Subprime lending establishments often use signs such as these to promise quick and easy cash, in order to lure prospective customers.
Introduction

Subprime Lending

The subprime financial market is usually differentiated from the primary market by characteristics such as high interest rates, high points and fees, prepayment penalties, and high rejection rates (Cutts 3). Despite these generally negative attributes, the subprime market has served a key role in equity liquidity, providing many with much needed access to personal equity. This market provides a source of funds to credit-impaired borrowers who are unable to obtain credit in the primary market, thereby expanding the quantity of lendable funds previously truncated by credit rationing.

Credit rationing, the systematic approval and rejection of potential borrowers, results from imperfect information about the potential actions and characteristics of borrowers. As the risk a borrower carries increases, the lenders' revenue decreases; this means that as a bank increases the price of its money (interest rates), it actually lowers its revenue as higher interest rates attract riskier consumers and deter risk-averse borrowers. Faced with this adverse selection and lacking perfect information about an individual borrower's ability to repay, lenders formulate loan terms designed to induce the borrower to act in a specific way. Specifically, lenders offer below market interest rates in return for certain levels of collateral. The terms of the loan ultimately prevent the mortgage market from clearing, as high risk borrowers are unable to acquire low interest rate loans (Stiglitz 393). Supply of mortgages is restricted by specific qualifications such as collateral or credit history, which results in unfulfilled demand.
The subprime market offers a new dimension of credit allocation by introducing risk-based pricing. New developments in automated underwriting and the introduction of hundreds of new pricing options have significantly lowered the costs of serving borrowers with blemished credit histories (Belksy 5). Such blemishes could be the result of prior bankruptcies, possessing too few assets, variable or hard to document income, or unfamiliarity with the credit industry (HUD 2000, 31).

The subprime industry, a relatively young market starting in the early 1990s, has multiplied in recent years, growing from a $35 billion industry in 1994 to over $160 billion in 1999. Refinancings, which comprise a large portion of subprime loans, have increased more than nine fold, from 80,000 loans in 1993 to 790,000 in 1998 (HUD 2000). Such exponential growth has been primarily fueled by litigation, tax reform, and securitization. High interest rates in the early 1980s spurred litigation such as the Alternative Mortgage Transactions Parity Act of 1982 (AMTPA) and the Depository Institutions Deregulation and Monetary Control Act of 1980 (DIDMC). DIDMC preempted state usury ceilings, allowing for more expensive first lien loans by releasing interest rates and finance charges from state regulation. AMTPA removed state restrictions limiting loans to primarily fixed rate amortized mortgages. Balloon payments, adjusted annual rate mortgages, and non-amortizing loans became legal and encouraged as a means of increasing liquidity in the home mortgage market (McCoy and Engel 24). Both DIDMC and AMPTA allowed the subprime market to grow by permitting lenders to avoid state regulations and create loan instruments that would allow lenders to service borrowers with imperfect credit. The Tax Reform Act of 1986 prohibited deductions for interest paid on consumer loans, thereby increasing the attractiveness of home equity mortgages to consolidate consumer debt throughout the end of the 1980s (Johnson 15).

The end of the refinancing boom of the 1980s brought the subprime market onto the radar screens of mainstream banks, thrifts, and government sponsored entities (GSEs). The financial industry's increased interest in the subprime market and the simultaneous introduction of automated underwriting led to the securitization of the subprime market (FRB of Dallas). Securitization makes subprime loans more
profitable for lenders by decreasing risks and costs through diversification (McCoy and Engel 25). With lower risk and increased accessibility to capital markets, the subprime industry took off. Although the introduction of the secondary market adds stability and liquidity, it also complicates the industry by making state regulation considerably more difficult. Buyers in the secondary market typically buy mortgages originating in many different states, and non-uniform regulation may result in the secondary market refusing to buy mortgages from particular states, as was the case with Georgia. The lack of regulation, coupled with the enormous growth in the industry, has led to an increasing concern about unscrupulous lending practices, or what now has become known as predatory lending.

Predatory Lending and Regulation

Consumer advocates perceive predatory lending as a nothing short of an epidemic in America's cities. It is an emotionally charged issue that has serious social as well as economic costs. The word “predatory” suggests victimization and vulnerability, words which appeal to public sentiment but impede economic analysis of this practice.

