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The Use of Economic Analysis in Predatory Lending Cases: Application to Subprime Loans

Part IV of A NERA Insights Series

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Previous topics in this subprime lending series include:

- The Subprime Meltdown: A Primer
- Understanding Accounting-Related Allegations
- Subprime Securities Litigation: Key Players, Rising Stakes, and Emerging Trends

Introduction

Lawsuits alleging predatory lending have been on the rise since the mid-1990s, with a sharp surge in filings in 2008. Such litigation is not new—indeed, the first cases date back several decades, having emerged after the passage of the Civil Rights Act and the Fair Housing Act in the 1960s, with additional cases arising after the passage of legislation targeted at predatory lending in the late 1980s. The earliest lending discrimination cases alleged a practice of "redlining," or denying mortgages to creditworthy individuals in minority or low-income neighborhoods. More recently, predatory lending cases have focused less on the denial of mortgages to specific groups and more on alleged targeting of exploitative or manipulative loan products to individuals or groups. Also in recent years, the composition of the mortgage market has been changing: the subprime market has grown significantly due to the continuous increase in housing prices and the availability of cheap credit.[1] These two trends have now converged: the collapse of housing prices triggered a surge in defaults and delinquencies particularly in the subprime market, which led to a new wave of predatory lending lawsuits.

A range of lending behavior may be considered predatory, and recent cases have included an array of allegations. In some cases, plaintiffs allege that the loan-generating process itself was fraudulent. In others, certain types of loans or loan characteristics are alleged to have been unsuitable for the borrower. Other suits allege discriminatory practices, claiming disparate treatment of groups based on race or other demographic characteristics. Some plaintiffs seek injunctive relief, while others seek monetary damages.

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1. Sabry, Faten, and Thomas Schopflocher. "The Subprime Meltdown: A Primer," NERA Economic Consulting, New York, NY, 2007.

Below, we review the definition of predatory lending and describe the recent litigation history. We then examine alleged discriminatory lending in detail, reviewing key economic theory and evidence, as well as relevant statistical techniques. Competing economic theories of discrimination are explored: one where differences in mortgage terms or rates are attributable to a preference for discrimination amongst lenders, and one where differences that appear correlated with race are instead caused by underlying measures of creditworthiness. We explain that rigorous investigations of alleged discriminatory practices require econometric analysis of the causes of differences in loan prices and terms, including the credit history, education, and income of the borrower, as well as the borrower's preference for risk (or discount rate). It may also be important to consider the competitiveness of the market in which the loan was arranged and other macroeconomic factors. Statistical analysis is essential to distinguish behavior that is predatory from that which is explainable by other factors and so does not provide evidence of discrimination.

What is Predatory Lending?

While no current statute or legal decision defines the term "predatory lending," general agreement exists about the types of practices and behaviors that can be categorized as predatory. Broadly, any lending practices that involve unreasonable or unjustifiable loan terms that result in a net harm to a borrower are considered predatory. Any loan that involves fraudulent or deceptive practices clearly falls under the heading of a "predatory loan." Finally, loans that are targeted to particular groups based on race, age, gender, or other characteristics unrelated to the borrower's ability to repay the loan are also considered to be predatory. In economic terms, if a lender knowingly extracts more surplus from the borrower than the loan delivers to the borrower—a net economic loss to the borrower—then predatory behavior has occurred.[2]

Certain loan characteristics are frequently associated with allegations of predatory lending. For example, loans that require borrowers to waive their rights to meaningful redress, loans that lack transparency (even if not actionable as fraud), or loans that are generated through aggressive sales tactics may all be considered to be predatory. The US General Accounting Office (GAO) classifies predatory loans as those that lead to consumer welfare loss because of (i) excessive fees, (ii) excessive interest rates, (iii) single-premium credit insurance, (iv) lending without regard to ability to repay, (v) loan flipping, (vi) fraud and deception, (vii) prepayment penalties, and/or (viii) balloon payments.[3]

Many of the recent cases alleging predatory lending have arisen in the subprime market, but it is important to distinguish subprime lending from predatory lending. *A priori*, there is no reason to believe subprime mortgage loans are predatory. Subprime loans are made to borrowers with a poor credit history or characteristics indicating that these borrowers are a higher credit risk. Subprime loans provide borrowers with access to the credit market when they might otherwise be excluded. In return for this credit—and to compensate lenders for the extra risk—subprime loans are more expensive for the borrower than prime loans.

2. Bond, Philip, David K. Musto, and Bilge Yilmaz."Predatory Lending in a Rational World." United States of America. Federal Reserve Bank of Philadelphia. Research Department. Working Paper, 2nd ed. Vol. 06. 2006.

3. "Federal and State Agencies Face Challenges in Combating Predatory Lending." General Accounting Office. Consumer Protection. Washington, DC, 2004. pp. 18-19.

The full terms of a loan, or the loan price, generally includes the mortgage rate, loan fees, any prepayment penalties, cost of private insurance, and other loan conditions. Subprime loans frequently include features along these dimensions that are customized and complex. Many are hybrid loans that offer a fixed, low rate for the first two years, and then an adjustable rate thereafter. Other non-traditional products include negatively-amortizing mortgages (where only a portion of the full interest is paid and the rest is added to the principal amount owed) and interest-only mortgages (where the borrower pays only the interest for a set period of time, and then begins to pay down the principal in addition to the periodic interest). The differentiation was designed to appeal to borrowers with different appetites for risk and to compensate lenders for their willingness to take on higher risks.

