point increase in the unemployment rate, the delinquency rate in a lower-income market is predicted to increase by over 25 percent. The link likely has an obvious explanation: When unemployment increases money for bills becomes scarcer, driving up the delinquency rate. That is why borrowers in lower-income markets with higher, relative unemployment—like in Cleveland, Memphis, and Riverside—had delinquency rates that are twice as high as those found in lower-income markets with a higher share of employed workers—places like San Francisco, Salt Lake City, and San Jose.

Contrary to our expectations, rising costs of living are associated with drops in delinquency rates in a lower-income market. Relatively cheaper places to live—like Houston, Char-

lotte, and Memphis—had much higher delinquency rates in their lower-income markets compared to more expensive places to live—like New York and San Francisco. At first blush, this is somewhat surprising, as a lower income goes much farther to being able to cover the costs of necessities in more affordable locales, seemingly suggesting that financial security should increase as cost of living decreases. But, it is exactly in these less expensive markets where there is a greater capacity to buy assets like cars and houses, both of which come with expensive credit and monthly payments. The result is that borrowers in these cheaper areas of the country are more exposed to risk than in areas like New York and San Francisco, which accordingly drives up their propensity to fall behind on payments.

This reinforces the point made in the previous section that the behavior of borrowers in lower-income markets can be influenced by the market itself. The market itself can regulate credit behavior, just as the decisions of borrowers and lenders do. Given these findings, it would be worthwhile to

consider how these market forces themselves might also be a predictor of credit quality, rather than just the borrowers themselves. Along those same lines, evidence of these market effects raises the possibility that credit scores, and predictions about risk more generally, might be more appropriately conditioned to reflect these market differences; so, in other words, Detroit might have a different score model than say exists in New York.

The other credit quality indicator does not have a significant effect on delinquency rates in lower-income markets. While median total debt is correlated with delinquency rates, the effect disappears once others are factored into the model

The Impact of Borrowers' Social Characteristics

Health insurance coverage is the only social characteristic of borrowers that is significantly associated with changes in delinquency rates. In particular, areas with high relative proportions of people with health insurance tend to have lower delinquency rates compared to areas with low, relative proportions of people with health insurance. Such a relationship confers with our expectations: paying the high costs of healthcare out of pocket likely leads to higher shares of borrowers who fall behind on payments.⁷³

The Impact of Public Policy

Although the regulation of credit markets is often designed to reduce potentially unscrupulous or harmful practices in this industry, we do not find that lower-income markets with more stringent regulation have a significantly different delinquency rate compared to markets with less stringent regulation. That could be the result of a number of factors. For one, policy may not have an impact, although recent evidence suggests otherwise.⁷⁴ More likely, this finding may indicate a lack of sufficient data to properly assess this impact. Some states may have passed comparatively

more strict regulations because they were trying to counteract unusually high delinquency rates. In this case, progress made toward that goal would turn up in this model as a non-significant effect because such states may now have similar rates as those states without those stringent regulations.

Do Borrowers in Lower-Income Markets Fall Behind on Payments More Often Than Those In Higher-Income Areas?

Across the 50 metros, the average delinquency rate in a lower-income market is more than twice as high as the delinquency rate in higher-income markets. But, that ratio varies sharply across the metro areas. Borrowers in the lower-income markets in Tampa, Salt Lake City, Austin, and San Jose, for instance, had higher delinquency rates than those in the higher-income neighborhoods of these metros, but the rates are only about two percentage points higher. In contrast, borrowers in the lower-income markets in Richmond, Memphis, and Cleveland were nearly three times as likely to be behind on a bill as borrowers in the higher-income neighborhoods of these areas. As we would expect, given the regression findings, borrowers in this later group of metro areas are also living in relatively less expensive places, with higher unemployment rates. Combined, these systematic differences between borrowers in places like Richmond, Memphis, and Cleveland lead to higher relative delinquency rates compared to borrowers in other places of the country considered in this analysis.

D. Based on an evaluation of credit scores, potential growth in the supply of credit in lower-income markets is also widely variable across the country, from a low in Memphis and Milwaukee, where the average credit score in lower-income markets was 556 in 2005, to a high in Portland and San Jose, where the average score was over 635.

Credit score profiles improve in lower-income markets because of increases in credit usage, decreases in delinquency and unemployment rates, and decreases in the proportion of non-white borrowers.

Credit scores are used by lenders to determine if a borrower qualifies for a loan and, if so, the price that they should be charged for that loan. In this way, credit scores directly affect the access borrowers have to credit-backed assets like houses, educations, and loans, along with durable assets, like cars and appliances. More indirectly, scores may influence the capacity borrowers have to save for additional assets by influencing the price of loans and insurance. Together, these effects make scores a useful tool to assess the potential of borrowers to qualify for additional credit, even if they are not the only criteria used by lenders to make an origination decision. Added up within a market, then, aggregated information in lower-income markets can also say something about the relative ability of different areas to qualify for additional credit.

Still, there is no common metric for assessing how degrees of risk correspond with credit score values, leading to a wide degree of discretion among lenders of credit to determine the cut-off points for access to credit and pricing. In fact, there is variance across companies, types of applications, and different credit score products. For instance, the VantageScoreSM credit score product has a different range than say the FICO score, which means that a value of



660 on each scale will mean something different. Some also have a linear model, while others use a logarithmic scale, affecting the interpretation of changes in scores for a given model.

This analysis relies on the TransUnion's TransRisk Account Management Score 2.0, which ranges from 350 to 850. Across the country, the average credit score was about 662 in 2005. The FICO score also has a range between 350 and 850, and 662 is about the point that is commonly cited as a cut-off point between prime, or low-cost, mortgages and subprime, or high-cost, mortgages.⁷⁵ Near-prime has a cut-off of around 640.

How Do Credit Scores Vary Between Lower-Income Markets?

Like the other credit data reviewed in this paper, the credit scores of borrowers in lower-income markets widely varies. The lowest average credit scores in lower-income markets are in places like Memphis and Milwaukee, where the average credit score was less than 560 (Table 3). That compares to lower-income markets in places like Tampa, Portland, and San Jose, where the average credit score among borrowers was greater than 630. That is still below the national average, but it is fairly close, suggesting that lending in the lower-income markets located in this later group of metro areas is only modestly more risky than lending to the typical borrower in the country.

Why Do Credit Scores Vary Between Lower-Income Markets?