The most challenging issue regarding predatory lending is defining the term itself. Even though predatory lending has been the subject of numerous national and state laws, there is no legal statute or regulation that specifically outlines what constitutes a predatory loan (HUD 2004). Recognition of a predatory loan relies primarily on anecdotal evidence. This results in vague definitions, such as one that identifies predatory lending as “any unfair credit practice that harms the borrower or supports a credit system that promotes inequality and poverty.” (Bradley 1) Some definitions offer more specific, detailed lists of certain practices that may be considered predatory, yet these lists are incomplete and often include individual practices which are perfectly legal under certain circumstances. Most all descriptions of predatory lending include words like “misleading,” “threatens,” “taking advantage of,” “manipulative,” “abusive,” and even “economic rape,” as well as financial jargon such as “stripping,” “flipping,” “stacking,” “prepayment penalties,” and “balloon payments,” underscoring the emotional and technical components of predatory
lending (Goldstein 7 & 15).

This paper will rely on the definition given by Patricia McCoy and Kathleen C. Engel of Cleveland-Marshall College of Law that has identified predatory lending through five symptoms of what is referred to as the "syndrome of abusive loan terms or practices." The majority of predatory loans can be said to include two or more of the following problems: (a) loans structured to result in seriously disproportionate net harm to borrowers (b) harmful rent seeking (c) loans involving fraud or deceptive practice (d) other forms of lack of transparency in loans that are not actionable as fraud (e) loans that require borrowers to waive meaningful legal redress (McCoy and Engel 6).

Predatory lending, a type of rent-seeking, is fed by lack of competition, inconsistent loan terminology, and financially unsophisticated consumers. Each of these factors is more often found in the subprime loan market than in the prime market. The level of homogeneity among prime lenders allows for more efficient and effective regulation, and though some predatory lending may occur in the primary market, the majority occurs within the subprime market. Despite the questionable effectiveness of legislation regulating the subprime market, existing and new federal legislation, as well as state legislation, is at the forefront of the anti-predatory lending campaign (Goldstein 23).

In general, marketing, underwriting procedures, and loan terms and agreements are relatively unsystematic and unrestricted within the subprime market. The boom in this market, coupled with the increased awareness of unfair and predatory lending practices, has stimulated legislative responses. Litigation attempting to curb predatory lending and increase transparency in the subprime mortgage market has grown almost as fast as the market itself. Recent amendments to acts regulating credit practices and debt collection by the Federal Trade Commission (FTC), a regulatory organization that works to ensure market efficiency and consumer protection, illustrates the expanding role the government is playing in the subprime mortgage industry. The FTC's dual responsibility to both protect consumers and ensure access to financial markets results in often conflicting directives. The Equal Credit Opportunity Act
exhibits this tension. This act, which ensures that borrowers are not discriminated against on the basis of age, race, color, national origin, gender, marital status, religion, or receipt of public aid, encompasses both redlining (the systematic denial of credit on the basis of discriminatory characteristics) as well as reverse redlining (the targeting of potential customers based on said characteristics) (Goldstein 23-24).

Federal Regulation of Predatory Lending

Specific to predatory lending are the Truth in Lending Act (TILA) and the Real Estate Settlement Procedures Act (RESPA). RESPA focuses primarily on proper and accurate settlement disclosure costs and also requires a notice before services are transferred. TILA outlines proper disclosure concerning annual percentage rate (APR) as well as payment amounts and schedules. Regulation Z, the Home Owners Equity Protection Act (HOEPA), was added to TILA in 1994. HOEPA places specific restrictions on “high-cost mortgages,” defined as closed-end mortgages not for acquisition or construction with APR greater than 10% above the treasury yield, and requires specific disclosures, waiting periods, and warnings. HOEPA also prohibits prepayment penalties, negative amortization, points added to refinanced loans, consolidated payments greater than two consecutive payments, and interest rates that increase following default (Goldstein 25-27). In December of 2001 HOEPA was amended; the rate-based trigger was lowered by 2% and verification of income and of the ability to repay was required (FRPR 2001).

