ALASKA LEGISLATURE COMMITTEE FILES, 2003-2004 8672
11024 HOUSE STATE AFFAIRS

5 Placed in a market based on all other underwriting factors
3 Not given a quote
4 Attempt to order credit

Homeowners
6_____ Not issued a policy
0_____ Non-renewed
0_____ Cancelled
0_____ Given the best rate or placed in the best tier
0_____ Given the worst rate or placed in the worst tier
0_____ Given some intermediate rate or placed in an intermediate tier
_____ Other (please specify)
3 Given a quote, but the policy will not be issued without using credit history
4 Attempt to order credit

53. If a consumer is a "no hit" (the company can find no credit information on the applicant), but meets all other eligibility criteria, how is the consumer treated?

Auto
3_____ Not issued a policy
0_____ Non-renewed
0_____ Cancelled
3_____ Given the best rate or placed in the best tier
0_____ Given the worst rate or placed in the worst tier
9_____ Given some intermediate rate or placed in an intermediate tier
_____ Other (please specify)
7 Assigned a mathematical weight
1 Offered coverage in another company
5 Placed in a company based on all other underwriting factors
3 Assigned the worst credit score category
3 Assigned an average credit score

Homeowners
0_____ Not issued a policy
0_____ Non-renewed
0_____ Cancelled
1_____ Given the best rate or placed in the best tier
0_____ Given the worst rate or placed in the worst tier
1_____ Given some intermediate rate or placed in an intermediate tier
_____ Other (please specify)
4 Assigned a mathematical weight
3 Placed in a company based on all other underwriting factors
2 Assigned an average credit score

54. If a consumer is a "no score" (the company is unable to calculate a credit score for the consumer), but meets all other eligibility criteria, how is the consumer treated?

Auto
1_____ Not issued a policy
0_____ Non-renewed
0_____ Cancelled
1_____ Given the best rate or placed in the best tier
0_____ Given the worst rate or placed in the worst tier
9_____ Given some intermediate rate or placed in an intermediate tier
_____ Other (please specify)

7 Assigned a mathematical weight
1 Offered coverage in another company
5 Placed in a company based on all other underwriting factors
3 Assigned the worst credit score category
3 Assigned an average credit score
2 Given the best rate in a standard company

Homeowners

0 Not issued a policy
0 Non-renewed
0 Cancelled
1 Given the best rate or placed in the best tier
0 Given the worst rate or placed in the worst tier
1 Given some intermediate rate or placed in an intermediate tier
_____ Other (please specify)
4 Assigned a mathematical weight
1 Placed in a company based on all other underwriting factors
2 Assigned an average credit score

55. When a policy is written for multiple insureds, whose credit history is considered in the rating or underwriting of the policy?

Auto

3 The consumer with the best credit score
0 The consumer with the worst credit score
11 The consumer who is the first named insured
17 The consumer who is the first named applicant
0 All consumers and an average credit score is developed
1 The consumer selected by the insured or applicant
0 The husband's
0 The wife's
_____ Other (please specify)
2 First two applicants
3 Spouse when named insured is a no-hit or no-score
2 Person in household most likely to have complete credit history (usually oldest male driver under 65)

Homeowners

1 The consumer with the best credit score
0 The consumer with the worst credit score
5 The consumer who is the first named insured
5 The consumer who is the first named applicant
0 All consumers and an average credit score is developed
0 The consumer selected by the insured or applicant
0 The husband's
0 The wife's
_____ Other (please specify)
2 First two applicants
3 Named insured and spouse

56. Is a consumer's credit score or credit information used as eligibility criteria for the type of payment plan offered to an insured?

One auto and one homeowners insurer use credit history to determine eligibility for the type of payment plan offered to the insured.

57. Is a consumer's credit score or credit information used in the decision to deny a claim?

No insurers use credit history to deny a claim.

58. Is a consumer's credit score or credit information used to settle a claim for a certain amount?

No insurers use credit history to settle a claim for a specified amount.

59. Describe any other uses that your company makes of credit history.

Automobile Insurance Companies

Active companies as of September 30, 2002

Credit Information Used For Underwriting

AIU Insurance Company (AIG)
Allstate Insurance Company
Company
Allstate Indemnity Company
Company
American Home Assurance Company (AIG)
American International Insurance Company (AIG)
Country Casualty Insurance Company
Country Mutual Insurance Company
Country Preferred Insurance Company
Electric Insurance Company
First National Insurance Company of America (SAFECO)
GEICO Casualty Insurance Company
GEICO General Insurance Company
GEICO Indemnity Company
General Insurance Company of America (SAFECO)
Government Employees Insurance Company
Insurance Company of the State of Pennsylvania (AIG)
Insurance Co.
National Union Fire Insurance Company of Pittsburgh (AIG)
SAFECO Insurance Company of America
SAFECO Insurance Company of Illinois
State Farm Fire and Casualty Company
State Farm Mutual Auto Insurance Company
United Services Automobile Association
USAA Casualty Insurance Company
USAA General Indemnity Company

Credit Information Used for Rating

American Economy Insurance Company (insurQuest)
American States Insurance Company (insurQuest)
Country Casualty Insurance Company
General Insurance Company of America (insurQuest)
Horace Mann Property & Casualty Insurance Company
Leader Insurance Company
Progressive Casualty Insurance Company
Progressive Northwestern Insurance Company
Progressive Specialty Insurance Company
United Services Automobile Association
USAA Casualty Insurance Company
USAA General Indemnity Company
Worldwide Insurance Company

Credit Information Not Used

American Bankers Insurance Company of Florida
American Family Home Insurance

American Manufacturers Mutual Insurance

American Modern Home Insurance Company
American Premier Insurance Company
American Protection Insurance Company
Amica Mutual Insurance Company
Cincinnati Insurance Company
Federal Insurance Company
Harleysville Insurance Company
Hartford Accident & Indemnity Company
Hartford Insurance Company of the Midwest
Horace Mann Insurance Company
Liberty Mutual Fire Insurance Company
Markel Insurance Company
Metropolitan Group Propety & Casualty

Northland Casualty Company
Sentry Select Insurance Company
Teachers Insurance Company (Horace Mann)
Vigilant nsurance Company
Windsor Insurance Company

Homeowners Insurance Companies

Active companies as of September 30, 2002

Credit Information Used For Underwriting

Allstate Insurance Company
Allstate Indemnity Company
Armed Forces Insurance Exchange
Country Mutual Insurance Company
Electric Insurance Company
First National Insurance Company of America (SAFECO)
General Insurance Company of America (SAFECO)
Nationwide Mutual Fire Insurance Company
SAFECO Insurance Company of America
SAFECO Insurance Company of Illinois
Vesta Insurance Corporation

Credit Information Used for Rating

American International Insurance Company (AIG)

Credit Information Not Used

American Bankers Insurance Company of Florida
American Equity Insurance Company
American Manufacturers Mutual Insurance Company
American Protection Insurance Company
Cincinnati Insurance Company
Empire Fire & Marine Insurance Company
Federal Insurance Company
Hartford Insurance Company of the Midwest
Harleysville Insurance Company
Horace Mann Insurance Company
Liberty Mutual Fire Insurance Company
Metropolitan Group Property & Casualty Insurance Company
Sentry Select Insurance Company
State Farm Fire and Casualty Company
Umialik Insurance Company
United Services Automobile Association
USAA Casualty Insurance Company
Vigilant Insurance Company

Consumer Federation of America

Credit Score Accuracy and Implications for Consumers
December 17, 2002

Consumer Federation of America
National Credit Reporting Association

Table of Contents

I. About Privacy

The Consumer Federation of America (CFA) and the National Credit Reporting Association (NCRA) designed the details of this study with advice from legal counsel to ensure the methodology would comply with the requirements of the Fair Credit Reporting Act, Gramm Leach Bliley Act, and other consumer privacy laws. From the outset, each organization was mindful of the ethical spirit and intent of these consumer protection and privacy laws. In this day of rampant identification theft, we carefully evaluated each segment of the study workflow to ensure that we analyzed data extracted from the credit files without any trace of personal identifiers. Regarding consumer identity, all non-public, personal information data was completely "blind" as to a source for analysis. No names, addresses, social security numbers, dates of birth, account numbers, or any other item that could be used in any way to trace back to a specific consumer were revealed to or recorded by any third party outside trusted personnel of the consumer reporting agencies involved in the study. In one phase of the study the recorded data segment closest to the consumer was the postal zip code of their residence.

After CFA made a random selection of the time frame from which credit files were to be analyzed, a generic number was assigned to keep the nameless study data from each study file separated from other study files. No copies or partial copies of any credit reports, on paper or electronically, were removed from any credit reporting agency location. Anonymous credit scores and an analysis of the credit data, as reviewed by credit reporting agency personnel for security and industry knowledge, was supervised and recorded by the CFA researcher for tabulation. The data elements recorded in this study are insufficient to ever be used to track or identify any individual. Further, the analytical data recorded, if ever obtained by unscrupulous individuals, contains no information that could ever be used to try to defraud any of the consumers or creditors connected to the files in the study. Total anonymity to consumer identity and creditor accounts was, and will continue to be, strictly enforced.

II. The Growing Importance of Credit Scores

Consumer access to credit, housing, insurance, basic utility services, and even employment is increasingly determined by centralized records of credit history and automated interpretations of those records.

Credit histories in one form or another have long been an important factor in decisions to extend or deny credit to consumers[1]. Historically, such decisions required a skilled, human evaluation of the information in an applicant's credit history to determine the likelihood that the applicant would repay a future loan in a timely manner. More recently, computer models have been developed to perform such evaluations. These models produce numerical credit scores that function as a shorthand version of an applicant's credit history to facilitate quick credit assessments.

During the second half of the 1990s, mortgage underwriting increasingly incorporated credit scores and other automated evaluations of credit histories. As of 1999, approximately 60 to 70 percent of all mortgages were underwritten using an automated evaluation of credit, and the share was rising[2].