The recent bursting of the housing bubble led to an increased number of defaults on mortgages of all types, but defaults have increased disproportionately on subprime loans. Under the terms of certain subprime hybrid loan agreements, many homeowners' monthly payments were switching from low, fixed rates to significantly higher adjustable rates just as housing prices declined and banks tightened their lending standards. These changes made it harder for borrowers to refinance loans to meet the higher interest payments, resulting in default.

Courts are now being asked to assess whether such subprime loans offered fair terms to high-risk borrowers who were then simply caught short when the economy worsened and housing prices fell, or whether mortgage brokers preyed on such borrowers, locking them into loans they could not hope to repay. Courts are also being asked if these predatory practices were disproportionately focused on particular racial or demographic groups.

Allegations in Predatory Lending Cases

A review of recently filed cases reveals particular lending behaviors that are alleged to be predatory. These include:

- Selling loan products that contain hidden fees (either completely undisclosed fees, or fees that are hidden in complicated contract language).
- Hiding single-premium credit insurance costs in points (where a point is a fee equal to 1% of the loan amount). In these cases, the full premium for the insurance is paid up front in the amount financed in the loan, leading to an increase in interest that borrowers must pay.
- Including balloon payments in adjustable-rate mortgages (ARMs) that force customers to refinance—and pay fees—when loan terms change. Hybrid ARMs are products with a lower fixed interest rate for a short-term period, followed by periodic interest rate increases, often every six months. The initial rate is often called the "teaser rate." In some cases, lenders are alleged to have only considered a borrower's ability to pay the teaser rate—and not the subsequent higher rates—when granting loans.
- Manipulative behavior to unduly encourage loans, including "recruiting" buyers to purchase homes as investment properties, promising that rental income would cover payments.
- Engaging in loan flipping, or repeatedly refinancing loans in a short period of time without any benefit to the borrower, causing high fees to "strip" borrowers' equity from homes.
- Making loans to individuals without regard to borrower creditworthiness or ability to pay.
- Using complicated or misleading advertising to coerce borrowers into taking out loans.

- Including language in loan contracts that forces arbitration and denies litigation as an option to borrowers if any disputes arise about the loan terms and conditions.
- Racial or other systematic discrimination, giving unfair loan terms to one group relative to other groups. This may be known as "reverse redlining": while redlining cases involve the denial of mortgages to creditworthy individuals based on race or other characteristics, reverse redlining often involves particular groups and/or communities that may be offered products with less favorable loan terms regardless of individual creditworthiness.

These kinds of allegations have been brought under a number of federal statutes, as shown in the figure below:

Figure 1. Federal Statutes Involved in Predatory Lending Cases

Civil Rights Act (1964)	All citizens shall have the same rights to inherit, purchase, lease, sell, hold, and convey real and personal property.
Credit Repair Organizations Act (1996)	• To ensure that prospective buyers of the services of credit repair organizations are provided with the information necessary to make an informed decision. • To protect the public from unfair or deceptive advertising and business practices by credit repair organizations.
Equal Credit Opportunity Act (ECOA) (1974)	Prohibits creditors from discriminating against credit applicants on the basis of race, color, religion, national origin, sex, marital status, or age.
Fair Housing Act (1968)	In the sale and rental of housing and mortgage lending, no discrimination or advertisements may target a person based on race, color, national origin, religion, sex, familial status, or handicap.
Home Ownership and Equity Protection Act (HOEPA) (1994)	Prohibits balloon payments, negative amortization, majority of prepayment penalties, rebates of interest upon default, due-on-demand clauses, making loans based solely on the collateral value, or refinancing a HOEPA loan into another HOEPA loan within the first 12 months of origination.
Racketeer Influenced and Corrupt Organizations Act (RICO) (1970)	Prohibits any person through a pattern of racketeering activity or through collection of an unlawful debt to acquire or maintain any interest in or control of any enterprise which is engaged in interstate or foreign commerce.
Real Estate Settlement Procedures Act (RESPA) (1974)	Must disclose a good faith estimate of settlement costs, which lists the charges the buyer is likely to pay at settlement. Prohibits fee splitting and receiving fees for services not actually performed.
Truth in Lending Act (TILA) (1968)	Must disclose fees imposed by third parties and transaction requirements. May only advertise actually available terms. Prohibits extending credit to a consumer based on the consumer's collateral without regard to the consumer's repayment ability.

In addition, some states and cities have additional laws designed to discourage predatory lending. As of 2006, 28 states and the District of Columbia had enacted such legislation.[4] According to the GAO, "[m]ost of these laws regulate and restrict the terms and characteristics of high-cost loans—that is, loans that exceed certain rate or fee thresholds. While some state statutes follow the thresholds for covered loans established in the Home Ownership and Equity Protection Act (HOEPA), many set lower thresholds in order to cover more loans than the federal statute."[5]