State Regulation of Predatory Lending

Though extensive and comprehensive, federal consumer protection legislation has failed to provide relief. The relative ease with which these regulations can be avoided renders much of the legislation useless. Frustrated by the inadequacies of federal regulation and enforcement, states and even cities have begun to attack predatory lending by introducing local legislation. In 1999 North Carolina passed the first state statute specifically addressing predatory lending. The North Carolina law echoes much of the terminology of federal legislation but imposes stricter definition
of high-cost home loans and includes general prohibitions on all loans (Coalition for Responsible Lending). North Carolina’s self-proclaimed success encouraged other states to introduce their own legislation. Most notable was Georgia, which passed the Georgia Fair Lending Act (GFLA) in October of 2002. GFLA includes provisions that specifically address contractor/creditor relationships (a common perpetrator of predatory lending) and also places various restrictions on the APR and fees charged on loans. Unlike the North Carolina law, which failed to draw national attention, the GFLA drew quick responses from the Office of Thrift Supervision (OTS) as well as from the Office of Comptroller of Currency (OCC). On January 22, 2003, the OTS, whose responsibility it is to ensure a uniform national regulatory environment, issued a statement that the “GFLA provisions purporting to regulate the terms of credit, loan-related fees, disclosures, or the ability of a creditor to originate or refinance a loan,” are preempted (OTS 2003). On August 5, 2003, the OCC issued a final rule that underscored its authority of preemption and its right to over-ride any legislation that could obstruct, impair, or condition a national bank’s exercise of lending, deposit-taking, or other powers granted by Federal Law. The OCC rule did include two new provisions in response to predatory lending concerns. Prohibitions were instituted against loans based on foreclosure value without regard to repayment capacity and against any national bank engaging in practices considered unfair or deceptive under the FTC Act. (OCC 2004).

Regardless of the legitimacy or practicality of the actions taken by the U.S. Department of the Treasury, the OCC and OTS have made it clear that individual state regulation is not the ultimate solution to the problem of predatory lending. Following these two rulings concerning GFLA, many states, including Tennessee, have aborted efforts to produce stricter anti-predatory lending legislation.

The national government has suggested that more and better federal legislation is needed. HUD, The United States Department of Housing and Urban Development, recommends new laws to address consumer literacy and disclosure, harmful sales practices, abusive terms and conditions, and market structure (HUD 2000). Yet, continual amending of existing laws and the introduction of new laws does not seem
to be working. Increasing bureaucracy and complicating the mortgage procedure with additional forms and procedures does not aid the victim at hand. The gray cloud that surrounds the practices and abuses considered predatory has proven to be a very difficult target for legislation to hit.

Within all known practices and characteristics of predatory lending is an element of victimization. Whether in regards to fraudulent practices, failure to disclose, or abusive intent, the very nature of predatory lending assumes the presence of a victim. Preying on naivete and an information gap allows predatory lenders to excise a profit (or economic rent) in absence of perfect competition (McCoy and Engel 32-33). The lack of financial sophistication and general ignorance about credit and the mortgage industry provide many consumers no known alternative to the subprime lenders that flood low-to-middle income neighborhoods with marketing. The gap in education between subprime and prime borrowers is perpetuated by the absence of mainstream banking relationships in low-to-middle income neighborhoods. More than 56 million people have no relationship with a financial service provider (Sawyer 4). Though a costly alternative, education must play an integral part in the elimination of predatory lending. Consumer awareness through education would provide a clearer view of a murky practice that is becoming more and more obscured by complex and competing legislation.

Role of Education

While most studies acknowledge that a key stimulus for predatory lenders is the borrower's general lack of education and understanding, few expand on the possibility for an education-based solution. On June 5, 2004, at the ceremonial signing of Tennessee predatory lending legislation that applied only to second mortgages on Habitat for Humanity homes, Senator Roscoe Dixon stated that Memphis was a very appropriate place to hold such a ceremony, as the poor education levels (one in four adults over 25 does not have a high school diploma) make the city a prime target for predatory lenders (McKenzie).

Lack of education is especially detrimental in the subprime lending industry
be exploited by predatory lenders. Many borrowers enter the subprime market after being persuaded by the aggressive marketing techniques of predatory lenders. Door-to-door advertising, flyer campaigns, and mass mailings make subprime lenders much more accessible to neighborhoods that do not have a bank branch. Face-to-face solicitation in the borrower's home creates the illusion of equal bargaining power and lures gullible borrowers into a false sense of security (McCoy & Engel 37).