We're not aware of any literature that has looked at why credit scores vary across income groups or markets.⁷⁶ Still, we know that an individual credit score is a function of the credit quality of a borrower, so we can reasonably assume that the overall credit quality of borrowers in a lower-income market

Table 3. Highest and Lowest Average Credit Scores in Lower Income Markets

Metro Area	Average Credit Score
San Jose-Sunnyvale-Santa Clara, CA	664
Portland-Vancouver-Beaverton, OR-WA	637
Tampa-St. Petersburg-Clearwater, FL	634
Chicago-Naperville-Joliet, IL-IN-WI	562
Memphis, TN-MS-AR	556
Milwaukee-Waukesha-West Allis, WI	556

Source: Authors' analysis of data from TransUnion's Trend Data

also affects the average credit score in those markets. We measure this in several different ways. First, we expect that the average credit score will decrease in a lower-income market as delinquency rates increase. Second, we expect that credit scores will improve as credit usage increases. Since the number of open accounts can improve an individual's credit score, the proportion of borrowers that owe money may affect aggregated estimates of average scores in a market. Third, we expect that rising unemployment rates reduces average credit scores in a lower-income market because credit utilization—or the balance to credit line ratio—could increase in place of wages—another variable accounted for in credit score models. Finally, we consider the impact of costs of living on credit scores, since borrowers in more affordable areas of the country may utilize more trade lines, another effect considered in credit score models.⁷⁷

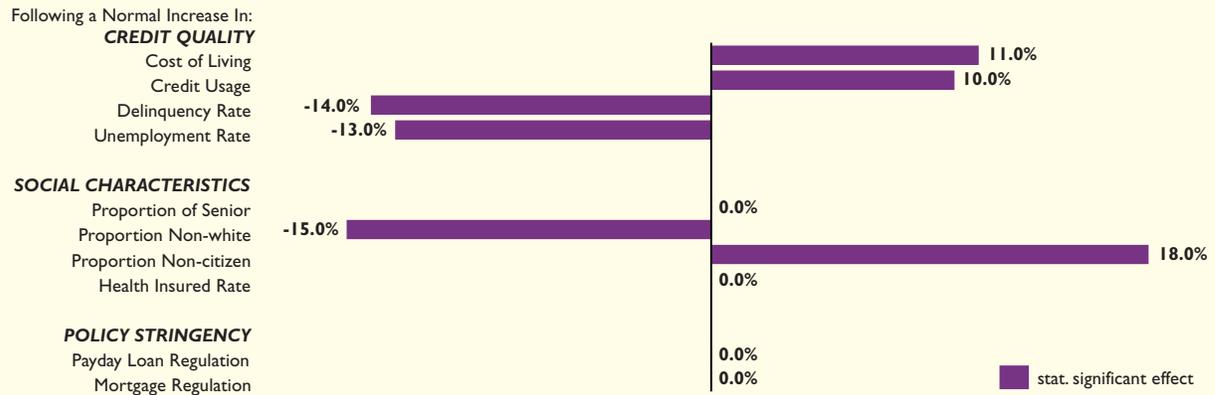
Borrowers' social characteristics and state public policy may also be associated with changes in credit scores in a market.⁷⁸ None of these variables are accounted for in credit scores models, but they might exercise indirect effects on credit scores by serving as proxies for variables that do directly impact credit scores. First, we consider the impact of the proportion of non-whites in a lower-income market on the average credit score in that market, since

historical inequities in education, income, and opportunities may be reflected by higher credit utilization rates (i.e., balance to credit limit ratios), a smaller trade line range, and a shorter credit history—all variables that we cannot account for in a model of market trends. We also expect that average credit scores will decrease in lower-income markets as the proportion of seniors in those markets increases, because they may have fewer credit lines open (having already paid off mortgage and installment trades) and may have higher utilization rates, given that unexpected costs may be more difficult to pay for on fixed incomes. Non-citizens also may have shorter credit histories, pulling down the average credit score in lower-income markets as their share of a total population increases. And, health insurance coverage may be negatively associated with average credit scores, since paying for these costs out of pocket might lead to higher utilization rates, which we cannot measure directly in this aggregated market analysis.

We also consider the impact of public policy, since policy is designed to improve the functioning of credit markets, which may be reflected by an improvement in the credit quality of borrowers.

Finally, it is important to point out again that *none of these variables are used in the actual calculation of credit*

Figure 7. Predicted Change in the Average Credit Score in Lower Income Markets



Note: All available data in TransUnion's Trend Data is based on depersonalized consumer credit reports; the dependent variable is the average credit score of all borrowers living in a lower income neighborhood in a metropolitan area; the estimated effects are based on first differences, or the effect on the dependent variable caused by moving a variable from a standard deviation below its mean to a standard deviation above its mean, while every other variable is held constant at its mean value. This is described in the figure as a normal increase in the independent variable.

Source: Authors' analysis of data from TransUnion's Trend Data, the U.S. Bureau of Labor Statistics, the U.S. Census Bureau, and individual state mortgage and payday loan regulations

scores, since credit scores are calculated for individuals, not markets. But, they do say something interesting about why average risks in lower-income markets vary across the country, albeit often indirectly.

The Impact of Borrowers' Credit Quality

Credit usage in a lower-income market is one robust predictor of the average credit scores in a market (Figure 7). In fact, for every 5 percentage point increase in the proportion of borrowers in a lower-income market that owes money, the average credit score is predicted to also increase by about 4 points. Critical to this relationship, though, is the type of increases in credit usage that occur in lower-income markets. On the one hand, credit cards turn out to be an excellent, low cost way for borrowers in lower-income markets to build-up credit histories, indicated in the TransUnion Trend Data by the relatively low proportion of bankcard borrowers who are behind on their payments. On the other hand, a much higher share of mortgage and installment trades are

delinquent, indicating their higher, relative risk for borrowers in lower-income markets. Because credit cards are a more ubiquitous form of credit in lower-income markets, this relationship between usage and credit scores is likely driven by the underlying type of trades being used.

Delinquency rates are another robust predictor of credit scores in a lower-income market. Where these rates are high, lower-income markets tend to have comparatively lower credit scores. Lower-income markets in metro areas like Riverside, Charlotte, and Memphis had average delinquency rates above 14 percent, indicating that about 1 out of every 7 borrowers in the average lower-income neighborhood in these areas was behind on a payment in 2005. This is reflected by the fact the average credit score in these lower-income markets was less than 580. On the other hand, less than 7.5 percent of borrowers in the lower-income markets located in places like San Jose, Portland, and San Francisco were behind on payments in 2005, reflected by the fact that the average credit score in these areas was over 630.