The automated quantification of the information in credit reports has not simply been used to decide whether or not to extend credit, but has also been used to set prices and terms for mortgages and other consumer credit. In certain cases, even very small differences in scores can result in substantially higher interest rates, and less favorable loan terms on new loans. Credit scores are also used to determine the cost of private mortgage insurance, which protects the lender, not the consumer, from loss but is required on mortgages with down payments of less than twenty percent[3]. Lenders also review credit histories and/or credit scores to evaluate existing credit accounts, and use the information when deciding to change credit limits, interest rates, or other terms on those accounts.

In addition to lenders, potential landlords and employers may review credit histories and/or credit scores. Landlords may do so to determine if potential tenants are likely to pay their rent in a timely manner. Employers may review this information during a hiring process, especially for positions where employees are responsible for handling large sums of money. Utility providers, home telephone, and cell phone service providers also may request a credit report or credit score to decide whether or not to offer service to consumers.

Insurance companies have also begun using credit scores and similar insurance scores – that are derived from the same credit histories – when underwriting consumer applications for new insurance and renewals of existing policies. Credit information has

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[1] Klein, Daniel. 2001. Credit Information Reporting. Why Free Speech is Vital to Social Accountability and Consumer Opportunity. *The Independent Review*. Volume V, number 3.

[2] Straka, John. 2000. A Shift in the Mortgage Landscape: the 1990s Move to Automated Credit Evaluations. *Journal of Housing Research*. Volume 11, Issue 2.

[3] Harney, Ken. August 18, 2002. "Risk-based pricing brings a big rate hike for some." *Washington Post*.

been used as a basis to raise premiums, deny coverage for new customers, and deny renewals of existing customers – even in the absence of other risk factors, such as moving violations or accidents. Some providers claim that credit scores are also used to offer insurance coverage to consumers who have previously been denied, or to lower insurance rates. This is a highly contested issue that is under review in dozens of state legislatures and insurance commissions.

Thus, a consumer's credit record and corresponding credit score can determine access and pricing for the most fundamental financial and consumer services.

III. Controversial Issues Affecting Consumers

The expanded use of automated credit evaluations has brought changes to the marketplace that have benefited consumers. However, given the tremendous impact credit scores can have on consumers' ability to access and afford basic necessities, the increased application of this tool has also raised serious concerns about the potential harm it can cause.

A. Speed

The growth in use of credit scores has dramatically increased the speed at which many credit decisions can be made. Especially for consumers with relatively good credit, approvals for loans can be given in a fraction of the time previously required, without any manual review of the information. It is unlikely that underwriting the recent record volumes of mortgage originations would have been possible without the efficiencies provided by credit scoring.

B. Customized or Risk-Based Pricing

Credit scores, as a quantitative shorthand for credit histories, increase the potential for customized pricing of credit based on the risk an individual poses. Some argue that charging more to consumers defined as higher risk would remove some of the cost of risk carried by the general consumer population, and would allow for price reductions among consumers who pose less risk. Others argue that the savings have not been – and are unlikely to be – passed on to consumers who pose less risk, and scoring systems simply allow lenders to extract greater profits from consumers who do not attain target credit scores. The potential for increased profits from consumers whose credit is scored low also creates a disincentive to helping consumers correct errors in their credit records.

The increased speed at which underwriting decisions can be made has created pressure to complete credit applications more quickly. Some contend that the combination of this increased pace and the increased ability to customize the price charged based on credit allows lenders to approve a larger share of consumers for loans, but not necessarily at the best rates for which they qualify. While many consumers can feel overwhelmed by large credit based transactions, such as mortgage closings, consumers who do not have a solid understanding of credit scores, or who do not objectively know their creditworthiness, are even more vulnerable to high-pressure tactics to accept any offer of credit, regardless of terms, and may unnecessarily be charged higher rates.

C. Effect on Discrimination

Some have argued that increased reliance on automated reviews of credit has the potential to reduce discrimination in lending because the automation of decision-making removes or reduces the influence of subjective bias. Others have argued that the factors used to determine a credit score may not completely remove bias from approval and pricing decisions. Furthermore, lenders are still free to offer differential levels of

assistance in dealing with errors in credit records, or with other issues related to credit scores, such as providing rescoring services. Such discretionary assistance remains a potential source of bias in the approval process whether a consumer is underwritten with an automated system or with manual underwriting. Federal banking regulators do conduct examinations to ensure against overt discrimination on prohibited bases such as race, sex, marital status, or age in credit score design or in lenders' application of those scoring systems, such as through the use of overrides[4].

D. Statistical Validity

Supporters of credit scoring note that credit scores have statistical validity, and are predictive of repayment behavior for large populations. However, this does not mean that credit data are error free, nor that credit scoring models are perfect predictors of individual creditworthiness; it only means that they work on average. While the systems do present an accurate risk profile of a large numbers of consumers, data users who manage large numbers of accounts priced by credit risk have a greater tolerance for errors in credit scoring systems than consumers do. Among those consumers who are inaccurately characterized, businesses can balance errors in their favor against errors in favor of consumers; so long as enough consumers are charged higher rates based on inflated risk assessments to cover the losses from those who are charged lower rates because the systems incorrectly identified them as low risk, these businesses will suffer no material harm. Consumers on the other hand do not have a similar tolerance for errors in transactions governed by credit reports and credit scores. If they are overcharged because of an error in the credit scoring system, there is no countervailing rebate to set the statistical scales even. Credit scores should not function as a lottery in which some consumers "win" by being viewed more favorably than they deserve to be, while others "lose" by being viewed less favorably than they should be.

While debate surrounding the broad implications of credit scoring continues, its use is already strongly established in the American financial services industry. Meanwhile, concern over the integrity of credit scoring itself focuses on two dimensions – the fairness of the models that interpret the data and the accuracy of the underlying credit related data.

E. Untested Scoring Formulas

Even if all credit data regarding consumers held at credit repositories were accurate, complete, and current, there would be significant concerns about the fairness of automated credit scoring programs. Converting the complex and often conflicting information contained in credit reports into a numerical shorthand is a complex process, and requires a significant number of interpretive decisions to be made at the design level. From determining the relative influence of various credit-related behaviors, to the process used to evaluate inconsistent information, there is a great potential for variance among scoring system designs.

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[4] See for example Appendix B of the Office of the Comptroller of the Currency's *Comptroller's Handbook for Compliance, Fair Lending Examination Procedures*, available at http://www.occ.treas.gov/handbook/fairlep.pdf

Despite the gatekeeper role that these scoring systems play regarding access to credit, housing, insurance, utilities, and employment, as well as pricing for those essentials, exactly how the formulas perform the transformation from credit report to credit score is a closely guarded secret. For consumers, regulators, and even industry participants who rely on the computations in their decision-making, the scoring models largely remain a "black box." No scholarly reviews of this extremely powerful market force have been permitted, and apart from reviews by federal banking regulators to protect against discrimination no government regulator has insisted that they be examined to ensure that they are adequate and fair.

Recently, after California passed a law requiring all consumers in the state to have access to their credit scores, several companies, including Fair, Isaac, and Company, Equifax, Experian, and Trans Union, Fannie Mae, and Freddie Mac have voluntarily provided general information about the information that is used to calculate a credit score or to evaluate a mortgage application, and how that information is generally weighted. In addition, for a fee, consumers can access score simulators that give some approximation of the impact of various behaviors on their credit scores.

F. Inaccurate credit reports

The most fundamental issue connected to credit scoring is the level of accuracy of the information that forms the basis for the scores. Regardless of whether lending and pricing decisions are made by a manual or automated review of a consumer's credit, the potential for inaccuracies in credit reports to result in loan denials or higher borrowing costs is a cause for concern. Several organizations have conducted studies and surveys to quantify the pervasiveness of credit report errors, with widely ranging findings regarding how many credit reports contain errors (from 0.2% to 70%).

A 1993 study by the Public Interest Research Group[5] found that 29% of credit reports contained errors that could result in the denial of credit (defined as false delinquencies, or reports listing accounts or public records that did not belong to the consumer). The study also found that 41% of reports had incorrect demographic identifying information, and 20% were missing major credit cards, loans, or mortgages. In total, 70% of reports contained an error of some kind. This study asked 88 consumers to review their credit reports from each of the three major credit repositories for errors. A total of 133 reports were reviewed.

Consumers Union has conducted two surveys of credit reports in which consumers were asked to review their credit reports for accuracy. A 1991 survey[6] found that 20% of credit reports contained a major inaccuracy that could affect a consumer's eligibility for credit, and 48% contained inaccurate information of some kind. In addition, almost half of survey respondents found that their reports omitted some of their current accounts. In

[5] *Mistakes Do Happen*. Public Interest Research Group. March, 1998.
[6] "Credit Reports: Getting it Half Right." *Consumer Reports*. July, 1991. p. 453.

this survey, 57 consumers reviewed total of 161 reports. A 2000 survey[7] found that more than 50% of credit reports contained inaccuracies with the potential to result in a denial, or a higher cost of credit. The errors included mistaken identities, misapplied charges, uncorrected errors, misleading information, and variation between information reported by the various credit repositories. These results reflect the review of 63 reports by 25 consumers.

A 1992 study conducted by Arthur Andersen[8], commissioned by the Associated Credit Bureaus (now known as the Consumer Data Industry Association) used a different methodology to conclude that the error rate was much lower. This study reviewed the behavior of 15,703 consumers who were denied credit based on a credit grantor's scoring system. From this sample, 1,223 consumers (7.8%) requested their credit report from the issuing credit repository, and 304 consumers (1.9% of the total sample) disputed the information on the report. Of these, 36 disputes (11.8% of those who disputed, or 0.2% of the total sample) resulted in reversals of the original credit denial.

A 1994 study conducted by the National Association of Independent Credit Reporting Agencies (now known as the National Credit Reporting Association) represents a third approach to the question of credit report accuracy. Examining a total of 1,710 files, this study reviewed a three-repository merged infile (which contains the credit reports from all three credit repositories), and conducted a two-repository Residential Mortgage Credit Report, or RMCR (in which all conflicting data in the two credit repository reports and the application form is verified with each creditor, and a consumer interview is conducted) for each file. The results showed missing, duplicated, and outdated information in credit files. Among the three-repository merged infiles: 29% of accounts, also known as trade lines or trades (past and current loans, lines of credit, collections, etc.), were duplicates, 15% of inquiries were duplicates, 26% of public records were duplicates, 19% had outdated trades, and 44% had missing information, such as balance or payment information. Among the RMCRs: 19% had trades added based on information from the loan application, 11% had trades added based on investigations, 16.5% had derogatory information deleted as a result of the investigation, 3% had trades removed because they did not belong to the borrower, and 2% had errors in public records corrected.