As subprime consumers become more financially knowledgeable and savvy they will demand more services and better terms. This specialized demand will likely spark competition within the subprime industry, potentially leading to better servicing of the subprime consumer. With increased borrower education, the demand for more favorable terms and conditions will result in a more standardized and generally more competitive supply of subprime loan products. Forced to compete, lenders will educate themselves in an effort to satisfy borrowers' demands, and the subprime industry, which is still a relatively new industry, will become efficient.

Model

The majority of predatory lending takes place within the virtually unregulated and highly variable subprime market. The predatory lending market is recognized as a subset of the subprime market rather than a separate market or as a pervasive problem throughout the mortgage industry as a whole (Richardson 5). This model will thus look at entry into the subprime market as increasing the risk of predatory lending.

The model also assumes the presence of rational actors. In some cases entry into the subprime market is a perfectly rational decision. Poverty and lack of opportunity increases an individual's personal discount rate, resulting in accurate acceptance of high rates and fees placed on borrowings. For many living at or near the poverty line, the cost of postponing consumption (saving) outweighs any potential benefits (investment). This results in an extremely high personal discount rate, as money today is considerably more valuable than money in the future. Inadequate or poor credit history may also require that a borrower enter the subprime market in order
to restore access to the prime market. The subprime market is a legitimate and necessary source of liquidity for many, and though it is often an option of last resort, it remains a rational choice for some.

This model will explore the probability of entry into the subprime market as a function of education level, income, loan amount, race, age, and credit history in the Memphis MSA. This area, according to the 2000 U.S. Census, was defined as Shelby, Tipton, and Fayette Counties in Tennessee, as well as DeSoto County, Mississippi and Crittenden County, Arkansas. Memphis is located in Shelby County, Tennessee.

**Education**

The education level of an individual borrower affects the likelihood that he or she knows of alternatives to borrowing in the subprime market. A study by Freddie Mac determined that between 10 and 30% of subprime borrowers could have been serviced at a lower cost by the prime market. Unfamiliarity with the lending process and general ignorance initially leads many into the wrong market. The detriments of being uneducated are exacerbated by the complex terms and conditions included in subprime loans. Unlike prime loans, which are usually straight, fixed-rate mortgages, subprime loans utilize loan instruments and employ restrictions in order to reduce the heightened risk of subprime borrowers. Without adequate education, a borrower is unlikely fully to understand a loan agreement that contains elements such as balloon payments, adjustable rate mortgages, and prepayment penalties.

In addition to reducing the ability to understand the loan terms, the complexity of subprime loans also makes the discounting process difficult. As many terms of subprime mortgages are variable over time, accurately determining a discount rate can be very difficult. The true cost of a loan may be obscured by adjustable interest rates or the likelihood that a balloon payment will be refinanced. Even if the borrower has accurately assumed a high personal discount rate, when the loan itself does not have a clear discount rate, the affordability of the loan is uncertain.

Education is also an indication of a borrower’s credit history and will be used as a
substitute in this model. Credit history is affected by past economic decisions as well as shocks. Poor economic decisions that adversely affect credit history may result from ignorance about credit in general. Shocks such as death, disease, or unemployment that negatively impact credit history are understood as completely random events that cannot be explained in a model assuming rational actors. As education level accounts for ignorance and the effects of shocks are not included, the effect of credit history on entry into the subprime market will be accounted for by the inclusion of education levels.

**Income**

A study released by Housing and Urban development in 2000 reported that in 1998 subprime loans were three times more likely in low income neighborhoods than in higher income neighborhoods. While such loans accounted for 26% of total loans in low income neighborhoods, they represented only 7% of total loans in upper income neighborhoods. Income, a principal factor in the allocation of credit between the subprime and prime markets, is negatively correlated to the probability that a borrower will enter the subprime market.

