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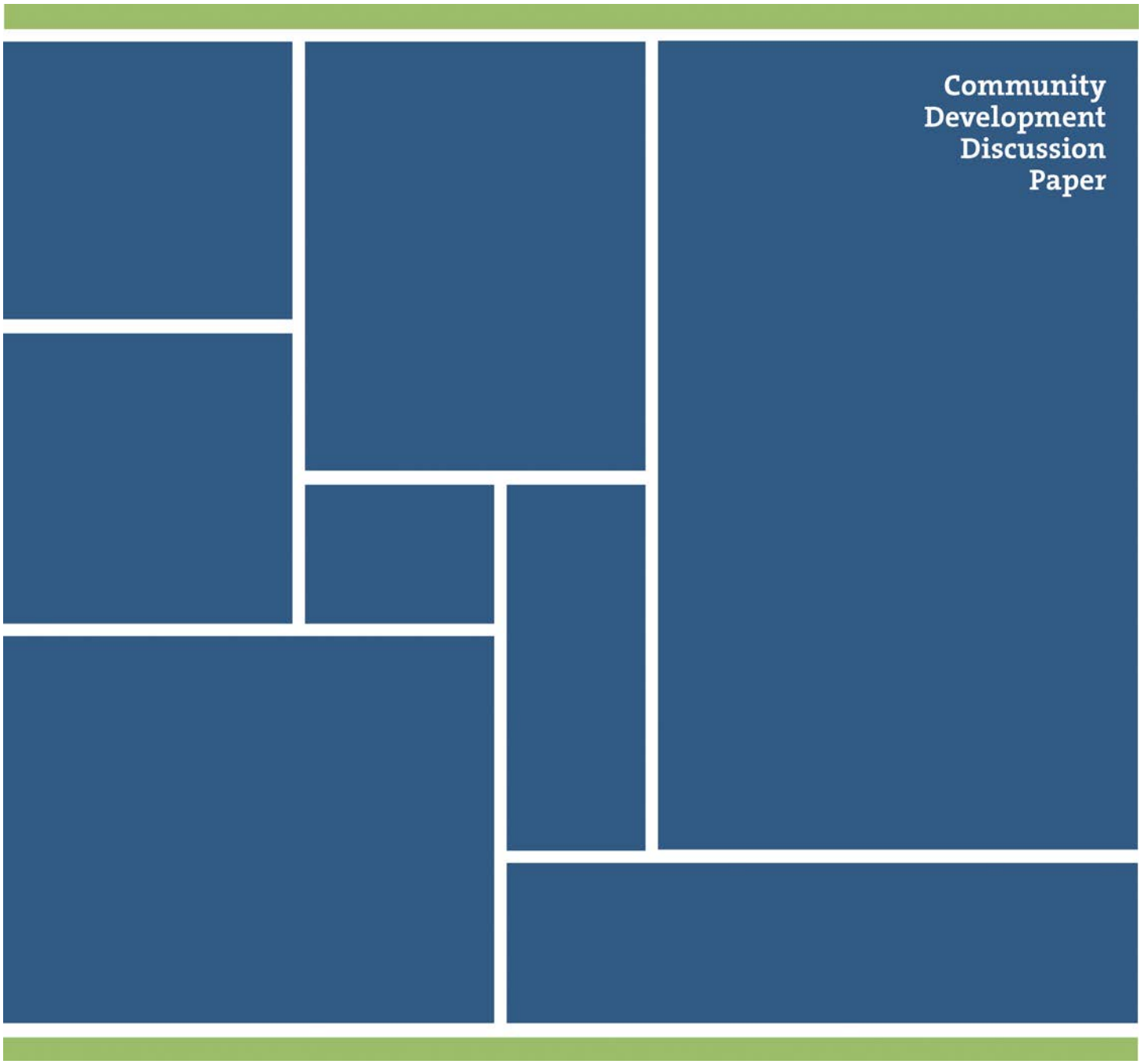

Credit Conditions by Neighborhood Income: The Picture in Massachusetts

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Abstract

Lack of data availability has limited research on disparities in credit conditions in different income areas. This report uses a unique dataset from a credit reporting agency to describe credit conditions in Massachusetts in low- and moderate-income (LMI) and middle- and high-income (MUI) census tracts using a unique and nationally representative database of all individuals who have a credit history. The analysis highlights the differences in the percentage of individuals with credit accounts, median balances, monthly payments, delinquency rates, and credit scores in 2006 and 2012. The report shows that the percentage of individuals with active accounts decreased from 2006 to 2012. In particular, the number of consumers with credit cards was significantly lower in 2012 than in 2006 in LMI neighborhoods. Across all types of credit analyzed, delinquency rates were twice as high in LMI tracts than in MUI neighborhoods. Overall, mortgage delinquency rates increased fourfold from 2006 to 2012. Among consumers with credit records, student loans were more prevalent in LMI areas than MUI areas and had the highest delinquency rate of all loans in both income categories. The report shows that 30 percent of individuals with credit records living in LMI areas had subprime credit scores in 2012.

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The Great Recession has deeply affected families' ability to save and invest for the future, especially in low- and moderate-income (LMI) communities.[1] Although things began looking up in 2011, a record number of families experienced economic insecurity during the economic downturn, and access to credit has been further restricted (Economic Security Index 2012).[2] Limited access to reasonably priced credit constrains families' ability to smooth income and consumption, protect themselves from unforeseen hardships, and invest for the future (Claessnes 2006). Furthermore, a vicious cycle is perpetuated whereby low income restricts collateral and access to credit, which in turn limits the potential for income generation (Azariadis and Stachurski 2005). Access to credit, use of credit, and credit needs all vary significantly by income. Discovering what these differences are and creating a clear picture of LMI families' credit conditions will help clarify what factors influence families' financial stability and should reveal where policy change or program implementation is needed.

A wealth of research has documented the negative consequences of income inequality, but less in known about credit access inequality. The enactment of the Consumer Reinvestment Act (CRA) and the Home Mortgage Disclosure Act (HMDA) in the mid-1970s spurred research on mortgage access in LMI areas and among minority and low-income borrowers. However, lack of data availability on other types of loans has limited research on general credit conditions in LMI areas. In this report, I conduct a descriptive analysis of the credit conditions in Massachusetts using the Federal Reserve Bank of New York's Consumer Credit Panel (FRBNY CCP),[3] a unique and nationally representative database of all individuals who have a credit history provided by Equifax. The purpose of this report is to describe a variety of intriguing trends, many of which may merit separate in-depth analysis. The analysis is done by neighborhood income category

[1] LMI census tracts are defined as census tracts that have median family income below 80 percent of the metropolitan statistical area (MSA) median family income. For census tracts located in non-MSAs, the tract median family income is compared to the state's non-MSA median family income.

[2] The Economic Security Index measures the proportion of individuals who, during the course of a year, lose at least 25 percent of their available household income or have large out-of-pocket medical spending and lack sufficient liquid financial wealth to fully cushion the loss. It is calculated by the Institution for Social and Policy Studies at Yale University.

[3] For details about the FRBNY CCP, see Lee and van der Klaauw (2010). For quarterly information on credit conditions in the United States, see the New York Fed's quarterly *Household Debt and Credit Report,* available at http://data.newyorkfed.org/creditconditions.

and type of credit (auto loans, mortgages, credit cards, and student debt) and includes information on number of accounts, monthly payment and balance, delinquency rates, and credit scores in the second quarter of 2006 and 2012 (2Q2006 and 2Q2012). This approach allows us to compare pre- and postrecession credit conditions and have a snapshot of current credit use in Massachusetts. Although it is out of the scope of this study to explain the reasons for the disparities between people in the LMI census tracts and those in the MUI census tracts, this analysis provides insights into the prevalence of different types of credit in different income tracts and into the recession's effect on consumers' access to and use of credit.

Summary of findings

Analysis of credit conditions in Massachusetts confirms that families living in LMI neighborhoods are less likely to use traditional forms of credit and that the recession has hindered their use of credit. For instance, as of 2012, 54.5 percent of residents 18 years and older living in LMI neighborhoods had credit cards and 18.0 percent had mortgages, while the incidence of these two types of accounts in MUI areas was 76.8 percent and 36.5, respectively. The percentage of population 18 years and older with student loans was 12.2 percent ion LMI tracts and 13.6 percent in MUI tracts.[4]

From 2006 to 2012, active accounts declined 10.4 percent in LMI neighborhoods, but only 4.1 percent in MUI tracts. The largest decline is seen in credit card accounts in both MUI and LMI tracts.