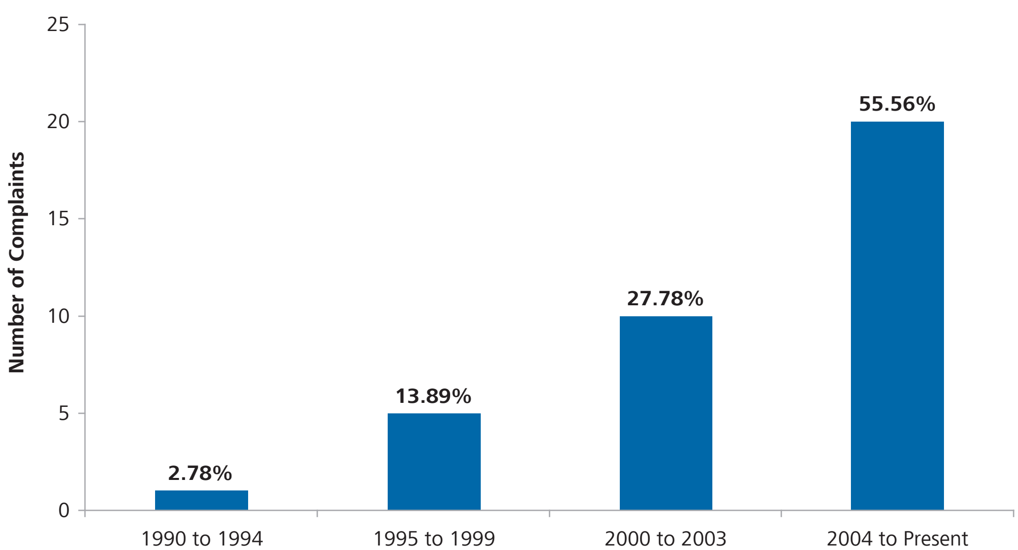
Recent Cases

Trends in Predatory Lending Filings

Predatory lending suits are not a new phenomenon, with cases dating back several decades. Lending discrimination cases first began to be filed following the passage of the Civil Rights Act in 1964 and the Fair Housing Act in 1968. In 1994, HOEPA was passed, which is the only federal law "specifically designed to combat predatory lending."[6] Following the passage of this law, a spate of new cases was filed in the late 1990s. These suits were large class actions, typically involving thousands of borrowers.

In the last decade, following the increase in subprime lending but before the collapse of the housing market and the recent financial crisis, a further increase in predatory lending cases was already apparent; this may be seen in the figure below.

Figure 2. Complaints by File Year



4. Li, Wei, and Keith S. Ernst. "The Best Value in the Subprime Market." Center for Responsible Lending. Durham, NC. 2006. pp. 2.

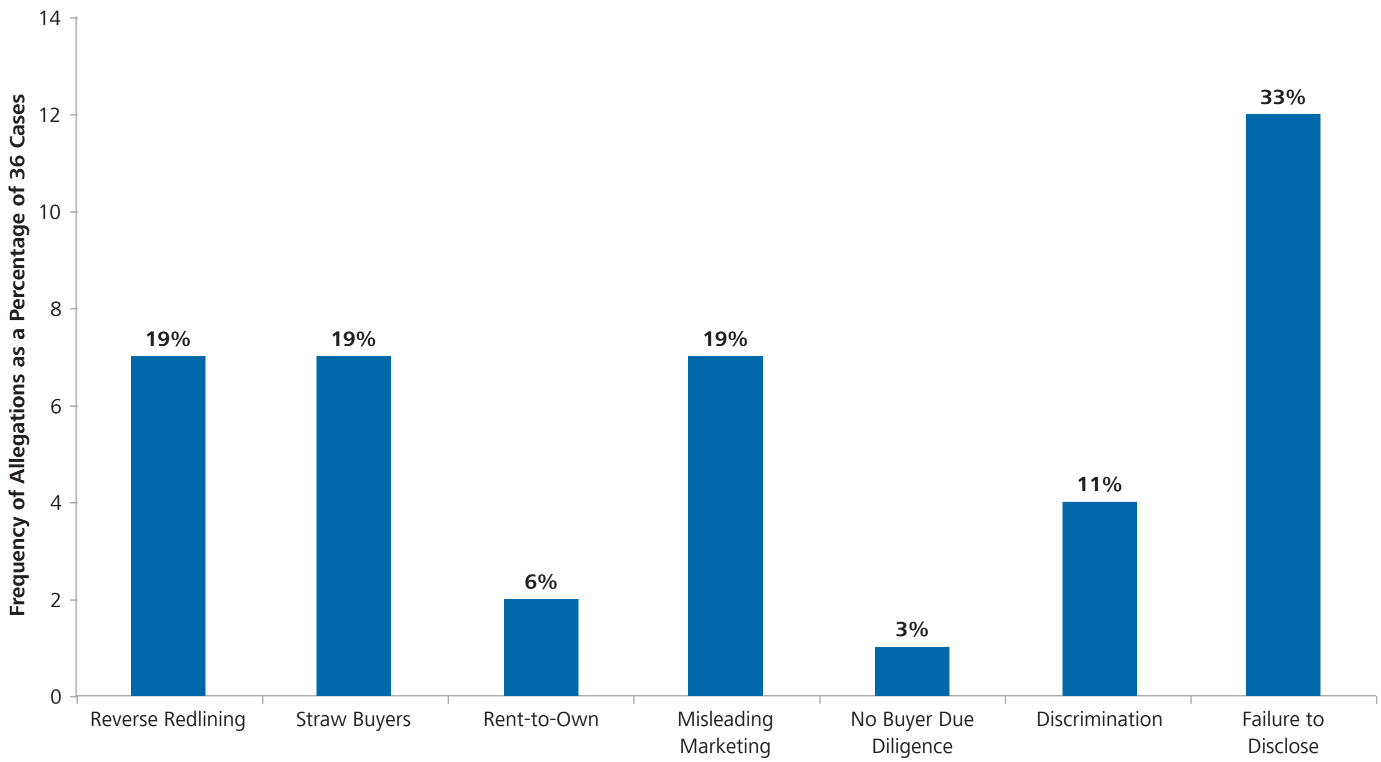
5. "Federal and State Agencies Face Challenges in Combating Predatory Lending." General Accounting Office. Consumer Protection. Washington, DC, 2004. pp. 10.