**Loan Size**

Loans within the subprime market are smaller on average than loans made within the primary market. Looking at HMDA data from 1998, a joint report made by HUD showed that there was a $35,000 discrepancy between the median subprime and prime refinancing amounts. Home purchase loans were also on average $24,000 less within the subprime market (HUD 2000). The smaller values of loans in the subprime market are most likely representative of not only the limited capital and income of the borrower but also supply constraints. The elevated risk associated with subprime borrowers limits the amount of money lenders are willing to lend. Subprime lenders manage underwriting and collection costs by making smaller loans than prime lenders. This model predicts that the loan amount is negatively associated with the probability of entering the subprime market.
Mean Property Value

The average property value of census tracts is a measure of relative wealth or an indicator of collateral. Property value is likely to be highly correlated to education, loan amount, and the presence of prime lenders in a census tract. The introduction of an additional variable, highly correlated to existing variables, decreases the likelihood of omitted variable bias.

Race and Age

Despite the prevalence of anecdotal evidence that subprime lenders target elderly and minority homeowners, there is no expected correlation within this model. The denial or acceptance of credit based on race or age is an irrational decision which is not supported by a rational model. Rational decisive factors such as income and education levels should account for any perceived relationship between credit allocation and irrational discriminatory practices.

Empirical Analysis

Data Collection

The Federal Financial Institutions Examination Council's Home Mortgage Disclosure Act Raw Data from 2001 (henceforth HMDA 2001) provided the mean dollar amount of loans, applicant income, and mean property value, measured in $1,000 units and organized by census tract. The HMDA database also included the names of lending institutions that originated each of the 69,877 total loans in Shelby County in 2001.

Subprime lenders are identified yearly by the U.S. Department of Housing and Urban Development on the basis of industry sources, denial rates, refinance share, and lender name. HUD's 2001 list of subprime lenders was cross-referenced with lenders that reported to HMDA to calculate the number of subprime loans that originated in the Memphis MSA. There were 26,639 loans originated by subprime lenders in 2001.

The percentage of the population over the age of 65, the percentage of minorities
and education levels within census tract, were derived from the 2000 census, accessed online at www.census.gov. Education was measured in percentage points based on the number of citizens over the age of 25 with a high school degree, general equivalency degree or better. This data was gathered and organized from 185 census tracts from the Memphis Metropolitan Statistical Area.

Regression Equations

The following equation was estimated to determine the influence the various borrower characteristics have on the probability of originating a subprime loan.

1. Probability [subprime=1] = β₁ (income of applicant) + β₂ (loan amount) + β₃(percentage of population >65) + β₄ (percent minority) + β₅ (percent high school education or greater) + β₆ (mean property value) + ε

Given rational actors and profit maximizing firms, my model predicts a significant negative relationship between the number of subprime loans in a census tract and education, an applicant's income, the loan amount, the mean property value of the tract. The model predicts no significant relationship between the number of subprime loans and the percent minority in a census tract and the percent of population over 65.

Primary Regression Findings

The results of a probit regression for equation 1 are reported in Table 1.

- The income of a loan applicant is negatively related to the probability of originating a subprime loan. For every additional $1,000 a person earns, the likelihood of taking out a subprime loan decreases by .02%.
- The amount of the loan is negatively related to the probability of originating a subprime loan. For every additional $1,000 a person borrows, the likelihood of originating a subprime loan decreases by less than .01%. This diminutive relationship is likely due to the high correlation between loan amount and applicant income.
- The percentage of a census tract's population over the age of 65 is negatively related
to the probability of subprime mortgage origination. For every additional percentage point of citizens over 65, the likelihood of originating a subprime loan decreases by .76%. This negative correlation is contrary to the model's prediction that age would have no significant effect. This is also contrary to multiple studies that show a strongly positive relationship between subprime loans and the elderly. One explanation for the negative correlation might be that, through experience, the elderly have gained familiarity with and learned to distance themselves from subprime lenders. Conversely, it might be the case that the elderly are unfamiliar with the relatively new subprime market. This result could also be the result of sampling error, as no tract in the Memphis MSA had a total population 65 or older greater than 32.3%.

- The percentage of minorities in a census tract is positively correlated to the probability of subprime origination. For every one percentage point increase in minority within a census tract, the probability of subprime mortgage origination increases by .06%. This positive relationship is contrary to the zero significance the model predicted and supports previous findings that minorities are more likely to be targeted by and participate in the subprime market. The highly negative correlation between education and minority percentage (-.8205) did significantly reduce the relationship between minority percentage and subprime loan originations, yet there is still a significantly positive relationship. This could be the result of omitted variable bias or unaccounted for factors that impact credit history such as banking relationships or historical credit rationing.