Costs of living also affect the average credit score in lower-income markets. Expensive areas like San Francisco and New York have much higher average credit scores than in more affordable areas like Houston, Oklahoma City, and Memphis. Like the unemployment effect we observe, the costs of living effect is likely serving as a proxy for variables accounted for in credit scores which co-vary with scores, but cannot be accounted for in aggregated market data. Of these, probably the most obvious is the range of trade lines that a borrower has open, which likely increases as costs of living becomes more affordable.

Finally, increases in the unemployment rate are significantly associated with decreases in the average credit score. Like the other independent variables in this model, we expect this relationship reflects the indirect effect of unemployment rates on variables that are included in credit score models, such as credit utilization. Where unemployment rates are high, we expect a borrowers in lower income borrowers have higher, comparable credit utilization rates.

The Impact of Borrowers' Social Characteristics

Average credit scores in lower-income markets are predicted to decrease as the proportion of nonwhite borrowers increases in those markets. Although this, or any related variable, is not included in credit scores models, this effect may be serving as a proxy for variables that are considered in models, which we cannot account for directly. We suspect in this case that the relationship between the proportion of nonwhite borrowers and average credit may reflect historical inequities in education, income, and opportunities, which may lead to higher credit utilization rates (i.e., balance to credit limit ratios), a smaller trade line range, and a shorter credit history. Future research with a fuller set of variables considered in credit score models will want to reconsider these findings.

The proportion of noncitizens in lower income markets is the other social characteristic that is associated with changes in average credit scores. In particular, areas with high, relative shares of non-citizens – places like Miami and Los Angeles – tend to have better, average credit scores than in places where there are lower, average shares of non-citizens in lower-income markets. This is opposite to what we expected. But, it does make sense in light of another finding in this paper related to non-citizens and credit performance: areas with high, relative shares of non-citizens tend to have lower median total debt holdings. Here, those findings may be reflected by the fact that non-citizens are more likely to have a lower utilization rate, which is not an effect we can directly account for. Like the finding related to the race of borrowers, future work will want to re-examine this finding with a fuller set of controls. Even so, both effects have strong underlying correlations with the dependent variable.

The Impact of Public Policy

Stringency of state credit regulation also has no discernable impact on the average scores in lower-income markets once the effects of other variables are considered. Ideally, we would have been able to also measure the impact of policy specifically devoted toward improving financial skills—like state investments in financial education—but no data were available at the time of publication. Future analyses will want to consider this impact, where possible.

Do Borrowers in Lower-Income Markets Have Lower Credit Scores Compared to Those in Higher-Income Areas?

Credit scores are systematically lower in lower-income markets compared to higher-income markets in every metropolitan area in this analysis. But, the degree of difference widely varies across the country. Lower-income neighborhoods in places like San Jose, Riverside, and Tampa have lower average credit scores compared to the higher-income neighborhoods, but the average scores only differ by about 50 points. That disparity can mean the difference between a prime or subprime mortgage, but it is certainly not as significant a difference as found in places like Philadelphia, Cleveland, Milwaukee, Detroit and Hartford. In each of these markets, the average credit score in lower-income neighborhoods is over 140 points lower than the average score in higher-income neighborhoods. In fact, in each of these places, the average credit score in lower-income neighborhoods is less than 580, which is well below the typical minimum score for a prime rate on the FICO score—660. This means that the typical borrower in a lower-income neighborhood in these rust belt markets stands a much higher probability of paying high prices for credit, compared to the typical borrower in the higher-income

neighborhoods of these markets. Such sharp differences across lower-income markets have to do with the systematic differences in the borrowers and economies noted earlier. These Rust Belt lower-income markets have higher relative unemployment rates, lower existing credit usage, and lower costs of living, making the typical borrower in these lower-income neighborhoods looks comparatively more risky compared to places like San Jose, Riverside, and Tampa.

Discussion and Recommendations

Where lower-income markets were once eschewed by lenders, they are now awash in capital, from mortgage lending to short term loans. Among the signs that point to this new lower income market reality, this paper finds that the proportion of indebted, lower-income households increased by 10 percent between 1989 and 2004, while overall debt increased by 308 percent in value during that same period. And, that estimate is likely conservative because it does not include the effect of non-bank lending targeted at lower and moderate income borrowers—like payday and pawnshop lending.

While increased lending expanded the spending power and asset ownership in lower-income markets, over one-third of lower-income borrowers now struggle to manage debt. Similarly, over one-fourth of lower-income borrowers now devote at least \$4 out of every \$10 earned for debt payments, pointing to the highly leveraged position of a wide number of lower-income borrowers.

Lower-income households are faced with that relatively heavy debt burden mostly because of increased borrowing for mortgages, and installment trades tied to homeownership, like loans for furniture and appliances. In fact, homeownership-related debt accounts for about \$7 out of every \$10 owed by lower-income families, and is the

fastest growing type of debt held by lower-income families.

Other trades, particularly credit cards, represent a very small share of the overall debt held by lower-income families. In fact, this paper finds that credit card debt represents just 6 percent of all debt held by lower-income households. While that is a higher proportion of credit card debt to all debt than exists at higher-income brackets, home equity borrowing among lower-income households—a source of debt widely used for purposes similar to credit cards—represents a much lower share of debt owed by lower-income households compared to all other households.⁷⁹

To meaningfully bring down the amount of debt owed by lower-income households, the unusually high debt service payments they are now burdened with, and the extremely high delinquency rates in some of these markets, policymakers will thus have to put an emphasis on homeownership-related debt—a type of debt that is heavily promoted by government policies.⁸⁰ To be sure, this goal of expanding homeownership in lower-income markets should be re-examined, and not just because of evidence that debt has become such a dominating, and too often unsustainable, share of household expenditures among lower-income consumers.⁸¹ Evidence cited earlier also suggests that homeownership may not be a wise decision for every person that qualifies for credit, which suggests a more measured, even cautious, approach to homeownership-boosting initiatives than often exists. Mortgages do substitute for rent, but transaction costs, short holding periods, market downturns, home upkeep costs (i.e., repairing and replacing appliances) and interest-only and other exotic mortgages all can make homeownership a more expensive form of renting. Because lower-income households have so little to invest to begin with, it's incumbent that policymakers, foundations, and nonprofit groups

choose very carefully and deliberately which assets to promote to individual families, rather than promote open-ended access to all assets. Certainly, part of these deliberations should acknowledge all of the non-financial benefits that can also be derived from owning a home.