6. Ibid. pp. 30.

Most recently, following the collapse of the subprime market in the second half of 2007, a spike in predatory lending cases occurred. In the first eight months of 2008, at least 19 cases were filed, compared to an average of two per year from 2000 through 2007.

Of the allegations included in cases filed since 2000, nearly one-fifth relate specifically to reverse redlining, with another 11% relating more generally to discrimination. Many of these cases allege that the marketing of loan products was misleading. These misleading marketing allegations may be coupled with discrimination claims, or may be standalone complaints.

Figure 3. Predatory Lending Allegations (Since 2000)



Notes and Sources:
Percentages describe frequency of allegation in relation to total amount of cases. Allegations are from a sample of 36 cases. Information was obtained by searching Factiva.com for publications and Web news using All Sources and containing the words "predatory lending AND lawsuit" or "discriminatory lending and lawsuit" or "predatory lending and lawsuit and race" from 1/1/80 through 9/3/08.

Predatory Lending Settlements

While many predatory lending cases remain pending, a number of cases have been resolved with settlements or penalties. For example, in 2002, two cases brought by the Federal Trade Commission (FTC) reached settlements. The first case alleged that First Alliance Mortgage Company used complicated and misleading advertising related to its lending products. The case resulted in a $60 million settlement that was used to reimburse over 18,000 borrowers. Also in 2002, a case brought by the FTC against Citigroup/Associates First Capital Corp. that alleged loan-flipping, inducing borrowers to take optional, costly insurance, and misleading advertising was settled for $240 million. This settlement was distributed to consumers who purchased credit insurance or had their loans flipped during the relevant period. In 2006, Ameriquest Mortgage Company reached a settlement for $325 million with all 50 state attorneys general, relating to allegations that their products contained hidden fees and that Ameriquest engaged in manipulative behavior to unduly encourage loans. See Figure 4 below.

Figure 4. Notable Predatory Lending Settlements

File Date	Settlement Date	Plaintiff	Defendant	Allegation	Settlement/Penalty
12/1/92	12/16/93	Georgia Attorney General and Governor's Office of Consumer Affairs	Fleet Finance Inc.	Reverse redlining	$100 Million Settlement
5/7/98	3/1/02	Federal Trade Commission/American Association of Retired Persons (AARP)	First Alliance Mortgage Company	Used complicated and misleading advertising	$60 Million Settlement
12/27/99	9/19/02	Federal Trade Commission	Citigroup/Associates First Capital Corp.	• Used complicated and misleading advertising • Loan flipping	$240 Million Settlement
5/8/00	6/16/03	Michael and Barbara Austin; Walter and Harriet Berringer; George and Josephine Jerolemon; et al.	Brian Chisick; Lehman Commercial Paper, Inc.; Lehman Brothers, Inc.	Assisted in fraudulent activities by providing financial backing to First Alliance Corporation	$50.1 Million Judgment for Plaintiffs
11/15/01	12/16/02	Attorneys General Offices for all 50 States	Household International Inc.	Manipulative behavior to unduly encourage loans	$484 Million Settlement
8/23/02	11/25/03	Association of Community Organizations for Reform Now (ACORN)	Household International Inc.	Selling loan products that contain hidden fees	$100 Million Settlement
2/5/05	3/26/06	Attorneys General Offices for all 50 States	Ameriquest Mortgage Company	• Selling loan products that contain hidden fees • Manipulative behavior to unduly encourage loans	$325 Million Settlement
6/25/08	10/6/08	Illinois, California, Arizona, Connecticut, Florida, Iowa, Michigan, North Carolina, Ohio, Texas, and Washington	Bank of America/ Countrywide	• Used complicated and misleading advertising • Selling loan products that contain hidden fees • Manipulative behavior to unduly encourage loans	$8.4 Billion Settlement

Notes and Sources:

Information was obtained by searching Factiva.com and Westlaw for publications and Web news using All Sources and containing the words "predatory lending AND suit" or "discrimination AND suit" or "predatory lending AND suit AND race" or "fair lending AND suit" from 1/1/80 through 10/6/08.

While many earlier predatory lending cases have resulted in settlements of tens or even hundreds of millions of dollars, the largest settlement to date occurred recently on the heels of the subprime meltdown. In October 2008, Bank of America reached an agreement with 11 state attorneys general to settle claims related to predatory lending originated by Countrywide Financial Group. This settlement may be worth more than $8.6 billion, and includes a "mandatory loan modification program" that makes up as much as $8.4 billion of the settlement. Under the terms of the agreement, Bank of America agreed to refinance or reduce interest rates on subprime and option ARM loans made prior to 2008.