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[7] "Credit Reports: How do potential lenders see you?" *Consumer Reports.* July 2000. P. 52-3.

[8] Described and cited in Klein, Daniel, and Jason Richner. 1992. "In Defense of the Credit Bureau." *Cato Journal.* Vol 12. Issue 2. pp. 393 - 411.

IV. How Does the System Work?

The complex system for reporting and reviewing credit involves a large number of participants who fall generally into one of six categories: consumers; data repositories; data users; data furnishers; credit reporting agencies; and analytical service providers. Approximately 190-200 million consumers have credit reports maintained by the three major credit repositories (Experian, Equifax, and Trans Union)[9]. Data users include lenders, insurers, landlords, utility companies, and employers, who review the credit information in consumers' credit reports to make decisions about extending and pricing credit, offering and pricing insurance policies, and providing utility services, rental housing, or offers of employment. Some, but not all, data users are also data furnishers, and regularly report information about consumers' accounts to the credit repositories, who add the information to consumers' credit reports. It is the understanding of the researchers that there is currently no legal requirement that any business report information to any credit bureau, although once a business furnishes data, there may be certain obligations that arise in connection with consumer disputes. In 1996, Congress recognized that errors by data furnishers contributed to credit reporting problems, so the Fair Credit Reporting Act was amended to impose accuracy duties on data furnishers. These duties are generally subject only to administrative enforcement under the FCRA, with no private right of action for consumers unless the data furnisher fails to comply with re-investigation duties.

Generally, insurers, landlords, utility companies, and employers do not provide positive account information to repositories, nor do all lenders. Also, data enters consumers' records from collection agencies that report on the status of accounts in collection, and

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[9] Credit repositories attempt to maintain the following information in their databases, but not all data is available or provided for every account, and different repositories may collect different levels of information, especially consumer identifying information:
Consumer identifying information (Consumer's name; social security number; date of birth; former names or aliases; current and former addresses; employer; income; position; and employer's address)
Public records information (source of information; date recorded; amount of liability; type of record (e.g. judgment, tax lien, or bankruptcy), docket number)
Collections information (collections company's name; date opened; last date verified or updated by collections company; date closed, the amount placed for collection; balance outstanding; name of original creditor; the method of payment (a numerical code indicating if the account is current, late, in collection, etc.); any remarks)
Creditor information (creditor's name; account number; level of responsibility for consumer to pay account (primary account holder, joint account, authorized user, etc.); type of loan (revolving, installment, mortgage, line of credit, etc.) or collateral for an installment loan; date opened; date of last activity; date closed or paid; highest amount ever owed by consumer; the credit limit on the account; the balance due; payment size and frequency; any amount past due; date of maximum delinquency; dollar amount of maximum delinquency; payment pattern for last 12-24 months (indicating for every month whether the account was paid as agreed, or late, and by how many days); the number of months reviewed; number of times account was late by 30, 60, or 90 days; the method of payment (a numerical code indicating if the account is current, late, in collection, etc.); any remarks)
Credit Inquiries (list of companies who have requested consumer credit information; date the inquiry was made)
Any consumer statement, such as an explanation of a dispute

from repository searches of public records such as bankruptcies, liens, and judgments. In addition, governments may report directly to the repositories if consumers fail to pay child support, have unpaid parking tickets, or have been overpaid for unemployment benefits. Credit reporting agencies assist some data users by consolidating information from the three credit repositories, and offering services to verify and update information in credit reports. Credit reporting agencies primarily facilitate and support the decision making process involved with mortgage underwriting. Credit reporting agencies and credit repositories both provide credit reports to data users, and are considered "consumer reporting agencies" under the Fair Credit Reporting Act. As consumer reporting agencies, these entities share certain obligations, some of which are described below. Analytic service providers also help data users interpret the information in consumers' files, and include companies such as Fair, Isaac, and Company, which produces analytical tools that generate credit scores, and the Government Sponsored Enterprises (GSEs) Fannie Mae and Freddie Mac, who produce tools that help lenders interpret credit information in conjunction with mortgage applications. Some lenders and mortgage insurance companies have also created tools that help them interpret credit information for mortgage applications.

A. Non-Mortgage Credit

When a consumer applies for non-mortgage credit, such as a credit card, unsecured line of credit, or installment loan (e.g. for an automobile, or furniture), the potential creditor (data user) can request a credit report (with or without a credit score) from one, two, or three of the credit repositories. A repository that receives such a request will send the credit report to the potential creditor, and record an inquiry on the consumer's credit report. The creditor can use the information in the credit report to help decide whether to extend or deny credit to the consumer, and what the interest rate and other fees will be for this credit. If the creditor accepts the application, they may then act as a data provider, and report information on the consumer's payment history to one, two, or three of the credit repositories. Generally account information can be both positive and negative. On-time payments have a positive influence while late payments have a negative influence. However, the amount of positive influence a consumer receives from a timely payment may vary based on the type of creditor. For example, timely payments to a prime credit card lender may have a greater positive influence on a score than timely payments to a lender considered less favorable, such as a furniture or consumer electronics store. If the creditor denies credit, or offers less than favorable terms, based on the credit report or score, federal laws require them to make certain disclosures to the consumer, including the name of the consumer reporting agency that supplied the credit report and how to contact the agency. For non-mortgage applications the consumer reporting agency is usually a credit repository. Once given this information, the consumer can contact the repository to request a copy of his or her credit report[10]. If the

[10] However, the report the consumer receives may differ from the report that the lender reviewed. If consumers submit more comprehensive personal identifiers in their request for a report from the credit repository, they may not see the exact report that was used to underwrite their credit application, especially if the underwriter made any errors such as misspellings in the consumer's name or transposing digits in the consumer's social security number, or merely submitted an application with less information about the

consumer has suffered an adverse action based on the credit report, the copy must be provided by the repository free of charge. Consumers who have not suffered an adverse action can also review their credit reports at any time, but are subject to a fee of approximately $9. Six states (Colorado, Georgia, Maryland, Massachusetts, New Jersey, and Vermont) require repositories to provide credit reports to consumers free of charge once a year upon request. Also, if a consumer is receiving welfare, is unemployed, or suspects that he or she is a victim of identity theft, the consumer may obtain a credit report free of charge. For an additional charge, the consumer can have a credit score computed and included with the credit report under any of these circumstances.

B. Employment and Services Other Than Loans

When a consumer applies for employment, or for a service that reviews credit histories, (such as insurance, an apartment rental, utilities, cell phone accounts) these data users may also request and receive a credit report and/or scores from one or more repositories, to be used to evaluate the consumer's application. Job applicants or employees must provide consent before a report is pulled, but other users derive a permissible purpose to review credit from the consumer's act of submitting an application, except in Vermont, where oral consent is required to review a credit report for credit uses.

However, while these entities will review credit, and approve or deny the application based on the credit report and/or score, they generally *do not* report positive account information back to the credit repositories. They often, however, indirectly report derogatory information by placing accounts for collection. Accounts that have been placed for collection will be reported to one or more of the credit repositories.

C. Other Data Providers

The reverse is true of collection agencies, which provide information to the repositories, but do not use credit data to evaluate consumer creditworthiness, although they may use information in credit reports to locate debtors. Repositories also obtain information by requesting it from public records and government entities and when certain government entities report directly to the repositories, such as for delinquent child or family support payments, unpaid parking tickets, or overpayments of unemployment benefits. Information from collection agencies and public records is primarily derogatory information, such as when an account was sent to collection, or a bankruptcy was filed, but may also include positive information such as the satisfaction of a bankruptcy or the repayment of a collection, and when such repayments occurred. Because government entities do not report information about bankruptcies, liens, civil suits, or judgments to repositories, the repositories are responsible for maintaining the accuracy of such public record information in credit records, such as whether a bankruptcy has been satisfied or a lien has been released. Any type of collection will have a negative impact on a credit history, regardless of whether the debt was related to an account for which a credit report was used to establish credit (e.g. for loans or utilities, as well as for child or family

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consumer's identity. While there is no legal prohibition on lenders providing consumers with the actual credit report used in their decision-making process, there is likewise no requirement that they provide it.

support or parking tickets). Collections, either from a collection agency or other type of account, and public records will continue to have a negative impact after they have been paid or otherwise satisfied, although they will have a less negative impact if they are satisfied, and will have a less negative impact as time passes.

D. Mortgage Credit

The process is more complex for a mortgage transaction. When consumers apply for a mortgage, the mortgage lender (who may be a mortgage banker or mortgage broker) has a number of options that are influenced by what the lender intends to do with the loan after the closing. The lender can hold onto the loan and collect mortgage payments from the consumer until the loan is paid off (known as holding a loan in portfolio), thereby assuming all the risk for borrowers defaulting, or the lender can sell the loan to the secondary market. If a loan is sold, the originator loses the access to future profits from mortgage payments, but also, so long as the loan meets all the standards set forth by the purchaser of the loan, retains no risk should the borrower default. The originator retains the profits from the cost of the mortgage transaction and underwriting, and has a replenished supply of capital to make other loans. The two primary purchasers of loans in the secondary market are the government sponsored enterprises (GSEs) Fannie Mae and Freddie Mac. Lenders may also seek a government guarantee for the loan through the Federal Housing Administration (FHA) or Department of Veterans' Affairs (VA) programs.

1. Portfolio Loans

If a lender is not planning to sell the loan to the secondary market, that lender will usually order a merged credit report, which incorporates information from all three credit repositories, including the three credit scores. While a lender will generally use reports from all three repositories to underwrite a loan, it may use a single credit report to offer a pre-approval. Also, for second mortgages and lines of credit secured by the home, lenders generally underwrite using one credit report. There is no legal or regulatory requirement to use a certain number of credit reports to underwrite a mortgage. However, if a lender wishes to sell the loan on the secondary market, or receive an FHA or VA guarantee on the loan it may be required to follow certain protocols.