- The percentage of a tract's population that has a high school degree or better is negatively related to the probability of subprime mortgage origination. For every percentage point increase in education, the likelihood of subprime mortgage origination decreases by .2%.

- The mean property value of a census tract is negatively correlated to the probability of subprime origination. For every additional $1,000 in the average property value in a tract, the likelihood of originating a subprime loan decreases by .13%.
TABLE I.

<table>
<thead>
<tr>
<th>Variables</th>
<th>$\hat{\beta}$</th>
<th>Z Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income of Applicant</td>
<td>-.0001522*</td>
<td>-5.34</td>
</tr>
<tr>
<td>Amount of Loan</td>
<td>-.0000639*</td>
<td>-2.02</td>
</tr>
<tr>
<td>Percentage of Population over 65</td>
<td>-.007553*</td>
<td>-16.01</td>
</tr>
<tr>
<td>Percent of Minority by Census Tract</td>
<td>.000597*</td>
<td>5.26</td>
</tr>
<tr>
<td>Percent over 25 with High school Degree or more</td>
<td>-.0019983*</td>
<td>-5.61</td>
</tr>
<tr>
<td>Mean Property Value of Census Tract</td>
<td>-.0013072*</td>
<td>-28.94</td>
</tr>
</tbody>
</table>

*significant at the 5% level

Neighborhood Effects and the Presence of Subprime and Prime Lenders

Subprime mortgage lenders, alternative financial providers such as pawn shops and title lenders, and prime lenders were identified and organized by census tract using the BellSouth Realpages accessed online. Subprime lenders were not limited to mortgage lenders listed by HUD but also included alternate financial providers. I used this information to create two new variables that measure neighborhood effects of the presence or absence of subprime and prime financial institutions. The first variable added was a count of the total number of subprime lenders per census tract. I estimated the following regression equation to determine the influence of the location of subprime lenders on the probability of originating a subprime loan.

2. Probability [subprime=1] = $\beta_1$ (income of applicant) + $\beta_2$ (loan amount) + $\beta_3$(percentage of population >65) + $\beta_4$ (percent minority) + $\beta_5$ (percent high school education or greater) + $\beta_6$ (mean property value) + $\beta_7$ (# of subprime lenders) + $\epsilon$

The second variable was share of prime lenders per census tract which is
the number of prime lenders divided by the total number of financial providers, accounting for tracts which had no banks at all. This variable was included in a third equation which was estimated to determine the influence the share of prime lenders in a census tract had on the probability of originating a subprime loan.

3. Probability \( \text{[subprime=1]} = \beta_1 \text{ (income of applicant)} + \beta_2 \text{ (loan amount)} + \beta_3 \text{ (percentage of population >65)} + \beta_4 \text{ (percent minority)} + \beta_5 \text{ (percent high school education or greater)} + \beta_6 \text{ (mean property value)} + \beta_7 \text{ (Percent Prime banks of total banks of subprime lenders)} + \epsilon \)

The number of subprime and prime lenders in a census tract is an indicator of the accessibility of the institution and reveals marketing tactics of these lenders. The model predicts a positive relationship between the number of subprime loans and the number of subprime lenders in a census tract. Additionally, the model predicts a negative significant relationship between the share of prime lenders in a tract relative to the total number of financial providers and the likelihood of a subprime loan. The absence of financial institutions altogether in a census tract indicates a relative disconnectedness with the financial markets and is likely to result in few overall loans within a census tract; consequently, census tracts with no banks are not included in the regression. Furthermore, the close correlation between the share of prime lenders in a tract to existing variables will further eliminate any omitted variable bias.

**Important Findings of Neighborhood Effects**

The results of estimating equations 2 and 3 are reported in Tables II and III.

- The number of subprime lenders within a census tract is positively related to the probability of subprime mortgage origination. For every additional subprime lender, the probability of originating a subprime loan increases by 1.78%. This supports the claim that subprime lenders locate in neighborhoods that exemplify the characteristics of subprime borrowers.
- The share of prime lenders in a tract relative to the total number of lenders is negatively related to the probability of subprime mortgage origination. For
every percentage point increase in the share of prime lenders, the probability of originating a subprime loan decreases by 3.31%.