Key Discrimination Cases

Three notable recent cases have included specific allegations related to systematic racial discrimination in lending:

- *National Association for the Advancement of Colored People (NAACP) vs. Ameriquest Mortgage Co. et seq.*: This case was filed in July 2007 in the US District Court, Central District of California. Plaintiffs allege that defendants imposed different terms or conditions on a loan, such as different interest rates, points, or fees, on the basis of race. Defendants are alleged to have targeted African-Americans for higher-cost subprime mortgage loans, while directing Caucasian applicants with the same qualifications into lower cost loans.
- *Mayor and City Council of Baltimore vs. Wells Fargo Bank*: This case was filed in 2008 in the US District Court, District of Maryland. Plaintiffs allege that Wells Fargo targeted Baltimore's African-American neighborhoods using improper and irresponsible lending practices. Plaintiffs claim that the defendant underwrote adjustable-rate loans in Baltimore's African-American neighborhoods that borrowers could not afford, and that the caps on Wells Fargo's adjustable-rate loans were higher in African-American neighborhoods.
- *Massachusetts vs. H&R Block et seq.*: This case was filed in 2008 in the Commonwealth of Massachusetts. Among other things, plaintiffs allege that the defendant employed unduly relaxed writing standards and issued a high volume of risky and unaffordable loans, knowing that a majority of the loans would be sold and the risk would be borne by others. In particular, plaintiffs allege that the defendant's pricing policy caused Black and Latino borrowers to pay significantly more in costs for their loans.

Plaintiffs in these cases seek different remedies. In *NAACP vs. Ameriquest*, plaintiffs seek injunctive relief to end the alleged predatory behavior. In the Baltimore case against Wells Fargo, plaintiffs are seeking compensatory and punitive damages against the defendant. In Massachusetts, plaintiffs make several demands. These include injunctive relief related to foreclosure and other behavior of the defendants, restitution to borrowers in the amount of $5,000 for each violation of Massachusetts law, and restitution to borrowers for the position they would have been in "but for" the defendant's conduct.

Application of Economic Analysis to Alleged Discrimination in Subprime Lending

Did borrowers with similar levels of credit risk pay different prices for the same mortgage product? Or, for given prices and terms of mortgages, are certain groups of borrowers more qualified than others? To the extent that borrowers paid different prices or received different terms, is the disparity attributable to race and ethnicity or, alternatively, can some or all of the difference be explained by differences in geographic location, creditworthiness, the borrowers' relative appetites for risk, and the level of competition in the market in which the loan was made? Economists will be asked to investigate these questions to assist courts in the new wave of subprime-related predatory lending cases.

Review of Economic Theory

Two main economic theories seek to explain discrimination: Gary Becker's taste-based discrimination theory (1957) and Kenneth Arrow's information-based statistical discrimination theory (1973).[7,8] These competing theories provide a useful framework for analyzing alleged discrimination in the subprime lending market.

Becker's theory assumes that discrimination results from taste or preference—a disutility associated in this case with providing loans to minority applicants. Arrow's theory, alternatively, assumes that race, an easily identifiable characteristic, is correlated with and thus used to infer otherwise incomplete information about other factors that may be less readily observable. In the case of subprime mortgage lending, Arrow's theory would hypothesize that race was correlated with creditworthiness or default risk. Put simply, if Becker's theory was at work in the market for subprime lending, borrowers with the same creditworthiness would have received worse terms or rates on their loans simply because of race; if Arrow's theory was the driving force, what appears on a superficial level to be racial discrimination would instead be explainable by other factors—factors correlated with race that reflect the underlying creditworthiness of the borrower.

A decade ago, Arrow (1998) considered the two theories in the context of the mortgage market. He noted that a disproportionate number of defaults among black borrowers would *not* be predicted by taste-based discrimination, but would be consistent with information-based discrimination.[9] To understand why this is the case, imagine two borrowers with the same creditworthiness, one of whom is discriminated against. While that borrower could have qualified for a loan with better terms, he/she was held to a higher standard and given higher-interest subprime loans as a result of discrimination. Following Becker's taste-based theory, if such discriminations were occurring, we would expect that on average, discriminated borrowers should perform *better* (in, say, delinquency rates or foreclosure rates) than non-discriminated borrowers with equivalent loan terms and characteristics. That is, after controlling for the interest rate and all other relevant terms of the loan, blacks should have lower delinquency and foreclosure rates than whites if taste-based discrimination is occurring. Alternatively, if Arrow's theory holds, what appears to be discrimination may instead be a means to identify the creditworthiness of borrowers. If so, when all other factors that affect creditworthiness are controlled, race should not affect loan performance, demonstrating that no racial discrimination exists.

7. Becker, Gary S. *The Economics of Discrimination*. University of Chicago Press. Chicago, IL. 1957.

8. Arrow, Kenneth, *Discrimination in Labor Markets*, Princeton University Press. Princeton, NJ. 1973.

9. Arrow, Kenneth, "What Has Economics to Say About Racial Discrimination?" *The Journal of Economic Perspectives*, Vol. 12, No. 2, pp. 91-100. Spring 1998.