A lender planning to hold a loan in portfolio will order a merged credit report with scores from a credit reporting agency, passing on information about the consumer such as name, social security number, current and previous addresses. The credit reporting agency will then pass on the request to a merging company, which will request credit reports from all three credit repositories and will compile the information from each report returned to them, according to their merging logic (a set of automated commands designed to identify shared information and present the three reports in a summarized format). The individual credit reports as they read prior to merging and credit scores are also returned to credit reporting agency. The credit reporting agency will then supply this information to the lender.

Based on the information in this report, and other information such as the applicant's income and the loan to value ratio of the mortgage requested, a lender will decide whether or not to originate the loan, and at what price (interest rate, points, etc.). A number of companies, such as mortgage lenders Countrywide and GE Capital and mortgage insurers PMI Mortgage Insurance Company and Mortgage Guarantee Insurance Corporation, have developed automated underwriting (AU) systems that can provide automated evaluations of a loan application based on information from the consumer's credit report and additional information such as income and loan to value ratio.

If the lender is hesitant to originate a loan because of derogatory information in an applicant's credit report, and has reason to believe that it may be incorrect, or outdated, the lender can purchase a reinvestigation of the credit information from the credit reporting agency. This entails contacting original creditors, collection agencies, and government records clerks, to verify and update questionable information contained in the merged credit file. These services can mean corroborating as few as one entry in a credit file, or it can be a comprehensive review in which every entry with conflicting information is corroborated. An alternative called a Residential Mortgage Credit Report (RMCR) involves reviewing two or three credit repository reports, verifying all conflicting data in the credit repository reports and the application form with each creditor, updating any account with a balance over 90 days old, conducting a consumer interview, and other verification services. Such services provide more current information to a lender for their consideration when underwriting a mortgage, but they do not alter information maintained by any of the credit repositories, nor do they change a borrower's credit score[11]. A credit reporting agency may have greater success obtaining clarification of inconsistencies in an applicant's record than the applicant would have acting on his or her own, and the credit reporting agency's reinvestigation is more likely to be trusted by the lender than the word of a consumer regarding current status of accounts. This service adds cost to the credit underwriting process (roughly $50-100). For consumers who have credit scores far higher than the requirements to qualify, this would be an unnecessary service. However, for those who face loan denial, or dramatically higher borrowing costs because of errors in their reports, the savings over the life of the loan, or in some cases with a single mortgage payment, could more than compensate for the increased cost of this reinvestigation. After the reinvestigation, the credit reporting agency will provide the updated and verified information to a lender who can consider the information while making the final underwriting decision[12].

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[11] When a reinvestigation produces changes in the information contained in a repository's credit report, the credit reporting agency is required to pass the information on to the repository within 30 days. However, once this occurs, there is no requirement that the repository update the consumer's credit file, nor a time frame within which they must respond. It would be far better for consumers if the credit repositories were under an obligation to update the consumer's file, or at the very least to respond with the results of their own reinvestigation within 30 days. In the mean time, the disputed information should be part of the credit report provided to any data users who request the file as the reinvestigation is underway.

[12] Lenders are not required to accept the results of a reinvestigation, and the automated underwriting systems of key secondary market actors Fannie Mae and Freddie Mac do not. Instead they require all changes to be made through a process known as rescoring, described in greater detail below.

2. Loans Sold in the Secondary Market

In the current marketplace, few loans are held in portfolio, especially those loans originated by brokers. Instead, many are sold into the secondary market to entities that bundle large numbers of mortgages into securities that are sold to investors – a process known as securitization. The major actors in this part of the market are the Government Sponsored Enterprises Fannie Mae and Freddie Mac, although a number of large national lenders also purchase and securitize loans. If mortgage originators can sell a loan, then they will have renewed capital to make another loan, and will still have profit derived from the costs charged to the consumer for the transaction. Thus selling a loan into the secondary market is an attractive option.

Government Sponsored Enterprises (GSEs) Fannie Mae and Freddie Mac have both developed automated underwriting systems which evaluate mortgage applications based on the information in credit reports, as well as additional information such as income and loan to value ratio, in a very short amount of time. Lenders can submit a loan application to these automated underwriting systems prior to approving a loan and receive an indication from the GSE that they will purchase the loan. Each GSE has a different protocol for submitting loan applications and for obtaining and using credit histories.

Automated underwriting (AU) systems do not approve or deny loans, but can provide an indication of whether a GSE will purchase the loan, and thereby assume the risk of default with respect to the loan. A lender can override an AU decision and underwrite the loan manually, but if they do so, they must agree to buy back the loan if it defaults and is found to have violated the purchaser's loan standards. While a loan with an AU approval that meets all the purchaser's standards and complies with the warranties of sale carries no risk for a lender or broker, a loan that has been approved by overriding AU standards does carry significant risk. Many loans are still manually underwritten, but the majority of applications are reviewed with an automated underwriting system, and this share is expected to grow in coming years.

Brokers are the dominant originators of loans, but they do not have the financial reserves of banks, thrifts, and other financial institutions. They rely on being able to sell their loans almost immediately. This is much more difficult without an AU approval. Also, the efficiencies of credit scoring and automated underwriting have made the loan approval process so fast for loans with good credit that the additional effort required to correct errors, or otherwise revisit the details of the loan file, acts as a substantial deterrent to mortgage lenders working on these loans. In this market, where record volumes of loans are being originated, there is a tremendous incentive to deal only with the loans that will be approved the fastest – the loans that pass the credit score/ automated underwriting test[13].

[13] The economic pressure on originators to underwrite loans that will require the least amount of work existed prior to the introduction of automated underwriting systems. However, the development of automated underwriting has made the process so quick for some loans that the relative additional time required to complete a more complicated loan is proportionally greater. Some have noted that decreasing

3. Credit Rescoring

If lenders wish to update or correct information in a credit report, the lender cannot use the reinvestigation process for portfolio loans outlined above and resubmit the loan through the automated underwriting systems of Fannie Mae and Freddie Mac. The reinvestigation process outlined above does not change the data on record at the repositories and only reports that contain credit scores and have been generated at the repository level are acceptable for submission to Fannie Mae's and Freddie Mac's automated underwriting systems. Lenders can choose to manually underwrite the loan and submit it with documentation of the errors in the first credit report.

If a lender is unwilling to underwrite the loan manually, and a consumer can afford to wait several weeks, the consumer can submit a dispute directly to the credit repository, and the repository has 30 days to respond to the dispute. However, if the borrower wishes to correct an error in an expedited time frame, lenders who submit loans through automatic underwriting systems would have to order a service known as *rescoring*. In this process, the credit reporting agency will obtain the necessary documentation regarding the disputed account or accounts and contact the rescoring department within the relevant repository. This department will verify the information provided to them by the credit reporting agency, either through spot checks, or by verification of every update, within a few days. After this process is complete, a new credit report with new credit scores can be requested, and the loan can be underwritten with the more current information. In addition, the information is changed at the repository level, and will be reflected in future credit reports for this consumer. This has recently become a very expensive service for a lender to purchase. Since the summer, two of the three repositories have increased prices for this service by as much as 400%[14].

Regardless of how the underwriting takes place, if the loan is originated, the mortgage lender, or the entity holding and servicing the loan if it is sold, may become a data provider. The servicer will report information about consumer's payment behavior related to their mortgage to one, two, or three of the credit repositories, who will add this information to the credit report.

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the time required to underwrite the easiest loans potentially frees underwriters to devote more time to more difficult loans.

[14] According to reports from a number of credit reporting agencies, Transunion and Equifax have recently changed their pricing. Transunion previously charged $5.00 per account entry, or trade line, regardless of whether the account to be updated was a joint or individual account. As of June of this year, Transunion charges $20 per trade line to update an individual account, and $25 to update a joint account. Equifax has recently increased the cost from approximately $5 per rescore to $15 per tradeline for a joint or individual account, or $30 for a same day request. Both repositories have clearly stated that these costs are not to be passed on to the consumer. It is also of note that these two repositories compete with credit reporting agencies in offering rescoring services, and charge between $8-10 per trade line to lenders who contact them directly.

4. Federal Housing Administration (FHA) and Department of Veterans' Affairs (VA) Loans

Lenders who wish to submit loans for an FHA or VA guarantee must also follow certain protocols regarding the submission of credit reports, but have a number of options to choose from. For example, the FHA program accepts either a three repository merged credit report, a Residential Mortgage Credit Report (RMCR), or applications processed through the automated underwriting systems of Fannie Mae and Freddie Mac. The RMCR option is required to be made available to consumers who dispute information contained in their credit reports[15]. In addition to the options offered to lenders submitting loans for FHA guarantees, the VA program accepts applications processed through the automated underwriting systems of PMI Mortgage Insurance Company and Countrywide[16].

[15] See FHA Lender's Handbook number 4155.1 chapter 2, section 4 "Credit Report Requirements," and Mortgagee Letters 98-14 and 99-26, available at www.hudclips.org.
[16] See VA Lender's Handbook, VA Pamphlet 26-7, available at http://www.homeloans.va.gov/26-7.pdf.

V. Study Design

A. Phase One

The first phase of the study consisted of a manual review of 1704 credit files, archived by credit reporting agencies. These files had been requested by mortgage lenders on behalf of consumers actively seeking mortgages. The three credit reporting agencies that generated these files are located in different regions of the county (West, Midwest, and East) and serve mortgage lenders in a total of 22 states.

Only archived credit files that had been generated by mortgage lender requests for reports and scores from all three major credit repositories (Experian, Equifax, and Trans Union) were included in the review. Files were included in the study by reviewing consecutive archived files dating from June 17 to June 20, 2002[17].

Ensuring the anonymity of all data collected and examined for this study was a paramount concern for both CFA and NCRA. The data collection procedures were designed with particular care to ensure that no personal identifying information from these credit files was recorded for this study. No reports were provided in paper or electronic form, and no names, social security numbers, account numbers, addresses, or other consumer identifying information was recorded. All comments regarding inconsistencies were recorded in generic form. For example, the fact that digits in a social security number were transposed in one file would have been recorded, but the actual number would not have been. Similarly, if a consumer's file showed apparent confusion between credit data recorded under a consumer's first name and credit recorded under the consumer's middle name, this would have been noted, but the names would not have been recorded. While the files were being reviewed, the National Credit Reporting Association (NCRA) and the Consumer Federation of America (CFA) took precautions to limit the access to identifying information to the credit reporting agencies' representatives, who worked with a representative from the Consumer Federation of America in each office. The credit reporting agency representative retrieved the files, and conveyed only the relevant generic information verbally to the CFA representative for recording. As a result, the data examined for this study contains only generic information about variations in credit data, but does not link that data to any consumer or consumers.