- The percentage of minorities within a census tract has no significant effect on subprime mortgage originations. After accounting for the number and presence of subprime lenders, the significance of the minority percentage is diminished. This new evidence that race has no significant effect on subprime mortgages after accounting for loan amount, age, income, education, property value, and subprime lenders was likely the result of eliminating omitted variable bias. The strong correlation between subprime lenders and minority percentage (-.108) is the likely reason that minority percentage is insignificant in this regression.

**TABLE II**

Probability \([\text{subprime}=1]\) = \(\beta_1\) (income of applicant) + \(\beta_2\) (loan amount) +\(\beta_3\) (percentage of population >65) + \(\beta_4\) (percent minority) + \(\beta_5\) (percent high school education or greater) + \(\beta_6\) (mean property value) + \(\beta_7\) (# of subprime lenders) + \(\varepsilon\)

<table>
<thead>
<tr>
<th>Variables</th>
<th>(\hat{\beta})</th>
<th>Z Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income of Applicant</td>
<td>-.0002475*</td>
<td>-4.79</td>
</tr>
<tr>
<td>Amount of Loan</td>
<td>-.0000612</td>
<td>-1.23</td>
</tr>
<tr>
<td>Percentage of Population over 65</td>
<td>-.0095889*</td>
<td>-15.84</td>
</tr>
<tr>
<td>Percent of Minority by Census Tract</td>
<td>.0002337</td>
<td>1.25</td>
</tr>
<tr>
<td>Percent over 25 with High school Degree or more</td>
<td>-.0041789*</td>
<td>-6.99</td>
</tr>
<tr>
<td>Mean Property Value of Census Tract</td>
<td>-.0007621*</td>
<td>-10.89</td>
</tr>
<tr>
<td># of Subprime Lenders in Census Tract</td>
<td>.0179744*</td>
<td>9.02</td>
</tr>
</tbody>
</table>

*significant at the 5% level
TABLE III

Probability [subprime=1] = $\beta_1 \text{(income of applicant)} + \beta_2 \text{(loan amount)} + $ \beta_3 \text{(percentage of population >65)} + \beta_4 \text{(percent minority)} + \beta_5 \text{(percent high school education or greater)} + \beta_6 \text{(mean property value)} + \beta_7 \text{(Percent Prime banks of total banks of subprime lenders)} + \epsilon

<table>
<thead>
<tr>
<th>Variables</th>
<th>$\hat{\beta}$</th>
<th>Z Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income of Applicant</td>
<td>-.0002435*</td>
<td>-4.69</td>
</tr>
<tr>
<td>Amount of Loan</td>
<td>-.0000609</td>
<td>-1.22</td>
</tr>
<tr>
<td>Percentage of Population over 65</td>
<td>-.0108231*</td>
<td>-18.17</td>
</tr>
<tr>
<td>Percent of Minority by Census Tract</td>
<td>.0001835</td>
<td>.98</td>
</tr>
<tr>
<td>Percent over 25 with High school Degree or more</td>
<td>-.0038286*</td>
<td>-6.41</td>
</tr>
<tr>
<td>Mean Property Value of Census Tract</td>
<td>-.0008072*</td>
<td>-11.36</td>
</tr>
<tr>
<td>Percent Prime of Total Finance Institutions in Tract</td>
<td>-.033161*</td>
<td>-3.54</td>
</tr>
</tbody>
</table>

*significant at the 5% level

Conclusion

Education was the second most important factor that affected the likelihood of originating a subprime loan. Lack of education increases the likelihood of originating a subprime loan. This finding is important because not only is it a rectifiable deficiency, but also because focusing on education brings the predatory lending debate out of the courtroom and away from the politics of the U.S. Treasury Department.

The model also showed that there is a strong relationship between the location of financial providers and the prevalence of subprime loans. That a larger number of prime lenders relative to the number of subprime lenders decreases the likelihood of subprime mortgages supports the claim that borrowers who are inundated with
subprime financial providers are more likely to form relationships within the subprime market. This finding also suggests that prime lenders and subprime lenders compete for the same borrowers, which begs the question of how subprime loans, which by definition have less favorable terms, can compete with prime loans. The fact that subprime lenders do effectively compete for these borrowers’ business suggests that some subprime lenders do in fact practice unscrupulous marketing techniques by targeting and active soliciting, as is often argued.