Still, much more research is needed on this issue before there is any type of major course correction that can be responsibly recommended, including a redistribution of the more than \$116 billion the United States annually spends promoting homeownership.⁸² More years of data, more panels of homeowners, more types of countervailing forces, more market varieties, still need to be assessed. There are also a host of positive externalities tied to homeownership that policymakers will need to take into account.

At the same, evidence in this paper suggests that the experience of lower-income borrowers widely varies across the country. Borrowers in New York, for instance, face extremely low relative debt and delinquency rates, and high credit scores; whereas borrowers in places like Miami, San Antonio, and Cleveland all face serious challenges related to the explosion in lending, from unusually high delinquency rates to unusually low credit scores. *Policy responses must take care in the promulgation of any credit-related recommendations to place a priority on markets with apparent problems, while guarding against action that disrupts markets without serious problems.*

Among these, there are several very practical, potent steps that the federal government can take to bring down the debt burden faced by lower-income borrowers, many of which bring with them positive externalities of their own for the economy in general. First, the federal government needs to invest in initiatives that address the problems on the demand side for credit in lower-income market because of the ample evidence that now points to broadly under-informed consumers, which may be driving demand past a sustainable

point on many lines of credit. Next, the government needs to address evidence of the bad apples among creditors—particularly mortgage brokers—that take advantage of information asymmetries to charge unreasonably high prices, hurting both borrowers (because they do not understand all of the credit products) and underwriters (who are sold loans by brokers unconcerned with their sustainability). Finally, it's clear that the federal government needs to support a robust, wide ranging research agenda that more fully tracks and assesses credit growth in lower-income markets, including the marketing and pricing practices in the industry that may inflate debt in lower-income markets beyond what is responsible for both investors and homeowners. Each of these recommendations is outlined in more detail below.

Invest in Financial Education and Responsibility

Sorting through the literature on credit and lower-income borrowing, it's hard to miss the large volume of recommendations for financial education. Perhaps as a result of that, nearly every state over the past five years has considered legislation to expand financial education investments. Likewise, the federal government now has dozens of initiatives designed to boost financial education, and countless financial service companies now have similar services available. At the same time, financial advisor personalities are now constant fixtures on cable channels, in newspapers, and the internet; and countless web pages, like those at beehive.org, fill the Internet up with sage financial advice. Why would we possibly need more financial education?

Put simply, the current financial education investments—by both the private and public sector—are not as effective as they need to be. The evidence is unmistakable: large shares of Americans do not understand financial matters, and what knowledge does

exist among borrowers systematically varies with household income. Among the signs of this, the savings rate is negative and has been since the second quarter of 2005, all while the future of private and public pensions looks increasingly bleak. More specifically, Provident Financial and the Consumer Federation of America recently found that 73 percent of Americans do not understand that credit scores measure risk; the General Accountability Office found in a recent analysis of credit card customers that “many failed to understand key aspects of their cards, including when they would be charged for late payments or what actions could cause issuers to raise rates”; and the Jumpstart Coalition for Financial Education found that a majority of Americans do not understand basic financial management skills. The list of data from a wide range of sources goes on and on.

The result is that all consumers, but particularly lower-income consumers, are taking on more debt, or at least more expensive debt, than they can or even should handle, setting themselves up for financial hardships or overexposing themselves to too much risk by making poor investment decisions.

How to make more effective investments in financial education? The frank answer is: “we’ll get back to you soon.” Of all the needed responses to this new generation of credit problems in lower income markets, what to do about financial education strikes us as the most ripe area for fresh, innovative, big ideas that are up to the scale of the problem. We will propose an agenda of ideas that we think fits these criteria in the months to come. In the meantime, we would like to stress that a solution designed to address the lack of financial shrewdness among the public is likely not going to be just found in strategies that strive to boost their knowledge of financial matters. Such strategies will help some, and may even be a critical part of a larger solution, but the reality

is that no amount of training can be reasonably supplied to the general public which will give them the acumen to strategically navigate through the large, and constantly evolving, number of choices families now confront in consumer credit markets and, more broadly, in the financial services market. Rather, an appropriate solution needs to address the fact that the massive expansion in access to credit documented in this paper likely means that lower and middle income families now need private bankers just as much as much as wealthy families currently rely on. The question that we are wrestling with is how can we reasonably get there, given all of the many fiscal, political, legal, and market constraints? Among the many possible distributional channels, we may consider new or revised incentives for banks, employers, or perhaps financial intermediaries. It may also be appropriate to find ways to incentive individuals to seek out such resources. Or, it may be appropriate to look at new institutions that could address these issues.

In the meantime, it is clear that leaders at every level of government should take an inventory of the myriad financial education initiatives in their districts, assess which of these are effective and scalable, and then aggressively market and support those initiatives.

Consider Borrower and Lender Protections

The overwhelming majority of debt is likely attained under terms that are both transparent to borrowers and lenders. Yet, the information asymmetry that exists between borrowers and lenders—particularly mortgage brokers—opens the door for unscrupulous behavior. Those problems are particularly difficult for lower-income households, who have relatively small margins of error in their budget. Small rate increases can end up tipping off a series of financial difficulties.

Information asymmetries have also opened up on the lender side as credit markets have become more complicated. Someone in Geneva, for instance, can now end up indirectly financing the purchase of a new washing machine by a lower-income consumer in Detroit. But, that buyer of securitized loans in Geneva is many steps removed from that individual purchase, making the level of risk known to that investor more complicated to assess, particularly when it is packaged with multiple different risk profiles. These risks are particularly acute in the mortgage market because brokers are paid when a deal is closed, they are less invested in the long-term sustainability of the loans they sell, compared to banks that are based in a community and extend mortgages to the surrounding market of homebuyers. As a result, brokers may not face as strong of an incentive to consider the risk of a borrower, and adequately portray that risk to potential underwriters. The result is that credit can flow into this Detroit market where it possibly should not be extended.

Some practices that may reflect harmful asymmetries between what consumers know about credit and what some bad apples do are in the credit card industry. Policies like universal default, for instance, trigger rate increases across all of a borrower’s cards that have this policy, following a missed payment on just one card. The business case for such a policy is that the credit card companies are hedging their risks of future nonpayment by proactively collecting additional money from riskier customers. While that seems to make good business sense, it may actually make that default more likely by setting off a series of rate increases that make it more difficult for borrowers to make payments on time. At the same time, some critics claim that these policies go beyond cost-covering policies and become price gouging instead.