For each file, the credit scores from each of the three major credit repositories were recorded. If a repository returned a report, but the report was not scored, or if the repository could not locate a report for the applicant, this information was also recorded. In addition, researchers noted if a file contained multiple reports from any repository, and recorded the scores for these reports, if the report was scored. Residential Mortgage Credit Reports (RMCRs), for which credit reporting agencies verify and update

[17] For agencies that serve multiple time zones, additional measures were employed to include records from consumers in all regions. For example, every second file from one agency was reviewed rather than every file.

information in the credit report, were identified as such[18]. For joint application files, the applicant's and coapplicant's reports were treated as separate reports. Approximately 500 files that contained a credit score from each of the three repositories were recorded at each agency.

A major focus of the study was for those applicants closest to the boundary between the lower priced prime mortgage lending market and the higher priced subprime mortgage lending market, which, in addition to higher costs overall, exposes borrowers to greater risks of predatory lending. A large variance between scores on a consumer's file is a likely indication of drastically incomplete and/or incorrect information in that consumer's credit reports, and a cause for concern. For those closest to the boundary between prime and subprime, generally considered to be a credit score of 620, the impact of even small variances can be severe and translate directly into a greater financial burden.

Thus, more detailed information about each file was recorded: 1) if the file had widely varying scores among repositories (defined as a range of 50 points or greater between the high and low score); 2) if the file was near the threshold between prime and subprime classification with a substantial variance between scores (defined as having a middle score between 575 and 630, and a range between high and low scores greater than 30 points); or 3) if the file was directly at the threshold between prime and subprime classification (defined as having a high score above 620, and a low score below 620). For files that met these criteria, the four primary factors contributing to the credit score, provided by each repository as part of the credit report, were recorded.

Finally, if the file met criterion 2 (had a middle score between 575 and 630, and a range between high and low scores greater than 30 points), or if the file had a variation in scores of more than 90 points, the specifics of the three credit reports were reviewed in an attempt to identify any obvious inconsistencies between the repositories. When possible, researchers made a determination based on this review of whether any inconsistencies seemed likely to be artificially lowering or raising the score reported by one or more repositories.

B. Phase Two

The goal of Phase Two was to test the representational validity of the findings in Phase One by comparing key statistics from that sample of credit files with the same statistics for a much larger sample of credit files. Specifically, the goal was to compare the range among credit scores, and the frequency of explanations provided to consumers.

This phase of the study reviewed credit scores and the explanations for those scores provided by the repositories for a separate sample of 502,623 archived credit files. This larger sample was collected electronically and did not involve a manual review of each file. As with the first phase, these files had been requested by mortgage lenders on behalf of consumers actively seeking mortgages, and only credit files generated by a request for

[18] Conducting and RMCR does not affect the credit scores, and when in depth reviews of the reports were conducted on RMCRs, the comments referred to the status of the report prior to updates or verification.

the reports and scores from all three major credit repositories (Experian, Equifax, and Trans Union) were included.

If a repository returned an unscored report, or if the repository could not locate a report for the applicant, this information was recorded. In addition, the presence of multiple reports from any repository and the scores for these reports, if scored, were recorded. For joint application files, the applicant's and coapplicant's reports were treated as separate reports.

For this phase of the study, the zip code for each file was recorded, as was information about the type of services requested for each file, and the version of the scoring model used to calculate each score. By matching zip codes with states, it was possible to determine the geography represented by these files. Phase Two analyzed files from every state and territory in the nation, with a wide distribution of files from all regions. (34% from the Northeast, 27% from the Southeast, 30% from the Midwest, 6% from the West[19], 4% with no zip code information to indicate a state, and 0.08% from U.S. territories.)

Unlike the files in Phase One, which constitute a snapshot of the profile of consumers seeking mortgage credit over just several days, the files reviewed in Phase Two date from December 8, 2000 to September 20, 2002.

C. Phase Three

Phase Three explored the prevalence of specific errors in a representative sample of credit reports, and attempted to quantify how many files contained inconsistent, missing, or duplicated information. Researchers used a 10% sample of all files reviewed at one site in Phase One and reviewed account data and public records data for errors of omission (information not reported by all repositories) and errors of commission (inconsistent information between repositories, or duplicated information on a single repository).

This phase tabulated how many consumer files were missing accounts on at least one repository report that appeared on other repository reports, treating accounts of different type and status separately. The same criteria used to tabulate missing accounts were used to tabulate the number of files that contained duplicate reports of accounts on a single repository report.

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[19] The researchers were concerned that there were disproportionately fewer files from the western region, particularly a disproportionately low number of files from California. However, subsequent analysis showed that key statistics and distribution of score ranges for the files from this region, and from California specifically, were virtually identical to those for the entire sample. Therefore, the researchers are confident that this under-representation is not introducing any bias into the findings. (The regions were defined as follows Northeast: ME, NH, VT, NY, MA, CT, RI, PA, NJ, DE, DC, MD, WV, VA. Southeast: NC, SC, GA, TN, KY, AL, MS, FL, LA, AR, TX, OK. Midwest: OH, IN, IL, MI, WI, MN, ND, SD, IA, MO, NE, KS. West: AZ, NM, MT, WY, CO, UT, NV, CA, ID, OR, WA, AK, HI. Territories: GU, PR, VI.)

The seven types of accounts identified were mortgages, other installment loans, revolving accounts, other accounts not in collection, medical collections, child support collections, and other collections or charge offs. The researchers differentiated between the status of each non-collection account on the repository or repositories that did report the account. For accounts other than collections and charge offs (mortgages, other installment loans, revolving accounts, other accounts not in collection), the researchers differentiated between accounts that had no derogatory information, accounts that had late payments, accounts that had conflicting information regarding late payments on two repositories, and accounts that had inconsistent information regarding default. In addition, researchers noted if a mortgage had gone to foreclosure, and if a revolving account had been reported lost or stolen.

Files with duplicate or missing public records were tabulated, differentiating by type and status as well. Researchers tabulated missing and duplicate bankruptcy filings, liens, judgments, and civil suit filings, differentiating between two categories of status, those that had been filed, and those that had been recorded as released, satisfied, dismissed, or paid.

In addition to determining the number of files with missing and duplicate accounts, the researchers tabulated the number of files that contained certain inconsistencies between the three repositories regarding account details for accounts reported by all three. The inconsistencies of interest were: the number of payments recorded as 30 days late; the number of payments recorded as 60 days late; the number of payments recorded as 90 days late; the balance reported on revolving accounts or accounts in collection; the credit limit reported on revolving accounts; the past due amount; the method of payment (a code indicating if the account is currently being paid as agreed, is currently late, was late, but is now paid, etc.); the date of last activity on defaulted accounts; and the type of account. Finally, the researchers tabulated the number of files that reported a defaulted account, but did not report the date of last activity on that account.

VI. Findings

A. Phase One

1. Almost One in Ten Files was Missing a Credit Score from at Least One Repository.

Of the 1704 unique files reviewed, 1545 files had at least one score reported from each major credit repository. The remaining 159 reports were excluded from the statistical analysis because of one or more missing scores. Table 1 details the status of the files included and excluded from the analysis.

Table 1. Status of Files Reviewed in Phase One.

1390	Files with exactly 3 repositories scored, with no additional scores or unscored reports
114	Files with 3 repositories scored but with additional scores and unscored reports
41	Files with 3 repositories scored but with additional unscored reports
1545	Subtotal: number of files with 3 bureau scores -- included in analysis
58	Files with only 2 repositories scored*
26	Files with only 1 repository scored*
62	Files with no repositories scored*
13	Duplicate files, test files or other errors that were thrown out
159	Subtotal: number of files excluded from analysis
1704	Total Files Reviewed

* Unscored files include cases where no file was returned (no hit on information input during request) as well as cases for which a file was returned but not scored.

2. A Substantial Number of Files Met the Criteria for Further Review.

Of those 1545 files that had valid scores from each repository, 591 files, or 38%, were flagged for further review, based on the three predefined criteria outlined in the previous section and below.

Of the 1545 valid files:

1. 453 files, or 29%, had a range of 50 points or more between the highest and lowest scores.
2. 175 files, or 11%, had a middle score between 575 and 630 and had a range of 30 points or more between the highest and lowest scores.
3. 250 files, or 16%, had high scores above 620 and low scores below 620.

These numbers do not total 591 because many files met multiple criteria. Table 2 provides more detail on the number of files that met each of the criteria.

Table 2. Number of Files that met Criteria for Further Review in Phase One

Met Criterion 1	453	
Met Criterion 1 only		273
Met Criteria 1 and 2 only		29
Met Criteria 1 and 3 only		79
Met all three Criteria		72
Met Criterion 2	175	
Met Criterion 2 only		39
Met Criteria 1 and 2 only		29
Met Criteria 2 and 3 only		35
Met all three Criteria		72
Met Criterion 3	250	
Met Criterion 3 only		64
Met Criteria 3 and 1 only		79
Met Criteria 3 and 2 only		35
Met all three Criteria		72
Met any of the three Criteria	**591**	

3. Numerous Files Contained Additional Repository Reports and Information not Relevant to the Consumer's Credit History.

Each file examined had been generated from a request for a merged file that included one report and one score from each repository. However, one in ten files (155 out of 1545) contained at least one, but as many as three, additional repository reports. These reports were not duplicate copies of reports, nor were they residual reports from previous applications for credit. These additional reports were returned from the same simultaneous request that produced the other reports in the file. For 114 of the files with additional reports, at least one, but as many as three of these additional reports also contained a credit score. It was unclear to researchers exactly how various systems would interpret these additional repository reports.