In addition to looking at the incidence of different types of credit, it is important analyze delinquency rates, as delinquency rates have a large effect on future access to credit and on financial stability and may signal problems in certain sectors of the economy as a whole. Across different types of debt, delinquency rates, measured as the percentage of individuals who had at least one account that was 60 days or more past due, were twice as high in LMI

[4] Among consumers that have a credit history, student loan debt is the only type of account that is more prevalent LMI neighborhoods than in MUI tracts. As of 2Q2012, 17.7 percent of LMI area residents with active credit reports had student loans, compared with 15.4 percent of consumers in MUI areas.

neighborhoods as in MUI tracts in 2Q2012. Default rates were highest for student loans, but mortgage delinquency rates skyrocketed during the Great Recession, increasing from 1.1 percent in 2006 to 4.2 percent in 2012 in MUI areas and from 2.6 percent to 9.9 percent in LMI tracts.

Finally, this report shows that credit scores are much lower in LMI neighborhoods. As of 2Q2012, 30.3 percent of individuals with credit scores living in LMI areas had subprime and deep subprime risk scores, whereas only 13.1 percent did in MUI census tracts. Credit scores have direct impact on denial rates and on loan pricing and may limit access to jobs and rental housing options.

Methodology

I use the FRBNY CCP to assess credit conditions in Massachusetts. This data set is built from information provided by Equifax, one of the United States' three credit reporting agencies.[5] Credit reporting agencies collect and maintain credit histories of U.S. residents who have applied for or taken out loans. Public-record items, such as bankruptcies, and items reported by collection agencies are also included.[6] Some information, such as closed accounts and delinquencies, stay on record for about seven years. This means that even individuals without recent credit activity may be included in the panel if he had, for example, a closed account in the past seven years.

The FRBNY CCP is a longitudinal data set with quarterly information starting in the first quarter of 1999. The panel is a nationally representative 5 percent random sample of all individuals with a social security number and a credit report. The sample is designed such that the same individuals can be observed in each period over time and the sample remains

[5] A consumer credit report is an organized presentation of information about an individual's credit record that includes information on the individual's experiences with credit, leases, non-credit-related bills, collection agency actions, monetary-related public records, and inquiries about the individual's credit history. For more information about credit reports, see Avery, Calem, and Canner (2004).

[6] For more details, see Lee and van der Klaauw (2010).

representative of the target population in each quarter.[7] Each quarter, the 5 percent sample of primary members includes about 12 million individuals. The panel includes quarterly information on different types of loans for individuals with credit records, including mortgage accounts (including first mortgages and home equity installment loans), home equity revolving accounts (or home equity line of credit, HELOC), auto loans (auto finance loans from automobile dealers and automobile financing companies and auto bank loans provided by banking institutions), credit card accounts, student loans, and other loan accounts (such as consumer finance and retail accounts).[8] For each of these accounts, the FRBNY CCP has data on the number of active accounts and their balance, monthly payment, and delinquency status. In addition, the FRBNY CCP includes information on the individual's Equifax credit score and census tract.

For this analysis, I limit the sample to primary individuals (that is, the people comprising the 5 percent sample) located in Massachusetts in the second quarter of 2006 and 2012. I exclude individuals for whom information on their total balance is missing.[9] I focus on analyzing the number of accounts, balances, and payments of mortgages, auto loans, credit card, and student loans. The FRBNY CCP provides a wealth of information on each account, but the data set is limited by the fact that age is the only demographic variable available. Since there is no individual income information, I conduct this analysis at the neighborhood level.[10] Neighborhoods are categorized as either LMI or MUI depending on the relationship of their census tract's median family income with the metropolitan statistical area (MSA) median family income in 2009. [11] For each income category, I calculate the area's median quarterly balance

[7] The target population comprises all U.S. residents with a credit history excluding those who have never applied for or qualified for a loan. The panel also includes people living in the same household as the primary members.
[8] The credit report data includes information on accounts that have been reported by the creditor within three months of the date that the credit records were drawn each quarter.
[9] About 18.7 percent of the Massachusetts sample had missing total-balance information. This might be individuals with thin files or with no recent credit activity
[10] The terms "neighborhood" and "census tract" are used interchangeably in this report. As defined by the Census Bureau, census tracts are small, relatively permanent statistical subdivisions of a county that usually have between 2,500 and 8,000 persons.
[11] I use the American Community Survey's 2005–2009 five-year estimates when I refer to 2009 income. These are the most recent data that use the 2000 census boundaries that are also used in the CCP data set. See footnote 1 for more details on how LMI status is determined. All census tracts not categorized LMI are considered MUI. A

and monthly payment, the delinquency rates for each type of loan, and median credit scores in 2Q2006 and 2Q2012. Medians are calculated among consumers that have active accounts. In cases where individuals have joint accounts, I assign 50 percent of the account balance to each individual.

Because census tracts are classified LMI or MUI according to their income in 2009, that classification remains constant when analyzing 2006 and 2012 credit outcomes data. As a result, changes in credit conditions within each tract may reflect different individuals moving in and out of the neighborhood and/or changes in the tract's residents' credit outcomes.

Observations by neighborhood income

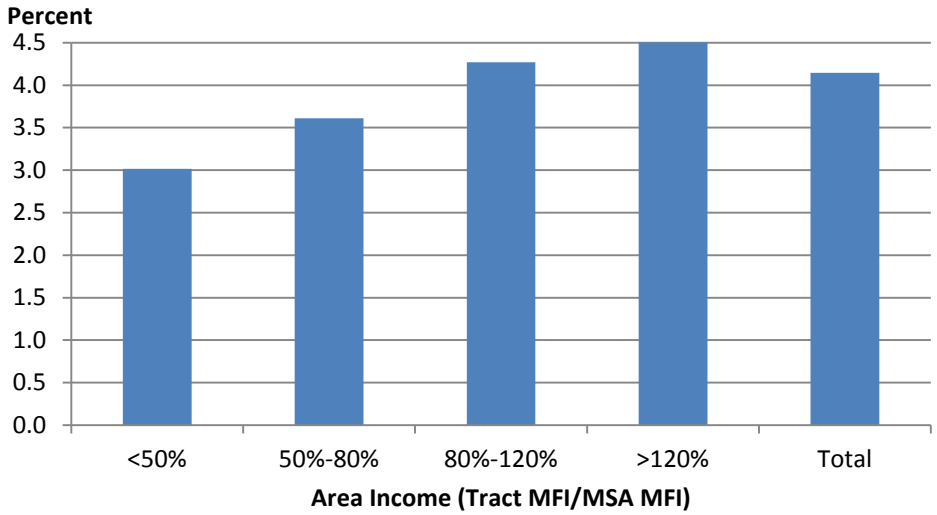
The number of people in the FRBNY CCP data set reflects the number of people with credit history in a particular geography.[12] As expected, there are fewer observations in LMI census tracts because low-income individuals are less likely to have applied or qualified for a loan. For example, in 2012, 3.0 percent of the FRBNY CCP sample who were 18 years and older and living in low-income areas had active accounts, compared with 4.6 percent in upper-income tracts (Figure 1).[13]

similar classification is used by other organizations to determine eligibility for affordable housing programs or Community Reinvestment Act (CRA) credit. See Box 1 for a description of the distribution of census tracts by income in Massachusetts.

[12] The sampling methodology captures the new flows into and out of the target population.

[13] Age demographics are based on 2005–2009 American Community Survey five-year estimates. For details about the number of observations and estimates of the number of consumers with active credit records, see appendices 1 and 2.

Figure 1. Observations in the CCP data set per resident 18 years and older by area income, Massachusetts, 2Q2012



Source: NY Fed/Equifax

This reflects the fact that low-income families are more likely to be unbanked or underbanked[14] and to draw on nontraditional financing sources when in need of additional funds. Additionally, LMI families' access or use of credit has been disproportionally affected during the economic downturn. The use of credit through alternative financial services such as nonbank money orders and nonbank check cashing would not appear in the credit report. According to a recent survey by the Federal Deposit Insurance Corporation, 8.2 percent of U.S. households and 4.9 percent of Massachusetts households are unbanked (Burhouse and Osaki 2012). This percentage is much higher among low-income households (28.2 percent in the United States overall and 20.9 percent in Massachusetts). According to the survey, 64.9 percent of unbanked households have used alternative financial services in the past year. Those transactions would not be recorded in the credit report database. The survey also shows that 29.5 percent of unbanked households do not use any of the alternative financial services, suggesting they rely primarily on cash. The survey also attempted to determine why individuals use alternative financial services. The main reasons cited were convenience and speed of service. Other studies show that most households using so-called small-dollar credit (SDC) use it

[14] Unbanked households are those that lack any kind of deposit account at an insured depository institution. Underbanked households have bank accounts, but also rely on alternative financial services.

for such household obligations as utility bills, general living expenses, and rent (Levy and Sledge 2012).[15] Levy and Sledge point out that 30 percent of all SDC consumers use SDC not just to overcome a temporary shortage of funds but because their expenses were consistently higher than their income.