More serious are the price-inflating practices in the installment and mort-

gage markets, where nearly all of the borrowing among lower-income consumers occurs. Over 4.5 million lower-income households pay a higher than average price for their auto loan, for instance. Evidence in this paper suggests that the bulk of these higher prices reflect real, higher risks posed by these consumers. But, others have found that mortgage borrowers pay these higher prices, even after risk is controlled for—and the same may be true in the auto loan market.⁸³ Policymakers' first line of response has to be to take steps to better inform consumers, but it may be that some sort of disclosure policy, like a Car Buyers Disclosure Act, may also be needed. Among its numerous provisions, this law would require dealers to itemize components of their monthly installment bill, and makes it illegal for them to add terms of the contract without first disclosing additions to the consumer. Along those same lines, the law caps the incentive financial institutions can provide to dealers for selling high-priced loans and requires dealers to submit information to the consumer about the role of credit scores in determining auto loan rates. These provisions are designed to curb the ability of bad apples in this industry to take advantage of information asymmetries.

There also may be appropriate federal policy responses to reign in price-inflating practices among brokers in the mortgage market. One of the more obvious areas in need of attention is related to evidence from Freddie Mac that about one in five borrowers of high cost, or subprime, loans qualified for prime rate loans.⁸⁴ That analysis was based on a large sample of borrowers of high cost loans, and included variables used by lenders to evaluate risk. Again, the best line of defense against these types of price-inflating practices is a well-informed borrower, who knows how to shop around for credit, where to look for information, and what questions to ask before signing up for an expensive loan. But, since policymakers cannot

educate everyone, there also may need to be protections to guard against these practices. Over 20 states have taken such steps in recent years to curb practices among lenders, and Congress can look at these to assess what policies make sense at the federal level. Early research suggests that this legislation has not curbed lending, but has been successful in curbing some of the more egregious price inflating practices.⁸⁵ But, brokers, serving as the intermediary between consumers and lenders, have the strongest incentive to engage in questionable practices, and are long overdue for some attention from policymakers.

Fund Research

For all of the lending and borrowing that is now happening in lower-income markets today, it is shocking how little anyone really understands about the benefits and potential risks of this lending to lower-income borrowers.

On the consumer side, fundamental questions about debt are outstanding, like, most importantly, under what conditions homeownership is in the best financial interest of lower-income borrowers. It's not enough to just crudely correlate the wealth held by the typical homeowner, compare that to the much lower wealth held by non-homeowners, and draw the conclusion that money should be invested in boosting homeownership, particularly for lower-income households. There are a host of intervening variables that need to be assessed before homeownership can be responsibly recommended to a potential borrower, including, but not limited to, a) the price and terms of the mortgage they qualify for, b) the price and terms of the mortgage they qualify for if a borrower first improves their credit score, c) the stability of their household income, d) the need for and cost of other home-related installment or revolving loans, e) the neighborhood comps (i.e., what other homes in a neighborhood are selling for), f) the

typical appreciation over time for the neighborhood they are buying into; g) the amount of time they plan to stay in their home; and, most importantly, h) the cost of their credit investment, or the expected return they may expect from another investment, like education or workforce training, a car to get to a better job, or an investment in bonds or securities, among many other considerations (i.e., the opportunity cost).

More broadly, we don't know which financial investments are best for lower-income borrowers or types of lower-income borrowers. As a group, they are highly leveraged today, owing more than \$481 billion of debt, but it's not at all clear that all of this borrowing will actually help them get ahead, particularly since so much of it is for home investments where researchers have found that renting was a better option than owning for lower-income borrowers during a "considerable number of years."⁸⁶ This is information policymakers should have, particularly as so many lower-income households now have access to credit and so much policy is in place to further expand that access.

We also do not know how to effectively solve the institutional problems in lower-income markets, or the lack of effective intermediaries between what lower-income borrowers need to know about credit and what they know about it today. Lower-income borrowers are now confronted with myriad different credit products, many of which are dynamic. A dose of financial education in K–12 curriculum is a fundamental first step to being able to strategically navigate through these opportunities, but it is not nearly enough. What is enough is a matter well worth a sizable research agenda going forward.



Appendix A. Descriptive Statistics and Regression Results

	Descriptive Statistics			Regression Results			
	Mean	Min	Max	Credit Score	Credit Usage	Delinquency Rate	Median Debt
Average Credit Score	599.10	566.47	663.82		0.002** (0.001)		72.45** (18.17)
Cost of Living	0.00	-0.88	3.95	5.69* (3.75)	0.02 (0.02)	-0.0004** (0.0001)	-1000.17** (440.92)
Credit Usage	0.50	0.36	0.74	71.83** (35.00)			-11105.54** (4301.05)
Delinquency Rate	0.10	0.04	0.18	-269.28** (123.63)			
Divorce Rate	0.17	0.07	0.21		-0.78* (0.61)	0.05 (0.19)	29245.66** (15,821.61)
Median Debt	11,677.23	4,487.00	16,329.50			0.00 (0.00)	
Proportion Non-Citizen	0.07	0.01	0.22	163.75** (94.11)	-0.82** (0.46)		32313.55** (12317.77)
Proportion Non-White	0.63	0.25	0.91	-45.64** (21.65)	.07 (0.10)	0.03 (0.03)	-263.44 (2,612.76)
Proportion of Seniors	0.24	0.11	0.38	-19.83 (59.32)	0.39* (0.29)	0.01 (0.09)	5,130.16 (7514.19)
Unemployment Rate	0.12	0.05	0.20	-209.28** (101.63)	-216.04 (102.63)	0.43** (0.14)	-5,375.52 (12,317.88)
Health Insured Rate	0.87	0.78	0.92	92.41 (122.18)	-.60 (0.51)	-0.21** (0.12)	-42642.39** (13135.16)
Mortgage Stringency	0.01	-0.72	2.47	-1.20 (3.14)	-.0001 (0.01)	.002 (0.004)	620.35** (359.11)
Payday L. Stringency	0.01	-0.52	1.89	-.03 (2.98)	.01 (0.01)	(.001) .005	-188.02 (369.69)
Constant				556.18	0.19	-0.01	7,831.62
R_				0.77	0.35	0.56	0.78
Number of Cases				46	46	46	46

Note: Four metros were dropped from the regression models because of missing data; significance is tested against a one-sided alternative; ** $p < .05$; * $p < .10$

Source: Authors' analysis of data from TransUnion's Trend Data, the U.S. Census Bureau, ACCRA, CRL, and state banking departments.