In some cases, an additional repository report was clearly reporting the credit activity of a separate person (no accounts from the additional report appeared on the three primary reports, and vice versa). However, it was very common for the additional report to contain a mixture of credit information, some of which belonged to the applicant, and some of which clearly did not. In some cases, applicants had split files that appeared to be the result of applying for credit under variations of their name.

Common reasons for returning additional repository reports included:

- ? Confusion between generations with the same name (Jr., Sr., II, III, etc.).
- ? Mixed files with similar names, but different social security numbers.
- ? Mixed files with matching social security numbers, but different names.
- ? Mixed files that listed accounts recorded under the applicant's name, but with the social security number of the co-applicant.
- ? Name variations that appeared to contain transposed first and middle names.
- ? Files that appeared to be tracking credit under an applicant's nickname.
- ? Spelling errors in the name.
- ? Transposing digits in the social security number.
- ? An account reporting the consumer as deceased.

4. Scores Reported by the Three Repositories for a Given Consumer Varied Substantially.

The review found considerable variability among scores returned by the three credit repositories. Because the repositories all use the scoring model provided by Fair, Isaac, and Company, this considerable variability among scores suggests considerable differences in the information maintained by each repository. Fair, Isaac, and Company attribute variations in credit scores to variations in credit data[20]. However, some have suggested that variations in credit scores may be occurring because not all data users are adopting new versions of the scoring model simultaneously. Researchers explored this concern using the data collected for Phase Two, and found the impact of different scoring models to be negligible.

Only one out of five files (328, or 21%) could be considered extremely consistent, with a range of fewer than 20 points between the highest and lowest scores. One in three files (475, or 31%) had a range of 50 points or greater between scores, and one in twenty files (81, or 5%) had a range of 100 points or greater between scores.

The average (mean) range between highest and lowest scores was 43 points, and the median range was 36 points. These statistics were reasonably consistent among the three regions[21].

Files with good and bad credit both appear susceptible to large point ranges, although consumers with poor credit may be slightly more susceptible. Chart 1 compares the middle score of all files with the range between the highest and the lowest score for that file. The middle score is often the score used for loan approval. On this chart there is slight correlation between middle score and score variability. The regression trendline, which in this case estimates the average score range for each middle score, is relatively flat, but is higher for files with worse overall credit. This means that, on average, files with low middle scores have slightly greater variability among their scores, relative to files with high middle scores.

For example, for a middle score of 550, the regression line has a value of 50, meaning that the average range between high and low scores for files with a middle score of 550 is 50 points. In comparison, the average range between high and low scores for files with a middle score of 700 is 40 points. Thus, files with a middle score that is 150 points lower have an average score variability that is 10 points greater.

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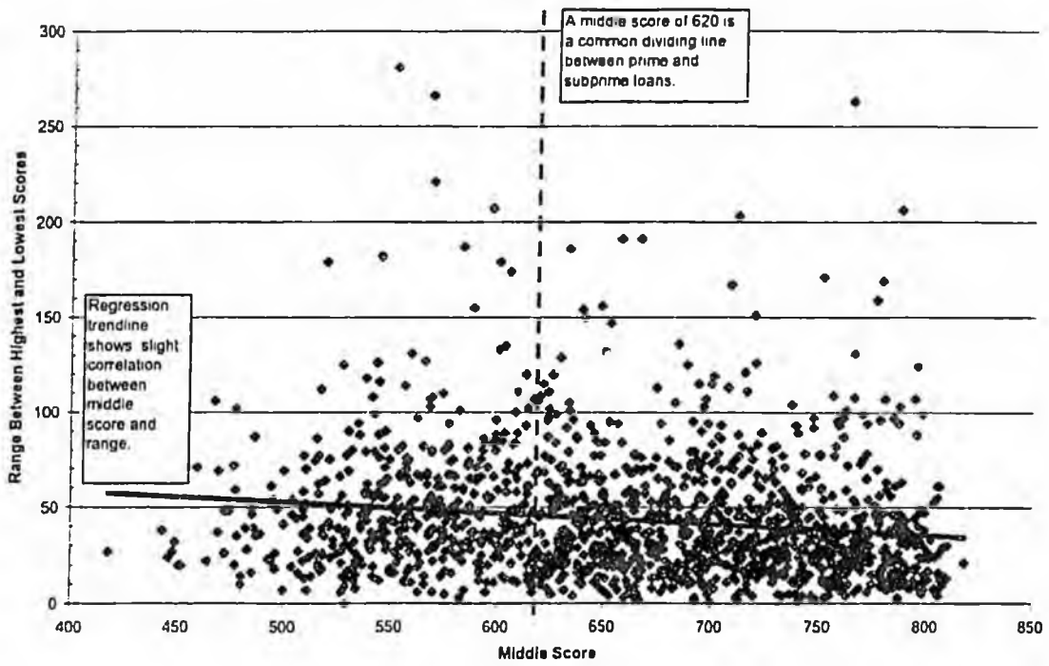
[20] Fair Isaac, and Company address the question of differing information at the three repositories as part of the explanation of how credit scoring works on their consumer oriented website, myFICO.com, stating: "Your score may be different at each of the three main credit reporting agencies: The FICO score from each credit reporting agency considers only the data in your credit report at that agency. If your current scores from the three credit reporting agencies are different, it's probably because the information those agencies have on you differs." (http://www.myfico.com/myfico/CreditCentral/ScoringWorks.asp)

[21] In the Eastern region, the mean range was 40 and the median range was 33. In the Midwestern region, the mean range was 43 and the median range was 36. In the Western region, the mean range was 46 and the median range was 38.

Chart 1. Middle Score v. Range Between Scores



5. Reports Contained Limited Information to Help Consumers Understand the Principal Reasons for their Credit Scores.

If a consumer is subject to an adverse action because of information in a credit report, federal laws (the Fair Credit Reporting Act and the Equal Credit Opportunity Act) require the lender to make certain disclosures. Adverse actions include, among other things, denial of credit, or denial of favorable terms on credit. The required disclosures include statements that an adverse action has occurred and that the decision was based in part or entirely on a credit report and the specific, principal reasons for the adverse action (generally four reasons are given)[22].

Thus, each repository report contains the four principal reasons contributing to the score returned, as identified by the automated process that calculated the score. The three repositories have approximately forty standard reasons that can be provided through this process. However, a mere four reasons were provided as the primary contributing reason on 82% of the reports reviewed (i.e. the reports in the 591 files that met any of the criteria for further review outlined in the study design). The four most frequently returned explanations for a consumer's score, with the frequency with which they occurred, were:

[22] National Consumer Law Center, *Fair Credit Reporting Act, Fourth Edition*. 2000.

- ? "Serious delinquency, and derogatory public record or collection filed" (37% of all explanations).
- ? "Serious delinquency" (20% of all explanations).
- ? "Proportion of balances to credit limits is too high on bank revolving or other revolving accounts" (15% of all explanations).
- ? "Derogatory public record or collection filed" (10% of all explanations).

It is important to note that three of the explanations ("Serious delinquency," "Derogatory public record or collection filed," and "Serious delinquency, and derogatory public record or collection filed") convey at least partially redundant information. These three explanations alone constituted 67% of all primary reasons provided.

6. In Depth Reviews Revealed Significant Errors and Inconsistencies, Some of Which were Likely Artificially Lowering Consumer Credit Scores, and Some of Which were Likely Artificially Raising Consumer Credit Scores.

In depth reviews were done of files that met the second criterion for further review (had a middle score between 575 and 630 and a range between high and low score of more than 30 points), or if the file had a range between scores of more than 90 points. In each case, researchers attempted to identify any obvious inconsistencies between the account level data on each of the repository reports, determine whether these inconsistencies were the result of omissions, or if they reflected conflicting credit data, and make a determination of whether the scores were likely being artificially inflated or artificially deflated by these inconsistencies.

There are obvious limitations to what the researchers could conclude during in depth reviews of credit file details without the aid of either creditors or consumers to corroborate or contest inconsistencies. The researchers attempted to approach these evaluations in as conservative a manner as possible; for example when derogatory information, such as a collection, was reported on only one repository, researchers tended to assume that the derogatory information was correct. However, when finer details were inconsistent, such as the current payment status of a given account, the more recent information was usually assumed to be correct. In total, 258 files were reviewed in depth.

For approximately half of the files reviewed in depth (146 files, or 57%), researchers were unable to identify clearly whether inconsistencies in the reports were resulting in an artificially higher or artificially lower score. In many cases this was because there were large numbers of derogatory accounts, reported in various combinations by one, two, or three of the credit repositories. For those files for which a determination was made, an even split existed between files for which one or two scores were likely artificially high (56 files, or 22%) and files for which one or two scores were likely artificially low (56 files, or 22%). Thus, at least one in five at risk borrowers, but likely many more, are likely being penalized because of an inaccurate credit report or credit score. Similarly, at least one in five at risk borrowers is likely benefiting from inflated scores because of

incomplete credit information. However, these figures are based on the assumption that, in the absence of contradictory information, all information that was reported by only one repository was accurate. The figures likely underestimate the actual number of borrowers who are at risk because they do not account for information that is simply incorrect, does not belong to the borrower, or has been contested and removed from one or two repositories, but not from all three.

While this finding suggests a certain statistical equilibrium between the harm and benefit that obvious omissions, mistakes, and inconsistencies may be causing to consumers on the macro level, credit scores are purported to offer consumer-specific evaluations, and are used to generate customer-specific prices and decisions. Lenders suffer little harm so long as there is such statistical equilibrium because the large number of consumers they serve allows them to benefit from the countervailing impact of these errors on a given pool of loans. Consumers, on the other hand, have one score for every purchase, and do not benefit from such statistical averaging. Given the number of decisions regarding access and pricing of essential services that rely on these scores, their determination should not be a lottery in which some consumers "win" because derogatory information is omitted while other consumers "lose" because erroneous, contradictory, outdated, or duplicated information is reported in their credit history. Rather, scores should be determined fairly and based on complete, current, and accurate information.