One of the impacts of the Great Recession has been the decrease in consumer indebtedness as a result of tightening credit conditions and reduction in consumption and consumer spending (Brown et al. 2010). This national trend is also reflected in the data for Massachusetts. The number of individuals in Massachusetts with active accounts decreased 5.6 percent from 2006 to 2012. The decline was more pronounced in LMI neighborhoods, where the number of individuals with active accounts declined 10.4 percent. The decrease was only 4.1 percent in MUI census tracts.[16]

Credit conditions in Massachusetts

The following sections look at the prevalence of different types of credit by neighborhood income, noting median balances, monthly payments, and delinquency rates.[17] I first calculate estimates of the share of individuals 18 years and older that have different types of credit by neighborhood income. As of 2012, 54.5 percent of residents 18 years and older living in LMI neighborhoods had credit cards, 19.6 percent had auto loans, 18.5 percent had mortgages, and 12.2 percent had student loans. In MUI areas, 76.8 percent of the population

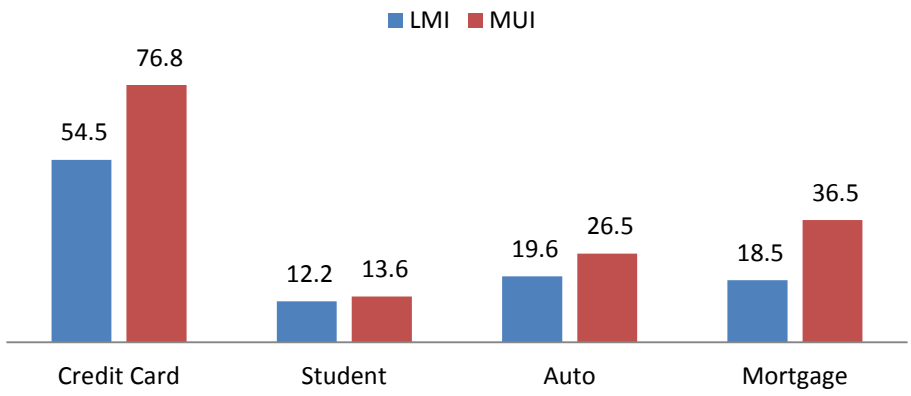
[15] Small-dollar credit (SDC) is defined in their study as products for quick access to cash, such as payday loans, pawn loans, direct deposit advance loans, auto title loans, and nonbank installment loans.

[16] Every year, individuals enter and exit the sample for several reasons. For example, an individual exits the database if he moves out of the state or if he has not had any credit activity in the past seven to ten years. In this report, I focus on individuals with active accounts, that is, those for whom there has been information reported in the past three months.

[17] For additional data on credit conditions by area income in the United States, see the Federal Reserve Bank of Philadelphia's data dashboard http://www.philadelphiafed.org/community-development/data-dashboard/consumer-credit-data.cfm.

18 years and older had credit cards, 26.5 had auto loans, and 36.5 percent had mortgages—(Figure 2). Slightly more residents in MUI tracts had student loans, at 13.6 percent.[18]

Figure 2. Percentage of population 18 years and older by type of account and neighborhood income, 2Q2012



Source: NY Fed/Equifax

It is important to keep in mind the prevalence of different types of accounts when examining monthly payments, account balances, and delinquency rates. In the following sections, I analyze LMI and MUI median credit outcomes among individuals who had at least one active account. Changes in these outcomes in an area may reflect changes in the residents' credit profiles or population shifts in and out of the area.

Credit card accounts

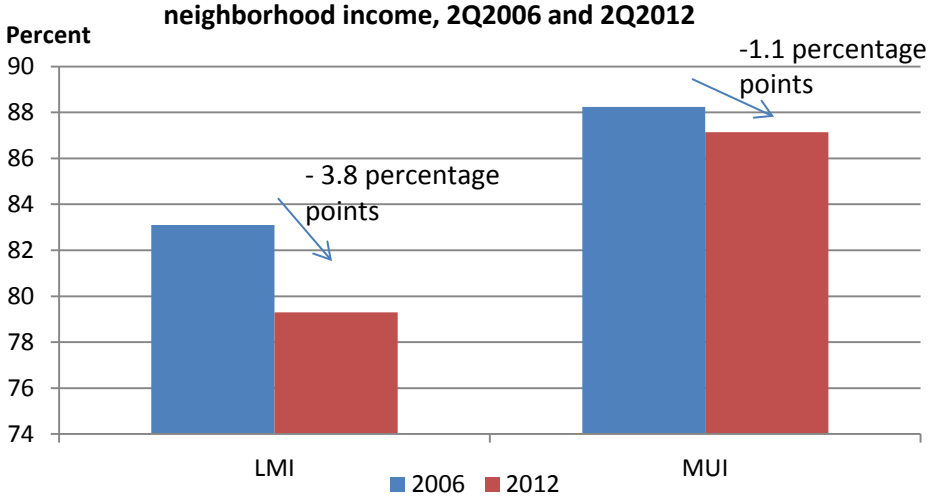
The great majority of individuals with active credit records have a credit card account, regardless of neighborhood income. Overall, the share of consumers with at least one active account that had credit cards declined from 87.0 percent in 2Q2006 to 85.4 percent 2Q2012 (Figure 3). The decrease was driven by a drop in credit card accounts in LMI neighborhoods, where the share declined from 83.1 percent to 79.3 percent.[19] It is very difficult to determine

[18] Appendices 1 and 2 provide more data regarding the prevalence of these sorts of accounts, as well as HELOCs and other accounts (including consumer finance and retail accounts), for four income categories in 2Q2006 and 2Q2012.

[19] The total number of consumers with credit cards declined 14.5 percent in LMI areas and 5.3 percent in MUI areas. (See Appendix 1 for details on the number of accounts.)

whether these declines were caused by changes in demand or by limited supply. On the one hand, low-income individuals might not qualify for credit cards or may be faced with higher cost credit that limits their access to credit cards. At the same time, low-income consumers might not seek credit cards for fear of being rejected or because the use of credit cards can entail costs they do not want to incur. It seems likely that these changes are due to shifts in both the supply and demand side of credit. Brown et. al. (2010) note that the credit report inquiries tracks the new account series closely, implying that weaker demand for credit from borrowers contributed to the decline in new account openings. It is harder to establish what caused an increase in closed accounts.

Figure 3. Percentage of consumers in Massachusetts with active credit records that have credit cards, by neighborhood income, 2Q2006 and 2Q2012



Source: NY Fed/Equifax

As of 2Q2012, the median credit card balance among card holders in Massachusetts was $1,234 in LMI neighborhoods and $1,425 in MUI census tracts.[20] The median credit card balance declined 6.3 percent from 2Q2006 to 2Q2012 in LMI areas, while it increased by 5.8 percent in MUI neighborhoods.[21] Traub and Ruetschlin (2012) report that 40 percent of LMI households used credit cards to pay for basic living expenses such as rent or mortgage bills,

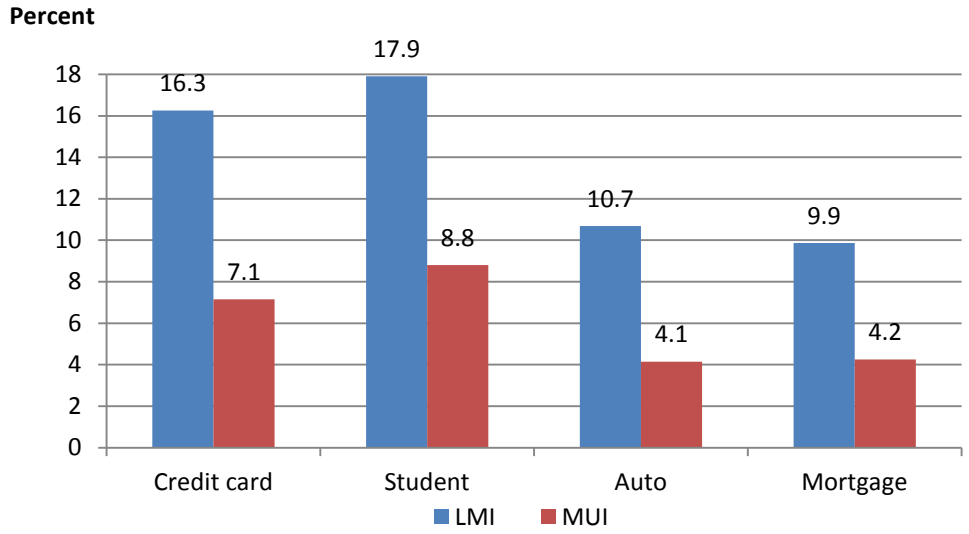
[20] The difference in median credit card balance between LMI and MUI was statistically significant at the 99 percent level of confidence in 2Q2012 and at the 90 percent level in 2Q2006, based on a nonparametric K-sample test on the equality of the median.