Endnotes

1. See for a review: George J. Bentson. 1981. Mortgage redlining research: A review and critical analysis. *Journal of Bank Research*, 11, p-8-23; or Andrew Holmes and Paul Horvitz. 1994. "Mortgage Redlining: Race, Risk, and Demand." *Journal of Finance*. XLIX: 1, pp 81–99.
2. See Benston (1981) for a review of this literature; for an excellent recent review of some of the major regulation in this area see: Michael Barr. 2005. "Modes of Credit Market Regulation," in Nicolas P. Retsinas and Eric S. Belsky, *Building Assets, Building Credit: Creating Wealth in Low-Income Communities*, Washington, DC: The Brookings Institution and Cambridge, MA: Joint Center for Housing Studies at Harvard University.
3. These changes are outlined in more detail in Retsinas and Belsky (2005); Matt Fellowes. 2007. "Making Markets An Asset for the Poor." *Harvard Law and Policy Review*. 1 (2); and Patrick Bolton and Howard Rosenthal (eds). 2006. *Credit Markets for the Poor*. New York: Russel Sage Foundation. We also want to acknowledge that we are not the first to use this phrase. See, for instance, The Greenlining Institute at <http://www.greenlining.org>.
4. Author's analysis of the 1989 and 2004 Survey of Consumer Finances.
5. According to the National Association of Pawnbrokers, there were about 6,900 licensed pawnbrokers in 1988; by 2006 there were about 11,2006 [<http://www.nationalpawnbrokers.org>, accessed March 2007]. According to the Community Financial Services Association of America (the association for payday lenders), there were about 22,000 establishments nationwide in 2006 [<http://www.cfsa.net>, accessed March 2007]; Sheila Bair, among others, cites that these establishments hardly existed in the early 1990s. See: Sheila Bair. 2006. "Low-Cost Payday Loans: Opportunities and Obstacles." Baltimore, MD: The Annie E. Casey Foundation.
6. See, for instance, Matt Fellowes. 2006a. *From Poverty, Opportunity: Putting the Market to Work for Lower Income Families*. Washington, DC: The Brookings Institution; also see the description of state policy responses to this concern in Wei Li and Keith S. Ernst. 2006. "Low-Cost Payday Loans: Opportunities and Obstacles." Washington, DC: Center for Responsible Lending; and Barr (2005) for a description of the major federal policy response to date, the Homeownership Equity Protection Act (HOEPA).
7. See, for instance, Matt Fellowes. July 23, 2006b. "The High Price of Being Poor." *Los Angeles Times*. Part M; Pg. 5.
8. Author's analysis of the 2005 Home Mortgage Disclosure Act data, and 2004 Survey of Consumer Finances. Low-income in these analyses refers to all households that earn less than about 50 percent of the 2006 estimated median income by HUD, or \$30,000.
9. See, for instance, Howard Lax, Michael Manti, Paul Raca, and Peter Zorn. 2004. "Subprime Lending: An Investigation of Economic Efficiency." *Housing Policy Debate*, 15:3, p531–71.
10. This by no means is intended to suggest that homeownership is not a worthwhile goal for some or even a majority of lower income homeowners. There are many non-pecuniary benefits associated with homeownership, along with important social externalities. But, doubt is growing that the number of lower income households that benefit from homeownership (even though they qualify for credit) is as large a group as it usually is assumed to be.
11. William N. Goetzmann and Matthew Spiegel. 2002. "Policy Implications of Portfolio Choice in Lower Income Markets," in Nicolas P. Retsinas and Eric S. Belsky, *Low-Income Homeownership: Examining the Unexamined Goal*, Washington, DC: The Brookings Institution and Cambridge, MA: Joint Center for Housing Studies at Harvard University.
12. Indeed, homeownership is the primary vehicle by which lower income families build wealth today.
13. Eric S. Belsky, Nicolas P. Retsinas & Mark Duda. 2005. "The Financial Returns to Low-Income Homeownership." Working Paper 05-9, Cambridge, MA: Joint Center for Housing Studies at Harvard University; also see George C. Galster and Anna M. Santiago. 2007. "Low-Income Homeownership as an Asset-Building Tool: What Can We Tell Policymakers?" Working Paper.
14. See, for instance, Brian K. Bucks, Arthur B. Kennickell, and Kevin B. Moore. 2006. "Recent Changes in U.S. Family Finances: Evidence from the 2001 and 2004 Survey of Consumer Finances." *Federal Reserve Bulletin*, vol. 92, pp. A1–A38 (Table 14); and Matt Fellowes, Alan Berube, and Mia Mabanta. 2006. "Where is the Asset-Building Opportunity? A Profile of Credit Reports in 50 Metropolitan Areas." Presented at the 2006 Assets Learning Conference—A Lifetime of Assets, sponsored by the Federal Reserve and CFED. For a news review of the capital withdrawal in the subprime market, see: Vikas Bajaj. March 14, 2007. "Bad Loans Put Wall St. In a Swoon," *The New York Times*, Section C; Pg. 1.
15. Authors' analysis of the 2004 Survey of Consumer Finances.
16. But, there is a growing amount of work here. See, for instance: Ellen A. Merry and Michael D. Wilson. 2006. "The Geography of Mortgage Delinquency," presented at the 2006 Assets Learning Conference—A Lifetime of Assets, sponsored by the Federal Reserve and CFED; and Matt Fellowes. 2006c. "Credit Scores, Reports, and Getting Ahead in America." Washington, DC: The Brookings Institution; and John M. Barron, Gregory Eliehausen, and Michael E. Staten. 2000. "Monitoring the Household Sector with Aggregate Credit Bureau Data." *Business Economics* (35): 63–76.
17. Matt Fellowes. 2006d. "The Geography of Consumer Credit Scores." Presented at the National Black Caucus of States Institute; available at <http://www.brookings.edu/metro/speeches/fellowes20061016.htm> [accessed March 2007].
19. Author's analysis of the 2005 American Community Survey, administered by the Census Bureau.
20. These surveys are reviewed in more detail in Bucks, Kennickell, Moore (2006), and Arthur B. Kennickell and Janice Shack-Marquez. 1992. "Changes in Family Finances from 1983 to 1989: Evidence from the Survey of Consumer Finances." *Federal Reserve Bulletin*, vol. 78, pp. 1–18.
21. For more information about the industry please see: Robert B. Avery, Paul S. Calem, and Glenn B. Canner. 2003. "An Overview of Consumer Data and Credit Reporting." *Federal Reserve Bulletin*, Board of Governors of the Federal Reserve System, February Issue. Also see Robert Hunt. 2005. "A Century of Credit Reporting in America." (Federal Reserve Bank of Philadelphia, Working Paper No 05–13).