Factors Affecting Mortgage Rates and Terms

To assess a predatory lending claim, then, an investigation must be conducted into the factors that may legitimately explain differences in mortgage rates or terms across borrowers. Differences attributable to discrimination would be actionable under predatory lending laws, but a number of other reasons for a discrepancy may exist:

- *The creditworthiness of the borrower*: Lenders may use various metrics to determine the creditworthiness of the borrower, such as:

  (1) Fair Isaac Credit Organization (FICO) score, a measure that helps lenders to determine a borrower's default risks as a function of his/her historical credit history;

  (2) Loan to value ratio: as the loan to value ratio increases, the equity in the home decreases, reducing the likelihood that a lender would recover some value in the case of a default and foreclosure;

  (3) Debt to income ratio: the higher the debt to income ratio, the more likely a borrower might be unable to cover loan payments;

  (4) Level of documentation: the more documentation a borrower can provide, the more confident a lender can be in his/her ability to repay[10]; and

  (5) Lender's default history.

- *The type of mortgage product*: Historically, mortgage loans were either fixed or adjustable rate. As noted above, however, myriad products have been developed in recent years, including hybrid rate loans, interest-only loans, and negative amortization loans. The difference in mortgage products reflects various types of risks being borne by borrowers and lenders, and these risks must be taken into account when examining the price differential. For example, a product with a low payment for two years, which increases thereafter, may be preferred by a borrower with a high discount rate (e.g., a borrower who does not have substantial savings at present, but believes his income will be higher in subsequent periods).

- *The degree of competition among lenders*: The more banks offer loans in a given community, the more options and information would be available to consumers. A proper assessment of alleged predatory lending requires that this local environment be considered. For example, higher rates may be offered in a neighborhood with fewer banks competing to make loans.

- *Local macroeconomic factors*: Housing prices and volatility at the neighborhood level may impact the riskiness of the loan. In areas with an active housing market and a steady increase in property values, there is less risk that lenders will be unable to recover their investment in the event of a default, because it will be relatively easy to resell the property. In neighborhoods with high vacancy rates and "boarded-up" rates, the opposite is likely to be true. Similarly, local income and employment levels may serve as proxies for a particular borrower's risk of unemployment, which in turn impacts the riskiness of a loan.[11]

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10. Recent cases related to subprime litigation have centered on the issue of documentation: in several cases, lenders have been alleged to have taken "stated income" information only to issue loans, failing to verify income and assets of the borrowers.

11. Ross, Stephen L., and Geoffrey M. Tootell. "Redlining, the Community Reinvestment Act, and Private Mortgage Insurance." *Journal of Urban Economics*, 55. pp. 278-97, 2004.

Statistical Analysis of Discrimination and Predatory Lending

Statistical analyses can be used to assess the existence of systematic discrimination in lending practices in a particular geographic area or population. Government and industry studies have undertaken preliminary investigations of these issues, although they have tended to rely on aggregate statistics or incomplete data that did not allow rigorous investigation of alleged discrimination. A well-established economic literature, however, that began with analyses of alleged redlining in the 1980s, provides a helpful roadmap for more sophisticated investigations in the subprime context.

Government/Industry Studies

In the wake of the surge in subprime lending and the subsequent housing collapse and credit crisis, a number of government studies have attempted to quantify predatory lending practices. The GAO acknowledges that it is difficult to measure the extent of aggregate predatory lending, at least in part because there is no precise definition of the practice. As a rough proxy, the GAO relies on statistics about foreclosures, combined with anecdotal evidence and legal settlements, as indicators that predatory practices are prevalent. More specifically, the GAO noted that subprime foreclosures have increased substantially since 1990, at a much faster rate than subprime originations, which they hypothesize may be evidence that predatory practices have been on the rise.[12] While these types of correlations may be suggestive, however, they cannot reliably identify predatory practices. A report by the US Department of Housing and Urban Development (HUD) acknowledges as much, noting that while the increased rate in subprime foreclosures *could* be the result of abusive lending, other factors, such as the boom in subprime loans that provided mortgages to increasingly less creditworthy borrowers, could instead be driving the trend.[13]

Using data provided under the Home Mortgage Disclosure Act (HMDA), authors at the Federal Reserve concluded that "black and Hispanic borrowers are more likely, and Asian borrowers less likely, to obtain loans with prices above the HMDA pricing thresholds [or higher-priced loans] than non-Hispanic white borrowers."[14] The HMDA data contain, at the individual loan level, information on loan pricing and size, loan applications, demographic characteristics of borrowers such as gender, race, and ethnicity, income information about borrowers, and geographic information about the property.[15]

While these data contain many important characteristics related to lending behavior and is cited by plaintiffs in complaints, however, it is missing many other key determinants of lending such as FICO scores, debt to income levels, employment history, level of documentation, and the existence of private mortgage insurance. Moreover, HMDA contains no information about the performance of loans such as the delinquency, prepayment, and default rates. The authors of the Fed report acknowledge these limitations, noting that the "unexplained differences in the incidence in higher-

12. "Federal and State Agencies Face Challenges in Combating Predatory Lending." General Accounting Office. Consumer Protection. Washington, DC, 2004. pp. 24.

13. Ibid.

14. Avery, Robert B., Kenneth P. Brevoort, and Glenn B. Canner. "The 2006 HMDA Data." Federal Reserve Bulletin. 2007. pp. A95.