[21] For details on balance and payments for credit cards and other accounts, see appendices 3 and 4.

groceries, or utilities because they did not have enough money in their checking or savings accounts. They also note that credit card loans were on average more costly in 2012 than four years earlier.[22]

Among the different types of accounts, credit card accounts showed the second-highest delinquency rate after student loans, with delinquency calculated as the percentage of individuals who had an account that was 60 days or more past due. In 2Q2012, delinquency rates were 2.3 times higher in LMI areas (16.3 percent) than in MUI areas (7.1 percent) (Figure 4). Interestingly, delinquency rates went down 3.0 percentage points in LMI areas and 0.4 percentage points in MUI areas from 2Q2006 to 2Q2012, possibly because borrowers that are more likely to be delinquent were less likely to have access to credit cards in 2012 than in 2006.[23]

Figure 4. Delinquency rates in Massachusetts by type of credit and neighborhood income, 2Q2012



Source: NY Fed/Equifax

[22] According to Traub and Ruetschlin (2012), 33 percent of African Americans and 34 percent of Latinos reportedly paid interest rates above 20 percent.

[23] For details about delinquency rates in 2Q2006 and 2Q2012 by four neighborhood income categories, see Appendix 5.

Auto loans

Auto loans include loans made by automobile dealers and automobile financing companies and auto bank loans provided by banking institutions. The share of individuals with active credit reports that had auto loans increased from 28.4 percent in 2006 to 29.7 percent in 2012. The increase was slightly larger in LMI areas (from 26.4 percent to 28.9 percent) than in MUI tracts (from 29.0 percent to 30.0 percent).[24]

The median auto loan balance was $7,763 in LMI census tracts and $8,310 in MUI census tracts as of 2Q2012.[25] Interestingly, although the balance decreased 2.1 percent in LMI areas from 2Q2006 to 2Q2012, median car loan monthly payments in LMI tracts increased 2.5 percent to $284.[26] Auto loans delinquency rates in Massachusetts increased from 7.8 percent to 10.7 percent in LMI areas and from 2.9 percent to 4.1 percent in MUI areas from 2006 to 2012.

Unfortunately, because the FRBNY CCP does not have information about interest rates and other loan terms, it is not possible to infer how those differ by area income and how they might affect low-income consumers. Fellowes (2009) shows that lower-income families tend to pay more for the same products than families with higher incomes. For instance, he notes that in the United States, consumers from lower-income neighborhoods pay between $50 and $500 more, on average, to buy the same car as consumers from higher-income neighborhoods and an extra 2 percentage points on auto loans. Moreover, Fellowes finds that it is much more expensive to insure a car in lower-income neighborhoods than in higher-income neighborhoods. Davis (2009) finds that low-income borrowers are more likely to be involved in scams and as a result pay interest rates 5 percentage points higher than similarly situated counterparts. Predatory lending not only increases LMI families' debt burden, it may also increase the probability of delinquency, damaging their credit condition even further.

[24] The share of individuals in LMI areas with auto loans is much higher in Massachusetts than in the United States as a whole. For U.S. figures, see http://www.philadelphiafed.org/community-development/data-dashboard/consumer-credit-data.cfm.

[25] The difference in median balance between LMI and MUI tracts was statistically significant at the 99 percent level of confidence in 2Q2012.

[26] Median monthly payment on MUI tracts was $293. The difference in median payment between LMI and MUI tracts was statistically significant at the 99 percent level of confidence in 2Q2012 and 2Q2006.

Mortgage loans

Massachusetts data from the FRBNY CCP show that, among consumers with active credit reports, the share of individuals with mortgages was more than 50 percent higher in MUI neighborhoods (41.4 percent) than in LMI (26.9 percent) as of 2Q0212. The number of individuals with mortgages declined about 3 percent both in LMI and MUI neighborhoods from 2Q2006 to 2Q2012. However, because the total number of active accounts declined more sharply in LMI areas than in MUI neighborhoods, the share of individuals with active credit records that had mortgages went up slightly in LMI areas while it stayed the same in MUI areas. It is worth noting that the FRBNY CCP data set contains information on the entire stock of mortgages, as opposed to the HMDA data set, which has information on new originations.[27] HMDA data indicate that mortgage originations plummeted from 2006 to 2011, especially in LMI census tracts. In Massachusetts, first-lien home-purchase mortgages[28] went down 61.0 percent in LMI census tracts from 2006 to 2011, compared with a 37.2 percent decline in MUI tracts.[29]

FRBNY CCP data show that median monthly mortgages payments increased 12.0 percent in Massachusetts LMI neighborhoods, from $791 in 2006 to $886 in 2012.[30] It is not possible to determine what portion of family's budgets those payments represent because the FRBNY CCP does not provide information on panel participants' income. However, we know from census data that the percentage of families that are "housing cost burdened," meaning that they spend more than 30 percent of their income on housing, is much higher in LMI areas

[27] Nationwide, mortgage trends have changed drastically since the Great Recession. found that until 2008, the net pay-down on mortgage debt was negative because the increases in debt associated with cash-out refinances, second mortgages, and home equity lines of credit exceeded total mortgage principal payments. Since then, consumers have accelerated paying down mortgage debt. Prepaying and refinancing were more frequently reported by higher-income individuals and college graduates.

[28] For owner-occupied, one- to four-family, site-built properties.

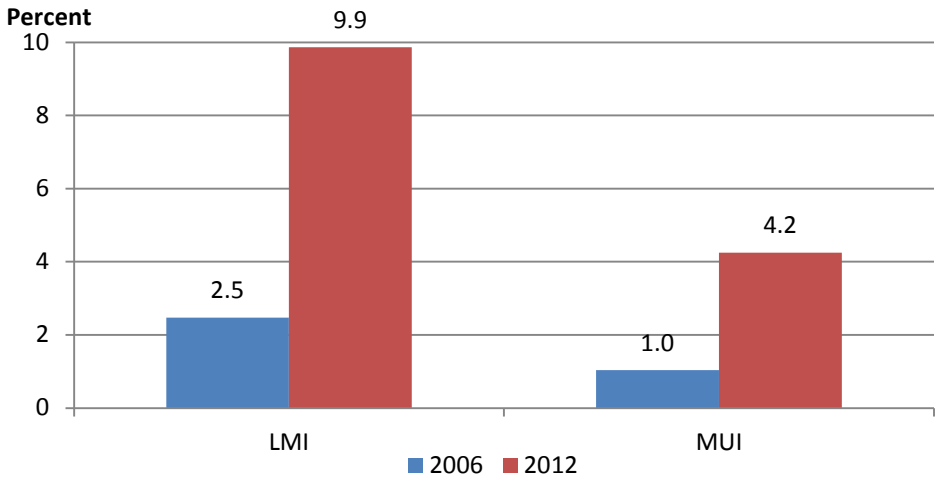
[29] For detailed tables from HMDA data in New England, go to www.bostonfed.org/commdev/regulatory-resources/hmda.

[30] In MUI census tracts, mortgage payments went up 15.5 percent, from $861 in 2006 to $994 in 2012.

than in MUI tracts. In 2009, 46.5 percent of homeowners in LMI areas in Massachusetts were housing cost burdened, compared with 33.3 percent in MUI tracts.[31]

Delinquency rates and foreclosures skyrocketed during the housing bust. Mortgage delinquency rates were more than four times higher in 2012 than in 2006.[32] Furthermore, the percentage of borrowers whose mortgages were 60 days or more overdue was more than twice as large in LMI areas as in MUI tracts (9.9 percent as opposed to 4.2 percent in 2012) (Figure 5).[33]

Figure 5. Mortgage delinquency rates in Massachusetts by neighborhood income, 2Q2006 and 2Q2012



Source: NY Fed/Equifax

[31] Data from the 2000 census and from the American Community Survey's 2005–2009 five-year estimates. The Joint Center for Housing Studies (2012) reports that in 2010, severely cost-burdened families in the bottom expenditure quartile had just $619 per month left over on average for all other needs after paying for housing.
[32] Delinquency rates are in line with findings from the Mortgage Bankers Association that indicate that mortgage delinquency rates went up from 1.5 percent in 2006 to 5.0 percent in 2012 in Massachusetts. In the United States as a whole, delinquency rates increased from 2.0 percent to 4.3 percent in 2012.
[33] For details about mortgage delinquency rates by four neighborhood income categories, see Appendix 5.

Student loans

The difference in educational attainment in Massachusetts between LMI and MUI neighborhoods is striking. While, on average, 43.5 percent of residents 25 years and older had bachelor's degrees in MUI neighborhoods, only 21.3 percent did in LMI neighborhoods as of 2009.[34] Meanwhile, student loan debt is the only type of account that is more prevalent among consumers with active credit reports living in LMI neighborhoods than in MUI areas. As of 2Q2012, 17.7 percent of LMI areas residents with active credit reports had student loans, compared with 15.4 percent of consumers in MUI areas. [35] In Massachusetts, the median student loan balance in LMI census tracts ($14,165) was 14.9 percent lower than in MUI areas ($16,281).[36] However, the difference in median monthly payments between LMI ($214) and MUI areas ($222) was not statistically significant. Lower median student loan balance in LMI tracts may be partly explained by the fact that LMI students will go, on average, to lower cost higher education alternatives such as public two-year colleges. On the other hand, lower-income students may receive less financial support from their families and thus need larger loans to pay for college.