“We must move from “greenlining” credit in lower-income markets, to a more cautious “yellowlining,” an evolution that we believe will foster more wealth and sustainable economic mobility in lower income neighborhoods.”

22. For more information, please refer to: <http://www.transunion.com> [accessed March 2007]. TransUnion Trend Data use more than 200 credit characteristics, dating back to 1992, to assess historic, current and future credit conditions. Working with financial institutions, TransUnion uses this data to help them benchmark portfolio performance against the larger industry, analyze the impact that macroeconomic forces have upon both local market conditions and portfolio-specific performance, and forecast future behavior through econometric models at the regional and national level for key variables. Companies can predict borrower performance in the future, which can be crucial in determining the adequacy of any loan loss reserves, and determine where they should focus their expansion efforts. In addition, companies can use this data to understand how economic conditions and public policy affect consumer credit behavior.
23. These reports are depersonalized; the underlying data is described in more detail in Barron, Elliehausen, and Staten (2000); the underlying sample for the Trend Data is around 25 million credit reports, depending on the quarter.
24. For more information about these data please refer to Barron, Elliehausen, Staten (2000).
25. For more information about the content of reports, please see Avery, Calem, and Canner (2003); and Hunt (2005).
26. Keith Ernst and Wei Li. 2006. “The Best Value in the Subprime Market: State Predatory Lending Reforms.” Durham, NC: Center for Responsible Lending.
27. State regulation of payday lenders is now much more efficacious than it once was because a) all of the federal banking regulatory agencies now ban or place severe restrictions on bank-payday lending partnerships (curbing the impact of federal preemption); b) states are starting to curb the importation of more favorable rates from other states; and c) a growing number of banks and credit unions are offering lower cost alternatives.
27. Authors’ analysis of the 2004 Survey of Consumer Finances.
28. Comments made by bureau representatives at a roundtable on alternative data in credit score modeling, convened by the Brookings Institution’s Urban Market Initiative.
29. We also considered calculating income quartiles as a function of the distribution of census tracts within a metro area (rather than across), but decided not to use this measure because of conversations with creditors that led us to believe neighborhood income rankings are usually considered within the context of national or regional trends, rather than within a single metropolitan area.
30. Many different types of markets exist, from open air farmers markets like the one every Sunday morning in Dupont Circle in Washington, DC to something more complex, like stock markets.
31. King, Gary. 1989. *Unifying Political Methodology: The Likelihood Theory of Statistical Inference*. New York: Cambridge University Press; Gary King, Michael Tomz, Jason Wittenberg. 2000. “Making the Most of Statistical Analyses: Improving Interpretation and Presentation.” *American Journal of Political Science*, 44: 2, p 341–355.
32. Note that this first section of findings results on the 2004 Survey of Consumer Finances, reviewed in the Methodology section of this paper.
33. Bucks, Kennickell, Moore (2006), Table 14. Note that the definition of low-income in this Bulletin article is the lowest income quintile, and that we use the bottom income quartile in this analysis.
34. Ellen Seidman and Jennifer Tescher. 2005. “Unbanked to Homeowner: Improving Financial Services for Low-Income, Low-Asset Customers,” in Retsinas and Belsky (2005).
35. For an excellent review of this recent trend see Eric S. Belsky and Mark Duda. 2002. “Anatomy of the Low-Income Homeownership Boom in the 1990s,” in Retsinas and Belsky (2002).
36. Goetzmann and Spiegel (2002); Retsinas and Belsky (2003); Galster and Santiago (2007).
37. See Belsky, Retsinas, and Duda (2005).
38. Fellowes (2006a)
39. But, a number of positive externalities are also tied to homeownership, which must be considered in