15. Avery, Robert B., Kenneth P. Brevoort, and Glenn B. Canner. "The 2006 HMDA Data." Federal Reserve Bulletin. 2007.

priced lending and denial rates [for some racial and ethnic groups] stem, at least in part, from credit-related factors not available in the HMDA data. … Differential costs of loan origination and the competitive environment also likely bear on the differences in pricing.…"[16] Thus, from HMDA data alone, it is impossible to identify whether discriminatory treatment occurred.[17]

Other research papers have attempted to supplement this HMDA data with additional information. In 1996, Munnell et al. matched the HMDA data with detailed survey data from the Boston area to incorporate other key lending characteristics into their analysis of the determinants of mortgage lending.[18] Similarly, the Center for Responsible Lending supplements HMDA data with proprietary data on subprime home loans to improve its descriptive power.[19,20]

Other industry studies examine potential racial disparities in high-cost lending practices. One such study was drafted by the National Community Reinvestment Coalition in July 2007. The authors write: "In the backdrop of the risky high-cost lending practices, the NCRC observes striking racial disparities in high-cost lending. If a consumer is a minority, particularly an African-American or Hispanic, the consumer is most at risk of receiving a poorly underwritten high-cost loan."[21] This study, like many others, looks at disparities in loan costs by racial characteristics using the HMDA data.[22] The simplest of these "disparity" analyses calculate the ratio of high-cost loans for certain groups to a base-line group (usually whites). More complicated versions of these statistics look at the disparity ratios for subgroups within racial categories, such as high-, medium-, or low-income groups, or borrowers of different genders.

Even when these disparity ratio studies focus on subgroups of borrowers, however, they typically fail to control for important borrower-level characteristics of creditworthiness, characteristics that are frequently unavailable in public data.

16. Ibid, pp. A99.

17. Jordan, James, Chudozie Okongwu, and Faten Sabry, "A Study of Securitization: Preliminary Analysis," American Securitization Forum Conference, Las Vegas, February 2008.

18. Munnell, Alicia H., Kenneth P. Brevoort, and Glenn B. Canner. "Mortgage Lending in Boston: Interpreting HMDA Data." *The American Economic Review*, 89. pp. 25-53. 1996.

19. Bocian, Debbie G., Keith S. Ernst, and Wei Li. "Unfair Lending: The Effect of Race and Ethnicity on the Price of Subprime Mortgages." Center for Responsible Lending. Durham, NC. 2006.

20. Other sources of information for loan and borrower characteristics include the Monthly Interest Rate Survey by the Federal Housing Finance Board, the US Census Bureau, the US Bureau of Labor Statistics, the US Department of Housing and Urban Development (HUD), and the Office of Federal Housing Enterprise Oversight (OFHEO), among others.

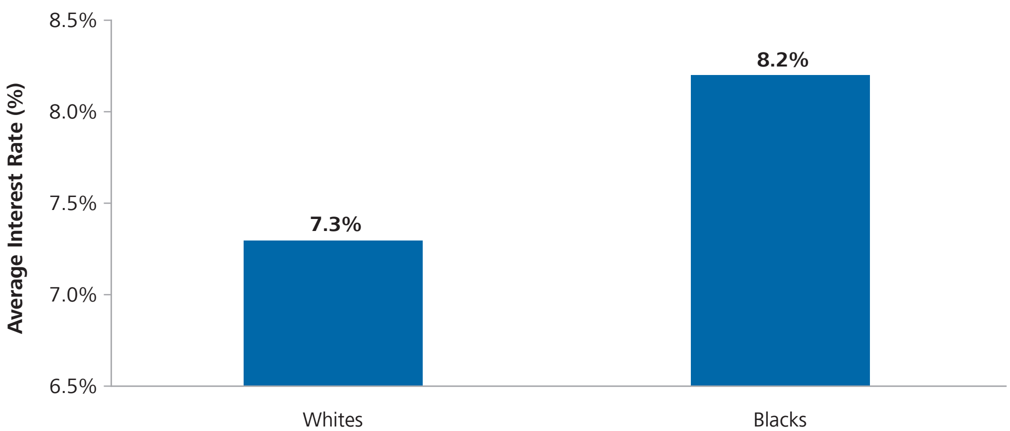
21. "Income is No Shield Against Racial Differences in Lending: A Comparison of High-Cost Lending in America's Metropolitan Areas." National Community Reinvestment Coalition. Washington, DC 2007. pp. 4.

22. Avery, Robert B., Kenneth P. Brevoort, and Glenn B. Canner. "The 2007 HMDA Data." Federal Reserve Board. 2008. AND Avery, Robert B., Kenneth P. Brevoort, and Glenn B. Canner. "The 2006 HMDA Data." Federal Reserve Bulletin. December 2007; see below for more detailed description of HMDA data and its limitations.

A Simplified Example

How do statistical tests and tools such as regression analysis allow a more rigorous determination of whether discrimination in lending exists? A simplified example can help demonstrate why such tools are important. Suppose a case alleges racial discrimination. Plaintiffs' complaint might include descriptive statistics noting that, on average, black borrowers are charged a higher interest rate on their loans than white borrowers.