Student loans have become a source of increasing concern because of the rapid increase in total debt and default rates and the way those factors might affect low-income families. Edmiston, Brooks, and Shepelwich (2012) note that in the United States, student loan debt has been increasing at a rate of 13.9 percent annually, from $364 billion in 2005 to $904 billion 2012. Although average debt per student has gone up, most of the increase in aggregate debt has been driven by a rise in the number of borrowers. They point out that in 2009–2010, about 50 percent of students in four-year public colleges and universities were recipients of federal

[34] The figures are from 2005–2009 American Community Survey five-year estimates. For more information about socioeconomic indicators in LMI and MUI neighborhoods for New England states, cities, and towns, go to www.bostonfed.org/citydata.

[35] It is not possible to make comparisons with 2006 because significant revisions were made in the FRBNY CCP's student loan data in 2011.

[36] Some of these trends might be explained in part by the difference in age distribution in LMI and MUI areas. In 2009, average median age in LMI areas is 34 compared to 41 years in MUI areas. For more details on age distribution, see Appendix 7.

student loans, a rate that jumps to 64 percent for students in private nonprofit institutions and 86 percent for those in for-profit institutions.[37]

The increase in total debt could be interpreted positively, indicating that more individuals are pursuing higher education, which should improve their chances of getting higher-paying jobs in the future. What is worrisome is the high student loan default rate, chiefly in lower-income areas. If students default on student loans, their access to other types of credit is likely to be constrained, which will have negative effects on defaulters' future financial stability. Student loan default rates are higher than default rates for any other type of debt. In Massachusetts, 17.9 percent of individuals with student loan debt living in LMI areas had at least one account 60 days or more past due, compared with 8.8 percent in MUI tracts (Figure 5). Edmiston, Brooks, and Shepelwich (2012) highlight that borrowers who drop out of school make up a substantial share of all defaulted borrowers, and that less than 60 percent of those who enroll in a postsecondary institution complete their program of study within six years. Individuals who have student debt but who are not able to complete their degrees face significant challenges as college graduates earn substantially more than individuals with some college but no degree. For instance, in 2Q2012, the weekly average earnings for individuals 25 years and over with a bachelor's degree was $1,164, compared with $754 for individuals with some college or an associate's degree.[38] Still, workers with some college earned 14.4 percent more than employees with high school but no college and 56.1 percent more than individuals who lacked a high school diploma. However, as Edmiston, Brooks, and Shepelwich (2012) note, delinquency rates may understate the problem because loans in forbearance are included in the numbers of loans outstanding, but are not included in the number of loans currently past due.

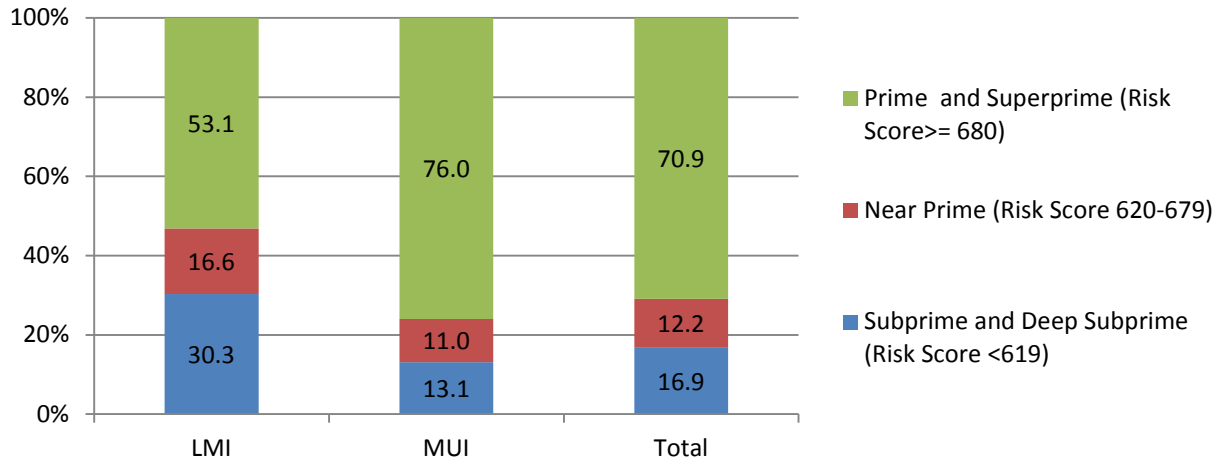
[37] The figure for two-year public colleges was 24 percent.
[38] Weekly and hourly earnings data are from the Current Population Survey; data extracted on October 4, 2012. http://www.bls.gov/cps/

Credit Scores

Credit scores are widely used to assess how likely a borrower is to default. They therefore have direct impact on denial rates and loan pricing. Risk scores in the FRBNY CCP data range from 280 to 850 (people with higher scores are considered less risky than those with lower scores).[39] Credit scores are affected by payment history, amounts owed, length of credit history, new credit applications, and types of credit used.[40] Scores are strongly correlated with demographic characteristics. For example, older consumers and higher-income earners tend to have higher scores (Stavins and Hayashi 2012).

In Massachusetts, as of 2Q2012, 30.3 percent of individuals living in LMI areas had subprime and deep subprime risk scores[41], compared to 13.1 percent of those living in MUI census tracts[42] (Figure 7; see Appendix 8 for a map of the percentage of consumers with subprime credit scores by zip code).

Figure 7. Percentage of consumers with subprime, near prime, and prime credit scores by area income, 2Q2012



Source: NY Fed/Equifax

[39] The reported score does not exactly match the widely used FICO scores, which range from 300 to 850, because it is based on different algorithm. However, like the FICO score, it reflects the borrower's credit risk.
[40] See http://www.myfico.com/CreditEducation/WhatsInYourScore.aspx.
[41] That is scores below 680.
[42] Appendix 6 shows this information for four neighborhood income categories. It is expected that over time, credit scores in the FRBNY CCP improve as individuals who have a credit report get older. From 2006 to 2012, median credit scores in both LMI and MUI areas increased slightly (1 percent).

Low credit scores significantly limit consumers' access to credit and have negative consequences in other areas as well, from job access (Traub 2012) to insurance costs (Kabler 2004) and utility prices.

Traub (2012) argues that bad credit history can have negative effects on employment prospects. Her analysis of a survey by the Society for Human Resource Management (SHRM) shows that in 2010, 60 percent of SHRM's members checked employees' credit history when hiring for some or all positions. Another survey[43] finds that employment credit checks constitute a barrier to employment for LMI workers, even though the evidence of a link between credit history and work performance is weak. Survey respondents who were unemployed reported that credit checks by potential employers were common, and job seekers reported being denied jobs because of them. In response to these negative effects, some states have outlawed certain nontraditional uses of credit scores and reports (Smith and Duda 2010). The survey also finds that having unpaid medical bills or medical debt is one of the leading causes of bad credit among survey respondents who say their credit is poor.

Avery, Brevoort, and Canner (2012) investigate whether credit scores are inferior signals of creditworthiness for minority borrowers, given that these borrowers tend to use nontraditional sources of credit, such as payday lenders, that do not report information to the credit bureaus. They show that the gap in credit scores between blacks and non-Hispanic whites emerges early. Avery, Brevoort, and Canner recommend that "efforts to 'close the gap' between racial and ethnic groups may need to start a very early age, perhaps with high school financial literacy education" (p.25).

In addition to having low credit scores, LMI consumers tend to underestimate their creditworthiness, further limiting their access to favorable credit terms. Levinger, Benton, and Meier (2011) use a survey and credit report data from a unique sample of LMI individuals to study consumers' knowledge of their own credit situation. They find that 73 percent of participants underestimated their scores, and that after controlling for credit score and

[43] Dēmos's 2012 National Survey on Credit Card Debt in Low- and Middle- Income Households, cited by Traub (2012).

sociodemographic variables, consumers who underestimated their creditworthiness reported having credit cards with higher interest rates.

Conclusion

This report highlights the difference in credit conditions in LMI and MUI areas in Massachusetts. Keeping track of credit conditions will help us understand whether disparities are changing over time in the region. It is important to address the disproportionately high default rates in low-income areas. High incidence of student loans and relatively high delinquency rates on those loans in LMI neighborhoods are a source of concern.

Other studies have shown that families living in LMI neighborhoods tend to pay more for mortgages and auto loans. In part, this is caused by low credit scores that reflect higher probability of default, and in part it is due to lack of affordable credit products or lack of awareness of the availability of good credit options. One way to address the first issue is to promote programs that increase the understanding of the importance of credit scores at an early age, as research has shown that gaps in credit scores between racial and ethnic groups emerge early on in people's credit history (Avery, Brevoort, and Canner 2012). Financial education focusing on a better understanding of credit scores and their implications can have positive long-term effects. At the same time, improving access to affordable credit products would provide opportunities for LMI families to build better credit history, smooth their consumption, and improve their well-being.