The insignificant effect of minority percentage on the likelihood of originating a subprime loan calls into question multiple studies that show strong correlation between minority status and subprime originations without allowing for differing levels of education. Additionally, the strong correlation between subprime lenders’ location and minority percentage, which caused minority percentage to become insignificant, needs to be further examined. The fact that many subprime lenders choose to operate in areas that have larger percentages of minorities could be due to the fact that African Americans are largely an “unbanked” demographic. That is many African Americans do not have relationships with prime lending institutions. Subprime lenders, it seems, are filling a hole in the market. Additionally, a study by Corporation of Enterprise Development shows that sixty percent of African Americans have zero or negative financial assets. This severely narrows their access to prime savings and loan institutions (Carr 7).

Policy Recommendations

Circular arguments and preemptive legislation are doing little to assist the victims in the subprime market. Education should be brought to the forefront of the predatory lending debate, and the battle should be fought in laymen’s terms. Additional disclosure requirements will only complicate the lending process and further alienate the uneducated borrower. Standardization of loan terms and instruments could simplify the loan process and give educators a working vocabulary to teach. Grassroots organizations have the most potential to reach the most people, yet mandatory counseling provides another opportunity to be informed. Education
is not a cheap or easy solution, but it is an efficient one. The positive spillover effects of education are innumerable and, as this paper suggests, often overlooked.

Additionally, existing legislation should be reconsidered in light of new research. HUD and HMDA should collaborate to require subprime lenders listed by HUD to report which of their loans were in fact subprime. Without clear and accurate information, the value of research and subsequent recommendations concerning the subprime market will be muted.

Further Research

This paper introduces new characteristics of subprime borrowers and questions existing ones. The effects of education should be broken down and explored further. Future research should look at how education is resourced during the mortgage process in order to better understand its effect. Those desiring to regulate the subprime industry should study the effects of borrower education on the relationship between borrower and lender to determine whether the deficiency is primarily a supply or demand side issue.

This paper showed that subprime lenders tend to locate near subprime borrowers. Research on whether these lenders have tapped a market or created a market would provide valuable insight into the marketing and targeting of subprime borrowers. The effects of prime bank location should also be expanded upon within the context of existing regulation, such as Community Reinvestment Act, concerning the location of banks.
Bibliography

I thank Dr. Teresa Beckham Gramm for invaluable direction and support.


Georgia Bankers Association, Georgia Credit Union, and Community Bankers Association of Georgia. 2003. Georgia Fair Lending Act : The Unintended Consequences. January

Goldstein, Deborah. 1999. Understanding Predatory Lending: Moving Toward a Common Definition and Workable Solutions. Neighborhood Reinvestment
Corp. and Joint Center for Housing Studies of Harvard Univ. October.


pp. 393-410.


Appendix

1. The HMDA data utilized the 1990 census which had fewer tracts than the 2000 census. I consolidated the 2000 census tracts back into their 1990 tracts and summed the statistics I got from the U.S. census 2000 to match the 1990 census tract list. The tracts that were affected were 211.32: split into 211.27 & 211.28; 211.32 split into 211.34, 211.35, & 211.36; 217.22 split into 217.22 & 217.23; 217.43 was split into 217.44 & 217.45.

2. In dividing institutions into “alternative,” “subprime,” and “prime” I had to infer from internet sites for a few. Able insurance’s webpage stated that you “don’t have to worry about your credit history because we won’t hold that against you” and also had a link to a payroll cash advance online. Able was classified as subprime. Conquest mortgage claimed that “bruised credit” and bankruptcies were considered. Conquest was classified as subprime. Home Realty Company of Memphis was included on the city directory of professionals. Home Realty was classified prime. Middleton Johnson and Associates was filed under business loans, they were considered prime. Signature loans and finance loans were classified as alternative lenders.

3. Lender 229470990 was removed from the data set. Loan statistics submitted by this lender were unrealistic (68 loans over $50 million to a census tract with low
median income) and likely to be misreported.

4. Only single occupancy (occupancy = 1) were used in observation in order to capture only single home mortgages.