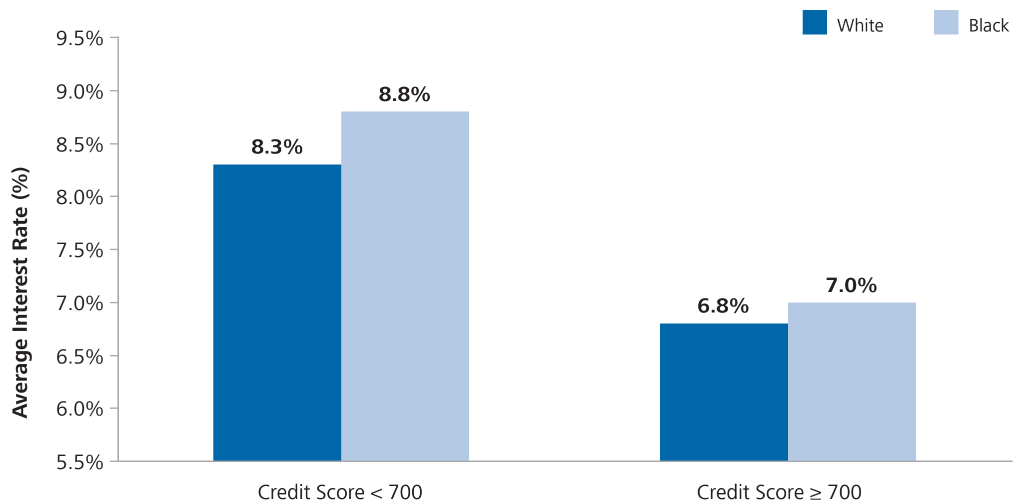
Figure 5. Average Loan Interest Rate by Race—Stylized Example



While this gives the superficial impression that discrimination exists, many other variables may be affecting the lender's decision about whether to extend a loan and, if ignored, may cause the appearance of discrimination where none exists. This is a well-documented statistical problem known as *omitted variable bias*.[23] As noted above, a variety of factors could affect the interest rate charged on a loan, including the characteristics of the applicants and the types of loans, macroeconomic factors, and local market conditions. For example, if the borrowers in the example above are separated into groups—those with FICO scores above/below 700—a significant amount of the apparent differential in interest rates is eliminated.

23. See, for example, *Econometric Models and Economic Forecasts*, by Robert S. Pindyck and Daniel L. Rubinfeld. These authors note that, to avoid potential omitted variable bias, "researchers usually examine more than one possible specification, attempting to find the specification which best describes the process under study."

Figure 6. Average Loan Interest Rate By Credit Score and Race—Stylized Example



While the example above is simplified for illustrative purposes, many factors may be driving the interest rate charged, and tools such as regression analysis allow rigorous measurement of these effects.[24] Using regression models, we can analyze the statistical significance of the relationships between variables and the degree of confidence in the estimated relationship. Regression models have been accepted by courts for use in various types of litigation.[25] Linear regression models may be used to measure the relationship between loan characteristics, such as the interest rate, and the characteristics of borrowers. Other tools are required when the question differs: for example, discrete choice models may be used to estimate the probability of a loan being granted or of certain types of loans being granted to particular buyers.

Certain studies in economic literature have attempted to investigate whether discrimination exists using data on borrower demographics, creditworthiness, and resulting loan performance. Studies testing Becker's theory—that certain lenders have a taste for discrimination—examined performance on loans. Some of these studies showed that groups who were the targets of alleged discrimination performed better on loans (e.g., in terms of default rates) and argued that this better performance indicated that borrowers were being held to a higher standard on account of race.[26] However, such studies were criticized for two primary reasons: (1) some argued that expectations of performance and not ex-post performance should be used to assess whether lending was fair (e.g., the circumstances faced by the borrower may have changed between the time the loan was made and the time the performance is being measured, rendering the results unreliable), and (2) the model specifications suffered from omitted variable bias.

24. Sykes, Alan O. "An Introduction to Regression Analysis." University of Chicago, Working Paper in Law and Economics. 1993.

25. *Reference Manual on Scientific Evidence*, 2nd ed.. Federal Judicial Center. Washington, DC, 2000.

26. Berkovec, James A., Glenn B. Canner, Stuart A. Gabriel, and Timothy H. Hannan. "Race, Redlining, and Residential Mortgage Loan Performance." *Journal of Real Estate Finance & Economics*, Issue No. 9. pp. 263-94. 1994.

Attempts have been made to approve studies in light of these criticisms. For example, Berkovec et al. corrected for the second criticism in a 1998 study by recognizing that competition in the market for lending also influences whether discrimination can exist. In highly competitive markets, attempts at discrimination on account of taste would fail—lenders without a bias would offer to make the loan on competitive terms. The authors hypothesized, then, that any discrimination could only occur in areas of low competition, i.e., with few loan providers, and argued that the chance of an omitted variable being correlated to performance, race, and the lending environment, and therefore biasing the results, was remote and unlikely.[27]

Conclusion

The framework above shows how rigorous statistical analysis is required to distinguish between competing theories of discrimination: that inferior loan rates or terms result from a taste or preference for discrimination on the part of the lender or, alternatively, that race or other demographic characteristics are correlated with less readily observed characteristics that affect the borrower's creditworthiness. A proper assessment of alleged predatory lending, then, must control for characteristics including but not limited to the credit history, employment status, income level, and education of the borrower, as well as the borrower's preference for risk (or discount rate). The competitiveness of the market in which the loan was arranged and other relevant macroeconomic factors may also need to be considered. Such analysis is essential to distinguish behavior that is predatory from that which is explainable by these other factors and would not be evidence of discrimination.

27. Berkovec, James A., Glenn B. Canner, Stuart A. Gabriel, and Timothy H. Hannan. "Discrimination, Competition and Loan Performance in FHA Mortgage Lending." *The Review of Economics and Statistics,* Vol. 80 No. 2. pp. 241-250. May 1998.

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