A number of important issues that have direct impact on families' credit conditions were not addressed in this report. For instance, this analysis does not provide information on some types of debt that other studies have shown to be of particular importance—namely, medical debt. What are the best ways to address this increasing problem?[44]

This report also does not look at the other side of families' balance sheets: their ability to save and invest for the future and to have access to emergency funds. If we are to

[44]The Access Project's Medical Debt initiative has been bringing attention to this issue, but more needs to be done because of the severe consequences that medical debt can have for low-income families. See http://www.accessproject.org/new/pages/medicalDebt.php.

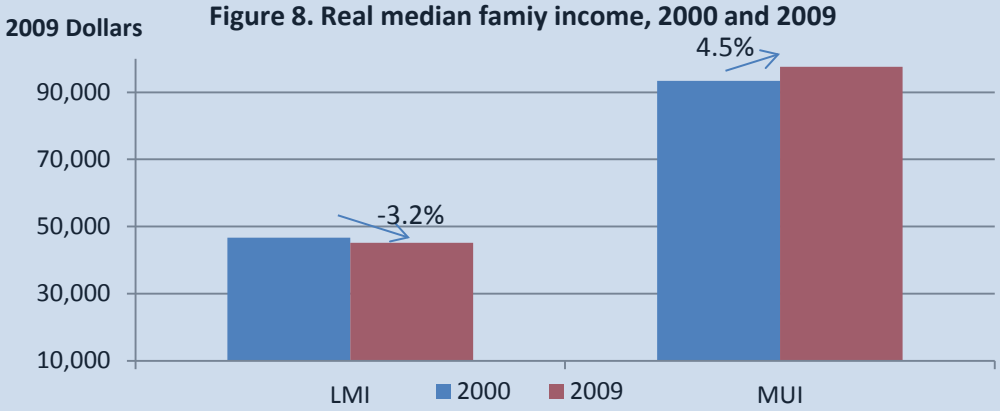
implement policies that promote financial stability for LMI populations, we must get a better understanding of their assets, liabilities, and cash flow. The U.S Financial Diaries project, which tracks the financial lives of 200 LMI households, is an important step forward in trying to understand the complexity of low-income families' finances.[45]

[45] See http://www.usfinancialdiaries.org/.

Box 1. Census Tract Income Composition in Massachusetts

As of 2009, average median family income was twice as high in MUI census tracts ($97,629) as in LMI tracts ($45,167). Moreover, real average median family income (in 2009 dollars) increased 4.5 percent from 2000 to 2009 in MUI neighborhoods, while it went down 3.2 percent in LMI neighborhoods (Figure 8).

Figure 8. Real median famiy income, 2000 and 2009



Source: U.S. Census Bureau. 2000 Decennial Census. American Community Survey 5-year

In Massachusetts, from 2000 to 2009, the number of lower-income tracts (with median family income below 50 percent of their MSA's median family income) increased by 37.7 percent (Table 1). Interestingly, the number of tracts in the highest income category (120 percent of MSA's median family income) also increased, albeit by a lower margin (11.9 percent). Meanwhile, the number of moderate and middle income tracts decreased 6.8 and 9.7 percent, respectively.[46] This trend is a sign of poverty concentration in Massachusetts. Increasing geographic segregation limits upward mobility for low-income families.[47] Forman and Koch (2012) point out that across Massachusetts, "middle-income neighborhoods have been replaced by both poor and affluent neighborhoods over the last two decades" as "families at the top of the income distribution geographically separate themselves as they become more affluent" (p. 24). A number of studies have shown that in addition to geographic segregation, disparities between low and high earners have increased in Massachusetts (Loveland et al. 2008; Nolan and Wise 2012; Sum et al. 2011). Sum et al. (2011) note that "over the past 50 years, Massachusetts has moved from one of the most economically egalitarian states to one of the most unequal" (p.21).

[46] Moderate-income tracts have median family income between 50 percent and 80 percent of their MSA's median family income, and middle-income tracts have median family income between 80 percent and 120 percent of their MSA's median family income. In 2009, median family income in Massachusetts ranged from $87,200 in the Boston MSA to $65,500 in the Springfield MSA.

[47] Chetty et al. (2013) show that areas in which low-income individuals were residentially segregated from middle-income individuals were likely to have low rates of upward mobility.

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Appendix 1

Number of individuals in FRBNY CCP dataset by type of account and neighborhood income (Massachusetts)

	Income Category (Tract's mfi/MSA's mfi)									
	<50%		50%–80%		80%–120%		>120%		Total	
	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012
Total	14,084	12,142	37,690	34,245	102,027	96,984	67,980	66,065	221,781	209,436
Credit card	11,362	9,242	31,663	27,542	89,246	83,225	60,759	58,851	193,030	178,860
HELOC	663	539	3,081	2,503	16,036	13,135	14,990	12,823	34,770	29,000
Student	1,732	2,209	4,730	6,011	11,474	15,663	7,145	9,485	25,081	33,368
Auto	3,256	3,145	10,411	10,115	30,660	30,102	18,583	18,869	62,910	62,231
Mortgage	2,544	2,419	10,382	10,061	39,424	38,204	30,287	29,310	82,637	79,994
Other	9,239	7,322	26,013	21,474	73,671	62,533	49,155	41,539	158,078	132,868

Estimated number of consumers with credit reports by type of account and neighborhood income (Massachusetts)

	Income Category (Tract's mfi/MSA's mfi)									
	<50%		50%–80%		80%–120%		>120%		Total	
	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012
Total	281,680	242,840	753,800	684,900	2,040,540	1,939,680	1,359,600	1,321,300	4,435,620	4,188,720
Credit card	227,240	184,840	633,260	550,840	1,784,920	1,664,500	1,215,180	1,177,020	3,860,600	3,577,200
HELOC	13,260	10,780	61,620	50,060	320,720	262,700	299,800	256,460	695,400	580,000
Student	34,640	44,180	94,600	120,220	229,480	313,260	142,900	189,700	501,620	667,360
Auto	65,120	62,900	208,220	202,300	613,200	602,040	371,660	377,380	1,258,200	1,244,620
Mortgage	50,880	48,380	207,640	201,220	788,480	764,080	605,740	586,200	1,652,740	1,599,880
Other	184,780	146,440	520,260	429,480	1,473,420	1,250,660	983,100	830,780	3,161,560	2,657,360

Source: New York Fed/Equifax 2Q2006 and 2Q2012

Number of consumers with at least one account as a percentage of total consumers with active credit reports by type of account and neighbordhood income (Massachusetts)

	Income Category (Tract's mfi/MSA's mfi)									
	<50%		50%–80%		80%–120%		>120%		Total	
	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012
Total	100	100	100	100	100	100	100	100	100	100
Credit card	81.0	76.1	84.0	80.4	87.0	85.8	89.4	89.1	87.0	85.4
HELOC	5.0	4.4	8.0	7.3	16.0	13.5	22.1	19.4	15.7	13.8
Student	na	18.2	na	17.6	na	16.2	na	14.4	na	15.9
Auto	23.0	25.9	28.0	29.5	30.0	31.0	27.3	28.6	28.4	29.7
Mortgage	18.0	19.9	28.0	29.4	39.0	39.4	44.6	44.4	37.3	38.2
Other	66.0	60.3	69.0	62.7	72.0	64.5	72.3	62.9	71.3	63.4

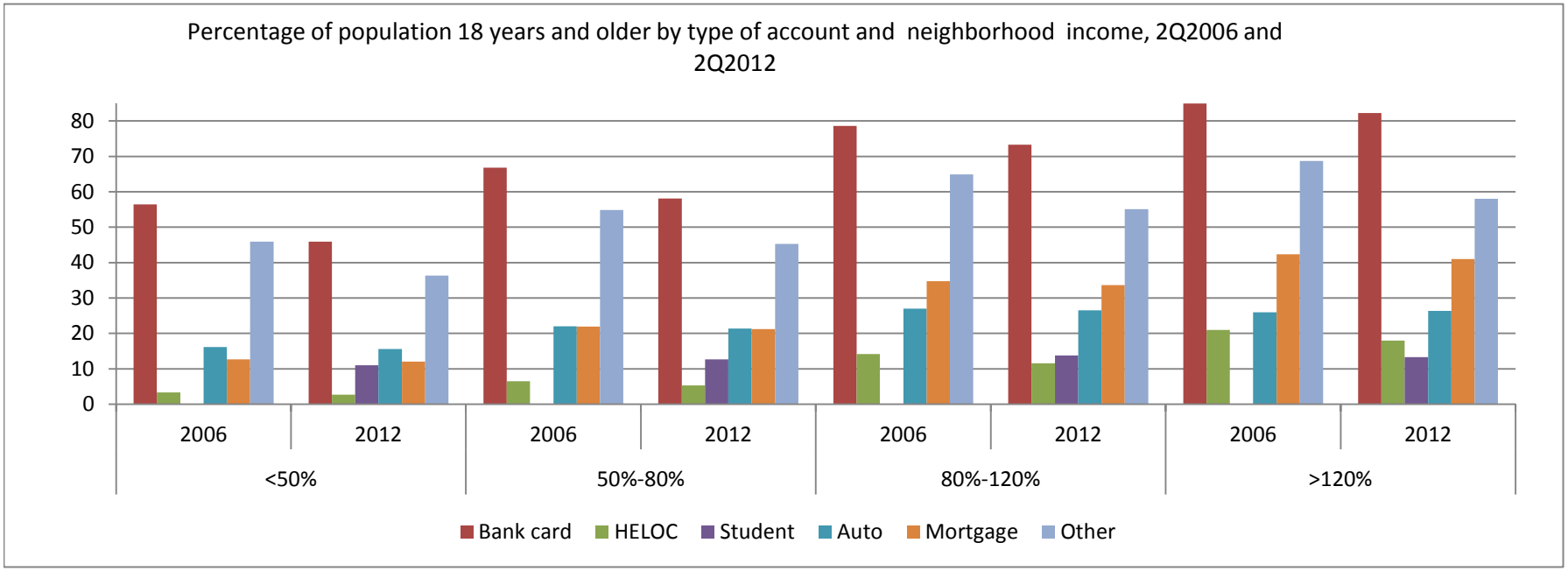
Source: New York Fed/Equifax 2Q2006 and 2Q2012