B. Phase Two

The second phase of the study examined the scores and primary factors contributing to the score, as identified by the repositories, from 502,623 files compiled from electronic records. Examining this very large sample allowed for a corroboration of some of the findings of Phase One among a larger population, roughly equivalent to a 0.25% sample, or one out of every 400 consumers with credit reports. Furthermore, because no details of the report were recorded beyond the credit scores and primary reasons for the scores, zip code data could be included without fear of recording excessive personal identifying information. This allowed for verification that the sample had broad geographical representation.

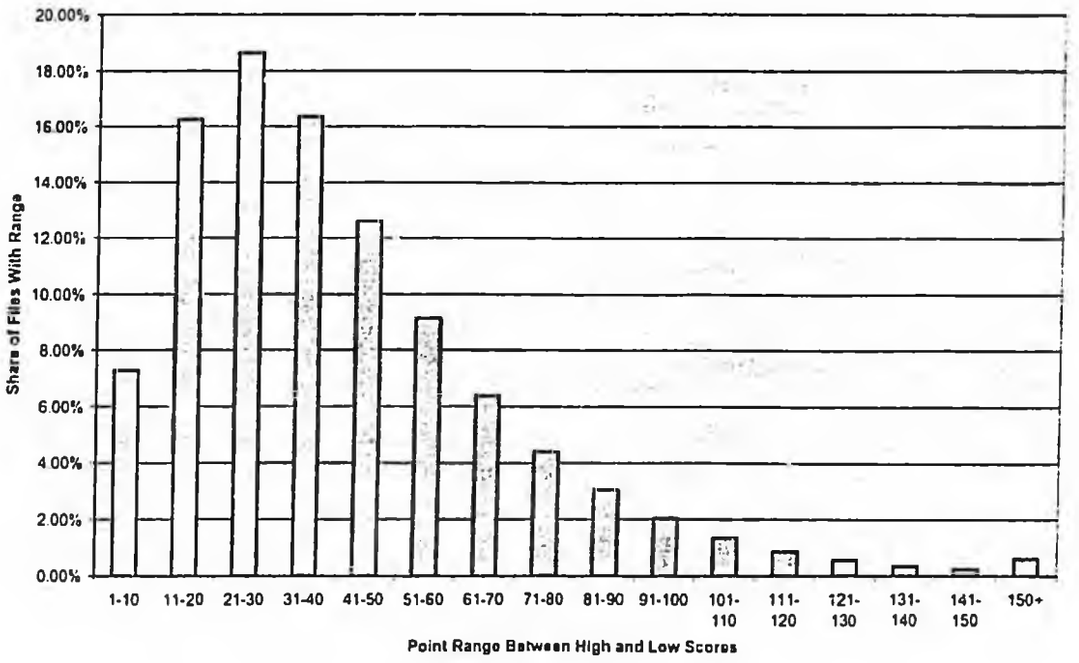
1. Scores Reported by the Three Repositories for a Given Consumer Varied Substantially.

The key findings from Phase Two are very similar to the findings from Phase One. Just fewer than one out of four files (105,324 files, or 24%, compared to 21% in Phase One) could be considered extremely consistent, with a range of 20 points or fewer between the highest and lowest scores. One in three files (129,284 files, or 29%, compared to 31% in Phase One) had a range of 50 points or greater between scores, and one in twenty-five files (17,626 files, or 4%, compared to 5% in Phase One) had a range of 100 points or greater between scores.

The average (mean) range between high and low score was 41 (compared to 43 in Phase One). The median range between high and low score was 35 (compared to 36 in Phase

One). Chart 2 is a histogram showing the share of files for which the range between highest and lowest score fell into 10 point bands up to 150, and the number of files for which the range exceeded 150.

Chart 2. Frequency of Ranges Between High and Low Score for Phase Two



2. Reports Scored With Different Versions of Scoring Software Reflected Almost No Difference in Overall Variability of Credit Scores.

As mentioned in the findings for Phase One, some have suggested that score variability can be explained by the fact that different versions of the Fair, Isaac, and Company scoring software may be in use in the marketplace as data users transition to a new version. The data collected in Phase Two allowed researchers to assess this and determine that the fact that reports were scored with different versions of the scoring models did not have an impact on the overall variability of credit scores in this study.

Fair, Isaac, and Company produces the software for all three repositories, but each repository refers to the scoring software by a different name. When Experian adopts a new version of the software, they discontinue the previous version (for example when they switched from a version Experian referred to as "Fair Isaac" to a version Experian referred to as "Experian/Fair Isaac Risk Model"), but users of Trans Union and Equifax software must update to the newest software version themselves, and there can be more than one version of the software in use at a given time. The sample examined in Phase Two reflected the use of two different versions of scoring software to score reports from Trans Union and Equifax. Trans Union reports were scored by an older version titled

"Empirica" and a newer version titled "New Empirica." Equifax reports were scored by an older version titled "Beacon" and a newer version titled "Beacon 96[23]."

The use of different scoring models had a nearly imperceptible effect on variation among scores. Only three combinations of scoring models occurred in the sample. Reports scored with the two older versions, "Empirica" and "Beacon," had an average range between the highest and lowest credit score of 39.61 points, and a median range of 33 points. Reports scored with "Empirica" and "Beacon 96" had an average range of 40.85 points, and a median range of 34 points. Reports scored with "New Empirica" and "Beacon 96" had an average range of 41.59 points, and a median range of 36 points. Comparing these statistics to the overall statistics for Phase Two (an average range of 41 points and median range of 35 points) shows that the influence of different scoring models is negligible, and if anything, the newer models resulted in a slightly greater variation among scores.

Recent commentary suggests that a new version of the software, "Next Generation FICO," which Equifax will refer to as "Pinnacle," Trans Union will refer to as "Precision" and Experian will refer to as "Experian/ Fair Isaac Advanced Risk Score," may produce significantly different scores from earlier models, but has not been widely adopted in the marketplace[24]. The impact of this new scoring tool is deserving of attention. However, none of the reports in this analysis were scored with this version of the scoring software.

3. Reports Contained Limited Information to Help Consumers Understand the Principal Reasons for their Credit Scores.

As in Phase One, a very limited number of standardized responses represented the vast majority of all explanations provided to consumers about their credit scores. The same four explanations that were predominant in Phase One were predominant in Phase Two, but in Phase Two a fifth code was returned with significant frequency.

Three explanations ("Serious delinquency," "Derogatory public record or collection filed," and "Serious delinquency, and derogatory public record or collection filed") represented 50% of the primary explanations provided (compared to 67% in Phase One). The explanation "Proportion of balances to credit limits is too high on bank revolving or other revolving accounts" represented 18% of the primary explanations provided (compared to 15% in Phase One). While these explanations constituted a very large share of all the principal explanations (7 out of 10), a fifth explanation also constituted a significant share. The explanation "Length of time accounts have been established" represented 8% of all the primary explanations provided (compared to 5% in Phase One).

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[23] In addition, 0.3% of files scored by TransUnion were scored by a version titled "Horizon," approximately 6% of files scored by all three repositories did not identify the version of the software used for scoring, and an extremely small number of files (approximately 0.03%) were scored by a non-mortgage model, such as an auto model or a bankruptcy model.

[24] Harney, Ken. "Get Upgraded Credit Scoring," Washington Post, November 23, 2002, and "Lenders Slow to Adopt New FICO Scoring Model," Washington Post, November 30, 2002.

It is worth noting that the four principal reasons for credit scores were on every file included in the analysis in Phase Two, while Phase One only recorded the explanations for those that met the criteria for further review.

C. Phase Three – Specific Types of Errors

The dramatic ranges between credit scores uncovered in Phases One and Two seem to indicate wide ranging inconsistencies between the information on each repository for a given consumer. Phase Three attempted to quantify how many consumer files contain errors, and of what kind. Errors of omission (information not being reported by all repositories) and errors of commission (inconsistent information between repositories, or duplicated information on a single repository) were both considered. Researchers recorded how many consumer files contained at least one of each category of errors identified.

Phase Three re-examined a 10% randomly selected sample of the files reviewed at one of the sites from Phase One. In this sample of 51 three-repository merge files, errors of omission and commission were both rampant. Table 3 lists the categories of errors, the number of files that contained such errors, and the percentage of files that contained such errors.

This examination of the frequency with which certain errors occur is not intended to imply that the occurrence of any one of these errors alone will necessarily reclassify a consumer into a more expensive pricing class. The actual impact of any one of these errors will depend upon what other information exists in the consumer's credit report. Any error with the potential to lower a consumer's credit score will generally have a greater effect on "thinner" files, or files that have less information. Also, if a report has no derogatory entries, the first piece of derogatory information will very likely have a more severe negative impact on a consumer's apparent creditworthiness than the same information would have on a file with multiple derogatory entries. However, it is possible for a single derogatory entry to have a dramatic effect on a consumer's score, whether or not it is accurate. If that consumer is near the threshold for a less favorable pricing class, it is very possible and probable that an error or errors in that consumer's credit history could have a substantial material impact. Furthermore, most reports reviewed contained more than a single error, and the cumulative effect of multiple errors increases the likelihood of material impact on consumers.

The sample size in Phase Three is the smallest of the three phases, due primarily to the time required to review files in sufficient depth to identify specific errors. The researchers recognize that the statistics from this phase have limitations and it is difficult to make definitive statements about the frequencies with which specific errors occur in the population at large based on these findings. However, this phase does document strikingly high levels of errors and provides evidence that at the very least a significant minority in the general population are at risk for a variety of errors of commission and omission.