- the context of these other goals. For a review of the evidence, see Retsinas and Belsky (2002), and Robert Lerman and Signe-Mary McKernan, 2006. "The Effects of Asset Building on the Economic and Social Well-Being of Families: An Assessment of the Literature," presented at the 2006 Assets Learning Conference—A Lifetime of Assets, sponsored by the Federal Reserve and CFED.
40. Some have suggested, for instance, that lower income households could be financing a lifestyle above their means, and there is some evidence from the Survey of Consumer Finances to support that conjecture. But, the reality is that there is data to support most major conjectures on this point.
41. Authors' analysis of the 2004 Survey of Consumer Finances.
42. Universal default policies are a practice in the credit card industry of using a late payment on one of a creditor's cards to justify payments on all of their credit cards that fall under universal default. For evidence of the growing non-credit uses of this information, see Fellowes (2006c).
43. See Bentson (1981), Belsky, Retsinas, and Duda (2005), and Barron, Elliehausen, and Staten (2000).
44. Holmes and Horvitz (1994); Barron, Elliehausen, Staten (2000).
45. Both effects were also considered by Barron, Elliehausen, Staten (2000).
46. See Holmes and Horvitz (1994) for a critical assessment; or, more recently, chapters in Xavier de Souza Briggs (editor). 2005. *The Geography of Opportunity: Race and Housing Choice in Metropolitan America*. Washington, DC: The Brookings Institution.
47. See criticism in, and the letters to the editor following publication of: Miriam Jordan and Valerie Bauerlein. February 13, 2007. "Bank of America Casts Wider Net For Hispanics Lender Risks Controversy Aiming New Credit Card At Illegal Immigrants." *Wall Street Journal*, Section A, Page 1; also see Sherrie L.W. Rhine and William H. Greene. 2006. "The Determinants of Being Unbanked for U.S. Immigrants." *The Journal of Consumer Affairs*, 40:1, p21–40.
48. See, for instance, Cindy Zeldin and Mark Rukavina. 2007. "Borrowing to Stay Healthy: How Credit Card Debt is Related to Medical Expenses." New York, NY: Demos.
49. See Ernst and Li (2006); but, for some historical perspective see: Andrea Lee Negroni. 1997. "A state law roundup." Mortgage Banking, published by the Mortgage Bankers Association; and Robert S. Lotstein. 1997. "The patchwork of state regulation." Mortgage Banking, published by the Mortgage Bankers Association.
50. Fellowes (2007).
51. The dependent variable in this analysis is the average proportion of households that owe money to a creditor and live in a lower income neighborhood in one of the 50 metropolitan areas in this analysis. We also considered the proportion of households that have an open line of credit and found similar results.
52. Although, do note that the predicted probability of delinquency or default does not correspond with this linear scoring system; so, for instance, score reductions of 20 points might correspond with a doubling of the probability that a borrower will default on a loan.
53. We initially also included average poverty rates in lower income market as an independent variable in these models, but decided to drop it after determining that its inclusion created high multicollinearity, producing radically different inferences than the underlying correlations suggest exists. As Berry points out, "a prevalent misconception is that high (but not perfect) multicollinearity violates the assumptions of multiple regression. But, ...a nearly linear relationship among independent variables does not violate any assumption." This means that less than perfect multicollinearity still produces estimates that are BLUE. However, it is more difficult to isolate the independent effect of these independent variables (because they explain similar variance in the dependent variable) and, in the presence of high multicollinearity, can increase the chances of a Type II error. For this reason, and because its representation of credit quality is likely picked up by other effects, we decided to drop this variable. William Berry. 1993. *Understanding Regression Assumptions*. Newbury Park: Sage Publications.
54. Note that communities with large shares of immigrants are particularly likely to have more informal credit pools, which will not be captured by TransUnion's Trend Data.
55. Katy Jacob and Rachel Schneider. 2006. "Market Interest in Alternative Data Sources and Credit Scoring." Center for Financial Services Innovation. [<http://www.cfsinnovation.com/publications.php>, accessed March 2007].
56. Rhine and Greene (2006).
57. See criticism in, and the letters to the editor following publication of: Miriam Jordan and Valerie Bauerlein. February 13, 2007. "Bank of America Casts Wider Net For Hispanics Lender Risks Controversy Aiming New Credit Card At Illegal Immigrants." *Wall Street Journal*, Section A, Page 1; also, for an excellent review of the market challenges and opportunities serving immigrants, please see: Anna Paulson, Audrey Singer, Robin Newberger and Jeremy Smith. 2006. "Financial Access for Immigrants: Lessons from Diverse Perspectives," (Chicago and Washington, D.C.: Chicago Federal Reserve Bank and Brookings Institution).
58. Authors' analysis of the 2004 Survey of Consumer Finances.
59. Note that this is not the case for all seniors as a group—just lower income seniors. Authors' analysis of the 2004 Survey of Consumer Finances.
60. Sumit Agarwal, John C. Driscoll, Xaxier Gabaix, and David Laibson. 2007. "The Age of Reason: Financial Decisions Over the Lifecycle." MIT Department of Economics Working Paper No. 07-11.
61. This analysis excludes borrowers that do not carry debt.
62. This is indicated in the Survey of Consumer Finances by the greater reliance among lower income homeowners on installment trades for these items.
63. For a summary of this, please see: Michael J. Pyle. 2003. "A "Flip" Look at Predatory Lending: Will the Fed's Revised Regulation Z End Abusive Refinancing Practices?" *The Yale Law Journal*, 112: 7., p. 1919–1926.

64. But, note that this variable is measured for the entire metropolitan area, not just lower income neighborhoods. A better measure would assess insurance coverage within lower income neighborhoods, like the other efforts.
65. Although the effect is inconsistent in the bankruptcy literature. See, for instance: David B. Gross and Nicholas S. Souleles. 2002. "An Empirical Analysis of Personal Bankruptcy and Delinquency." *The Review of Financial Studies*, Vol. 15, No. 1, pp. 319-347; or Robert O. Herrmann. 1966. "Families in Bankruptcy: A Survey of Recent Studies." *Journal of Marriage and the Family*, Vol. 28, No. 3, pp. 324-330; or Elizabeth Warren, Teresa A. Sullivan, and Jay Lawrence Westbrook. 2000. *The Fragile Middle Class: Americans in Debt*. New Haven: Yale University Press.
66. See analysis in the first section of findings in this study.
67. Note that this analysis is based on all borrowers in a metro area, not just those with outstanding debt.
68. See unemployment data at the Bureau of Labor Statistics [<http://www.bls.gov>, accessed March 2007]; gross domestic product data at the Bureau of Economic Analysis [<http://www.bea.gov/national/index.htm>, accessed March 2007].
69. Because of endogeneity. Still, it would be interesting to look at a structural equation model that considered whether this relationship is simultaneous.
70. Barron, Elliehausen, and Staten (2000)
71. See Gross and Souleles (2002); Herrmann (1966); and Warren, Sullivan, and Westbrook (2000).
72. Robert B. Avery, Kenneth P. Brevoort, and Glenn B. Canner. 2006. "Higher-Priced Home Lending and the 2005 HMDA Data." Federal Reserve Bulletin.
73. But, note that this variable is measured for the entire metropolitan area, not just lower income neighborhoods. A better measure would assess insurance coverage within lower income neighborhoods, like the other efforts.
74. Ernst and Wi (2006); Fellowes (2007).
75. See, for instance, Dina ElBoghady. March 25, 2007. "Poor Credit Clouds Hopes For a Bargain" *The Washington Post*, Pg. R01; or Chris Larsen. 2007. "Access and Transparency through Person-to-Person Lending." Presentation to the FDIC Advisory Committee on Economic Inclusion (ComE-IN) Meeting [<http://www.fdic.gov/about/comein/agenda.html>, accessed March 2007].
76. But, for a very interesting analysis using an estimated, non-market score, please see Raphael Bostic, Paul Calem, and Susan Wachter, "Hitting the Wall: Credit as an Impediment to Homeownership," in Retsinas and Belsky (2005).
77. Please refer to discussion in credit usage section (Findings B).
78. It is important to point out that none of these variables are used in the actual calculation of credit scores, since credit scores are calculated for individuals, not markets. But, they do say something interesting about why average risks in lower income markets vary across the country, albeit often indirectly.
79. Author's analysis of the 2004 Survey of Consumer Finances.
80. George C. Galster and Anna M. Santiago. 2007. "Low-Income Homeownership as an Asset-Building Tool: What Can We Tell Policymakers?" Working Paper.
81. For recent examinations of this goal, see Belsky, Retsinas, and Duda (2005) and Retsinas and Belsky (2002).
82. Lillian Woo and David Buchholz. 2006. "Subsidies for Assets: A New Look at the Federal Budget." Presented at the 2006 Assets Learning Conference—A Lifetime of Assets, sponsored by the Federal Reserve and CFED.
83. Lax, Manti, Raca, and Zorn (2004).
84. Lax, Manti, Raca, and Zorn (2004).
85. Ernst and Li (2006).
86. Belsky, Retsinas, and Duda (2005).

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