Appendix 2

Number of consumers with at least one account as a percent of population 18 years and older by type of account and neighbordhood income in Massachusetts

	Income Category (Tract's mfi/MSA's mfi)									
	<50%		50%–80%		80%–120%		>120%		Total	
	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012
Total	69.9	60.3	79.5	72.2	89.9	85.4	95.0	92.3	87.8	82.9
Credit card	56.4	45.9	66.8	58.1	78.6	73.3	84.9	82.2	76.4	70.8
HELOC	3.3	2.7	6.5	5.3	14.1	11.6	20.9	17.9	13.8	11.5
Student	na	11.0	na	12.7	na	13.8	na	13.3	9.9	13.2
Auto	16.2	15.6	22.0	21.3	27.0	26.5	26.0	26.4	24.9	24.6
Mortgage	12.6	12.0	21.9	21.2	34.7	33.7	42.3	41.0	32.7	31.7
Other	45.9	36.4	54.9	45.3	64.9	55.1	68.7	58.0	62.6	52.6

Note: Population based on 2005-2009 American Community Survey 5-year estimates



Source: New York Fed/Equifax 2Q2006 and 2Q2012

Appendix 3

Median balance by type of account and neighborhood income in Massachusetts

	Income Category (Tract's mfi/MSA's mfi)													
	<50%		50%–80%		80%–120%		>120%		Total		<80% (LMI)		>80% (MUI)	
	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012
Total	3,365	7,086	6,549	12,228	12,872	20,808	20,053	30,066	11,343	19,426	5,363	10,624	15,032	24,026
Credit card	1,262	1,123	1,341	1,276	1,319	1,368	1,390	1,505	1,340	1,380	1,317	1,234	1,347	1,425
HELOC	13,001	17,100	13,586	16,036	12,921	15,703	13,801	18,172	13,348	16,869	13,528	16,293	13,322	16,932
Student	na	12,861	na	14,670	na	15,500	na	17,765	na	15,779	na	14,165	na	16,281
Auto	7,720	7,562	7,978	7,839	8,028	8,133	8,115	8,622	8,034	8,190	7,930	7,763	8,059	8,310
Mortgage	106,452	114,348	92,215	103,857	92,208	107,936	111,103	131,146	98,697	115,459	94,591	105,310	99,318	117,572
Other	300	277	217	200	86	84	22	25	83	80	244	218	55	56

Source: New York Fed/Equifax 2Q2006 and 2Q2012

Note: Median of consumers who have a positive balance in the account. The difference between LMI and MUI is statistically significant for all accounts except for HELOCs. The p-values for the Pearson chi-squared test are 0.6 and 0.28 for HELOCs in 2006 and 2012, respectively, 0.09 for bank cards in 2012, and 0.11 for auto loans in 2006. The other accounts have p -values of 0.00.

Mean balance by type of account and area income in Massachusetts

	Income Category (Tract's mfi/MSA's mfi)													
	<50%		50%–80%		80%–120%		>120%		Total		<80% (LMI)		>80% (MUI)	
	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012
Total	34,026	41,671	43,643	52,552	58,436	68,984	80,907	95,342	61,259	73,028	41,027	49,704	67,421	79,664
Credit card	3,782	3,438	4,292	4,206	4,746	4,681	5,047	5,077	4,710	4,674	4,157	4,013	4,868	4,845
HELOC	25,172	35,386	23,292	28,589	22,841	29,879	29,211	39,600	25,672	34,178	23,625	29,792	25,919	34,688
Student	na	24,729	na	26,139	na	27,038	na	30,059	na	27,582	na	25,760	na	28,177
Auto	10,920	9,714	10,458	9,907	10,528	10,275	10,630	11,332	10,567	10,508	10,569	10,682	10,566	9,862
Mortgage	143,095	142,636	121,493	127,446	118,012	130,585	146,090	165,969	129,513	143,519	125,745	145,946	130,211	130,390
Other	1,986	1,643	2,310	1,790	2,333	1,638	2,314	1,692	2,303	1,680	2,225	1,659	2,325	1,752

Source: New York Fed/Equifax 2Q2006 and 2Q2012

Note: Mean of consumers who have positive balance in the account. The difference between LMI and MUI is statistically significant for all accounts except for “other” in 2006 and 2012 and auto loans in 2006. The p-values for the Pearson chi-squared test are 0.17 and 0.29 for other accounts in 2006 and 2012, respectively, 0.01 for HELOCs in 2006, and 0.99 for auto loans in 2006. The other accounts have p-values of 0.00.

Appendix 4

Median monthly payments (in dollars) by type of account and neighborhood income in Massachusetts

Income Category (Tract's mfi/MSA's mfi)														
	<50%		50%–80%		80%–120%		>120%		Total		<80% (LMI)		>80% (MUI)	
	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012
Total	162	245	253	347	389	479	519	623	364	463	224	316	429	526
Credit card	50	47	49	50	45	49	44	48	45	49	49	50	45	49
HELOC	139	95	138	84	127	82	134	92	131	86	138	87	129	86
Student	na	205	na	216	na	215	na	234	na	220	0	214	0	222
Auto	276	288	277	283	282	285	299	305	286	291	277	284	288	293
Mortgage	868	936	781	874	791	913	962	1114	851	977	791	886	861	994
Other	25	25	20	25	10	25	5	12	10	25	20	20	10	25

Source: New York Fed/Equifax 2Q2006 and 2Q2012

Note: Median of consumers who have positive balance in the account. The difference between LMI and MUI is statistically significant for all accounts except for HELOCs. The p values for the Pearson chi-squared test are 0.03 and 0.81 for HELOCs in 2006 and 2012, respectively, 0.06 for bank cards in 2012, and 0.02 for student loans in 2012. The other accounts have p values of 0.00.

Mean monthly payments by type of account and area income in Massachusetts

Income Category (Tract's mfi/MSA's mfi)														
	<50%		50%–80%		80%–120%		>120$		Total		<80% (LMI)		>80% (MUI)	
	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012
Total	530	816	665	952	805	1059	1125	1414	862	1139	629	917	933	1203
Credit card	181	252	192	321	240	358	373	535	271	405	190	304	294	431
HELOC	328	341	360	296	315	333	422	460	365	387	354	304	367	396
Student	na	1139	na	1093	na	693	na	564	na	758	29	1105	29	644
Auto	376	345	354	340	341	330	362	376	351	346	359	341	349	347
Mortgage	1136	1180	1085	1084	992	1117	1233	1380	1096	1211	1095	1103	1097	1231
Other	113	96	106	77	78	61	65	56	80	64	108	82	72	59

Source: New York Fed/Equifax 2Q2006 and 2Q2012

Note: Mean of consumers who have positive balance in the account. The difference between LMI and MUI is statistically significant for all accounts except for HELOCs in 2006 and 2012, mortgages in 2006, and auto loans in 2012. The p-values for the Pearson chi-squared test are 0.43 and 0.73 for HELOCs in 2006 and 2012, respectively, 0.02 and 0.11 for auto loans in 2006 and 2012, respectively, and 0.94 for mortgages in 2006. The other accounts have p-values of 0.00.

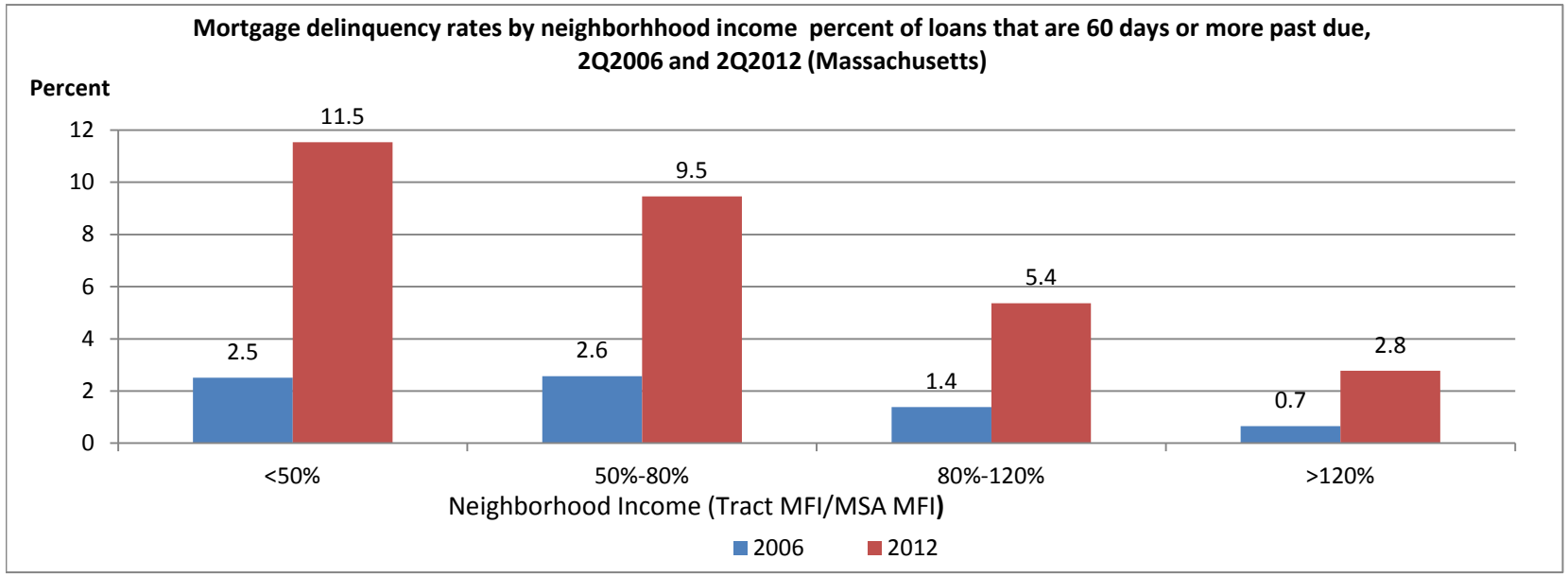
Appendix 5

Delinquency rates by type of account and neighborhood income in Massachusetts

Percentage of individuals with credit reports who had at least one account that was 60 days or more past due

	Income Category (Tract's mfi/MSA's mfi)													
	<50%		50%–80%		80%–120%		>120%		Total		<80% (LMI)		>80% (MUI)	
	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012
Credit card	25.2	19.5	17.0	15.2	9.0	8.7	5.3	5.0	10.1	9.0	19.2	16.3	7.5	7.1
HELOC	0.9	5.8	0.8	3.8	0.4	2.1	0.2	1.3	0.4	2.0	0.8	4.1	0.3	1.7
Student	na	20.9	na	16.8	na	10.2	na	6.5		11.0	na	17.9	na	8.8
Auto	10.4	13.7	7.0	9.7	3.5	5.0	1.9	2.8	4.0	5.5	7.8	10.7	2.9	4.1
Mortgage	2.5	11.5	2.6	9.5	1.4	5.4	0.7	2.8	1.3	5.1	2.6	9.9	1.1	4.2
Other	18.2	16.4	12.5	12.3	6.3	7.0	3.4	3.8	7.1	7.4	14.0	13.3	5.2	5.7

Source: New York Fed/Equifax 2Q2006 and 2Q2012



Note: Delinquency is defined as accounts that are 60 days or more past due.

Source: New York Fed/Equifax 2Q2006 and 2Q2012

Appendix 6

Percentage of consumers with subprime, near prime and prime credit scores by income category

Income Category (Tract's mfi/MSA's mfi)														
	<50%		50%–80%		80%–120%		>120%		Total		<80% (LMI)		>80% (MUI)	
	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012	2006	2012
Sub Prime and Deep Subprime (Risk Score < 619)	41	36	29	28	16	16	9	9	18	17	32	30	14	13
Near Prime (Risk Score 620-679)	18	18	16	16	12	12	10	9	12	12	16	17	11	11
Prime and Superprime (Risk Score ≥ 680)	42	46	55	56	71	72	81	82	70	71	51	53	75	76
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mean credit score	650	663	681	686	720	725	744	750	716	723	684	691	760	767

Source: New York Fed/Equifax 2Q2006 and 2Q2012

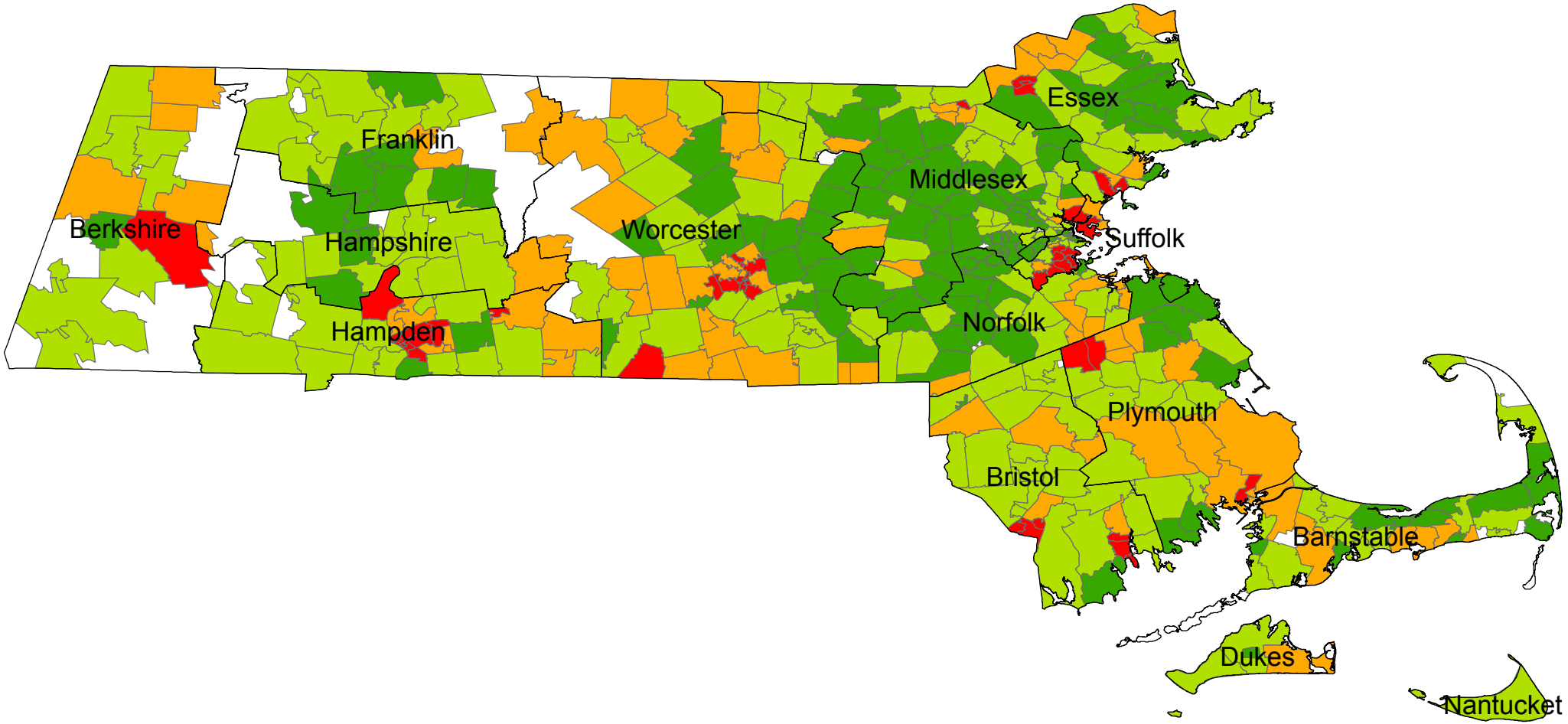
Appendix 7

Percentage of population by age and income category

Income Category (Tract's mfi/MSA's mfi)	Age Category					
	20 to 34	35 to 44	45 to 64	18over	65 to over	Average median age
<50%	26.0	13.7	20.0	74.0	9.1	32
50%–80%	25.2	14.6	23.0	78.0	12.5	36
80%–120%	19.1	15.1	27.7	79.4	14.5	41
>120%	15.0	15.5	29.1	76.1	13.5	41
<80% (LMI)	25.4	14.3	22.1	76.8	11.4	34
>80% (MUI)	17.5	15.2	28.2	78.0	14.1	41

Source: 2005-2009 American Community Survey 5-year estimates

Appendix 8 Percentage of consumers with subprime credit scores by Zip Code in Massachusetts, 2Q2012



Source: New York Fed/Equifax