Table 3. Types of Errors, and Number and Percentage of Files Containing Such Errors

		Omission		Commission			
Type of Account	Status	Number of Files Missing Such Acct.	% of Files Missing Such Acct.	Number of Files with Such Acct. Duplicated	% of Files with Such Acct. Duplicated	Number of Files with Inconsistent Info	% of files with Inconsistent Info
Mortgage	No Derogatory Info	17	33.3%	1	2.0%		
Mortgage	Late Payments	1	2.0%		0.0%		
Mortgage	Inconsistent Lates btw Repositories	1	2.0%		0.0%		
Mortgage	Inconsistent, one shows Default		0.0%		0.0%		
Mortgage	Foreclosure	2	3.9%	1	2.0%		
Other Installment	No Derogatory Info	34	66.7%	4	7.8%		
Other Installment	Late Payments	3	5.9%		0.0%		
Other Installment	Inconsistent Lates btw Repositories	2	3.9%	1	2.0%		
Other Installment	Inconsistent, one shows Default	1	2.0%		0.0%		
Revolving	No Derogatory Info	40	78.4%	9	17.6%		
Revolving	Late Payments	6	11.8%		0.0%		
Revolving	Inconsistent Lates	2	3.9%		0.0%		
Revolving	Inconsistent, one shows Default	4	7.8%		0.0%		
Revolving	Missing Lost or Stolen	8	15.7%		0.0%		
Other	No Derogatory Info	8	15.7%	1	2.0%		
Other	Late Payments		0.0%		0.0%		
Other	Inconsistent Lates btw Repositories		0.0%		0.0%		
Other	Inconsistent, one shows Default		0.0%		0.0%		
Collection Medical	Collection/ Chargeoff	10	19.6%		0.0%		
Collection Child Support	Collection/ Chargeoff	1	2.0%		0.0%		
Other Collection or Chargeoff	Collection/ Chargeoff	13	25.5%	3	5.9%		
Bankruptcy	Filed		0.0%		0.0%		
Bankruptcy	Released/Satisfied/Dismissed/Paid	5	9.8%	1	2.0%		
Lien	Filed	4	7.8%		0.0%		
Lien	Released/Satisfied/Dismissed/Paid	2	3.9%		0.0%		
Judgement	Filed	3	5.9%		0.0%		
Judgement	Released/Satisfied/Dismissed/Paid	2	3.9%		0.0%		
Civil Suit	Filed		0.0%		0.0%		
Civil Suit	Dismissed	1	2.0%		0.0%		
	# 30 Late					22	43.1%
	# 60 Late					15	29.4%
	# 90 Late					12	23.5%
	Balance on Revolving Accts or Collections					42	82.4%
	Credit Limit on Revolving Accts					49	96.1%
	Past Due Amount					9	17.6%
	Current Method of Payment					31	60.8%
	Type of Account					11	21.6%
	Last Activity on Defaulted					13	25.5%
	No Last Activity Date on defaulted accounts	11	21.6%				

1. Significance and Frequency of Errors of Omission

Incomplete reporting of information, or an error of omission, can make a consumer appear either more credit worthy or less credit worthy, depending on the nature of the information that is omitted. When a derogatory account, such as a collection, late payment, charge off, or public record is omitted, the consumer's record will appear less risky, and the consumer's credit score will likely be artificially high. However, when a positive account, such as a mortgage, auto loan, or credit card account that has been paid as agreed, is omitted, this responsible credit behavior will not be conveyed and the consumer's credit score will likely be artificially low.

Positive account information is especially important for consumers who are just beginning to establish credit, or who are working to re-establish their credit rating after bankruptcy. Omitting positive information can have a dramatically negative impact on such consumers. Failure to report positive accounts can deflate scores, or even make it impossible for the scoring model to produce a score. Such outcomes make it more difficult to enter or return to the prime lending marketplace, relegating affected consumers to the higher priced subprime market.

Because of the limitations of the study, researchers were unable to determine definitively whether many of these errors were errors of omission. For example, researchers could not be certain that accounts appearing on one report only were the result of omissions by the other two repositories, or if the accounts appeared as the result of merging errors, or compiling errors on that one repository (and actually did not belong to the consumer), or if they had been contested and removed from some repositories but not removed from all three. In the absence of evidence that presented a contradiction, researchers conservatively treated information appearing only on one or two repositories as an error of omission.

a) More Files Contained Omissions of Positive Information than Contained Omissions of Derogatory Information, but Omissions of All Kinds were Common.

Accounts that had never been late, and which have great significance for determining a credit score, were omitted with extremely high frequency. Omitted revolving accounts with no derogatory information were noted on the largest number of consumer files. Nearly eight out of ten files (78.4%) were missing a revolving account in good standing. In addition, one file out of three (33.3%) was missing a mortgage account that had never been late, and two files out of three (66.7%) were missing another type of installment account that had never been paid late. Other accounts with no derogatory information, such as non-revolving credit cards, were missing on 15.7% of all files.

Omissions of accounts with late payments, but which had not been sent to collection, were less frequent than omissions of positive accounts. Still, one in ten files (11.8%),

was missing a revolving account with late payments reported, and many (7.8%) were missing revolving accounts that were being reported as defaulted by one of the two repositories that reported the account. Half that number (3.9%) contained conflicting information about late payments on revolving accounts reported by two repositories. A much smaller number of files were missing mortgages or installment accounts that had been late at some time in the past, or that had conflicting information regarding late payments, but 3.9% of files omitted a foreclosure.

The most commonly omitted derogatory information was for various types of collections. Child support collection omissions were rare (2% of files), but one out of five files (19.6%) omitted a medical collection, and one out of four files (25.5%) omitted a collection of some other kind.

b) Medical Collections Raise Special Concerns Regarding Appropriateness and Privacy.

Medical collections, as a subset of collections that were often not reported on all three repositories, deserve special attention. Disputes between consumers, health insurance companies, and medical care providers occur frequently, and can be of extended duration. Many medical bills are referred to collection agencies during these disputes but are ultimately paid by insurers. Therefore, if all the relevant facts were known these collections could very likely be errors of commission, rather than errors of omission, as they may not accurately reflect consumer debt repayment behavior.

Another issue noted by researchers related to medical collections was the high degree of information that can be inferred from the information in medical collection entries listed on a consumer's credit report. The names of many medical creditors are specific enough to allow for identification of categories of treatment. For example, information in collection entries identified categories of medicine, such as perinatology, and neonatal health clinics. This could have especially significant ramifications if full credit reports are reviewed by potential and current employers, who may infer from such collections that an applicant, or employee, has an unusually sick newborn, and may be more likely to be called away from the office[25]. In other cases, consumers may simply wish not to have the fact that they have sought treatment for other very private matters (such as treatments for fertility, mental health, or AIDS) to be readily discernible by anyone who reviews their credit record.

Section 604 (g) of the Fair Credit Reporting Act states that "A consumer reporting agency shall not furnish for employment purposes, or in connection with a credit or insurance transaction, a consumer report that contains medical information about a consumer, unless the consumer consents to the furnishing of the report." However, consumers have complained about the difficulty of identifying the original creditors for collection accounts that appear on their files, and best practices have been proposed by

[25] It is the researchers' understanding that current market practices do not permit employers to view the same level of detail that is provided to potential lenders. Employer credit reports generally do not contain the notations on collection entries that would allow them to make such medical inferences.

the Consumer Data Industry Association that attempt to strike a balance between protecting consumers' medical information and providing enough information to allow consumers to identify the original source of debts. Furthermore, it is the Researchers' understanding that in Massachusetts, the original creditor must be listed for every collection account.

c) Public Record Information was Frequently Omitted, Including Both Information that Would Likely Increase Credit Scores and Information that Would Likely Decrease Scores.

One in ten files had an omitted date of fulfillment for a bankruptcy, an omission that almost certainly lowered the corresponding credit scores. Several files also contained reports that omitted liens, both satisfied (3.9%) and unsatisfied (7.8%), and judgments, both satisfied (3.9%) and unsatisfied (5.9%). One file contained a dismissed civil law suit that was reported to one repository only.

Given the dramatic frequency of omissions of both positive information (such as mortgages) and derogatory information (such as collections and public records) it is clear that errors of omission have the potential to undermine the accuracy of consumer credit records and, by extension, credit scores. It should be noted that true errors of omission (excluding unrelated account information that is erroneously captured by one repository and disputes which have not resulted in removal of information from all three repositories) are most likely the fault of the creditor, not the credit repository. If a data provider, be it a collection agency or major national bank credit card, decides not to report information to all three repositories, then the repositories do not know the information and cannot report it.

2. Errors of Commission

Also of great concern to consumers is the frequency with which errors of commission, or inclusion of incorrect information, occur in credit reports. A credit report with incorrect derogatory information makes a consumer appear to be a greater lending risk and will likely artificially lower the consumer's credit score. In addition, duplicate reporting of accounts can have an impact on a consumer's scores.

Again, because the researchers did not have the benefit of knowing the consumers' credit histories, we were limited in the errors of commission that we could identify. Only in cases where repositories were reporting conflicting details on an account could researchers identify with certainty that at least one repository was incorrect. Even with these limitations, the findings are troubling.

a) Many Consumer Files Contained Conflicting Information Regarding the Consumer's Record of Late Payments.

In 43.1% of the files, reports regarding the same accounts conflicted regarding how often the consumer had been late by 30 days. In nearly one out of three cases (29.4%), there

was conflicting information about how many times the consumer had been 60 days late, and conflicting information regarding the number of times an account had gone to 90 days late in one out of four consumer files (23.5%). Late payments, especially on recent accounts, can be very detrimental to a consumer's credit score. Delinquencies are identified as major contributing reasons for a consumer's score on the majority of reports.

In some cases, but by no means in all, different numbers of late payments may be the result of the timing of record updating procedures by the repositories. For example, one repository may have information on an account that is current as of June, whereas another repository may only have received or loaded information current as of May. However, this phenomenon would only explain variations for accounts that are currently past due, and not for the significant number of files that were currently reported as paid on time, but had discrepancies in the historical count of late payments. Furthermore, regardless of a repository's particular timing, a consumer will be evaluated on the information available at the time of application.

b) Reporting of Account Balances was Inconsistent

Inconsistencies regarding the balance on revolving accounts or collections appeared on 82.4% of files, and inconsistencies regarding an account's credit limit appeared on 96.1% of files. These particular numbers are presented with one qualification. The software used to review reports presents information in a field titled "credit limit/high credit." Researchers acknowledge that the raw data may contain separate information regarding the high credit (the highest amount ever charged on this account) and the credit limit (the amount of credit made available by the creditor) and the observations regarding inaccuracies in these fields may not reflect the data used to derive credit scores. However, even with this qualification, there are reasons to be concerned about incorrect reporting of balances or credit limits. Credit card lenders have an incentive to obscure the real credit limit from credit reports, as a means of retaining existing borrowers. If a credit card lender reports a credit limit as lower than the actual limit (for example by reporting the high credit as the credit limit) the borrower will appear to be closer to "maxing-out" their credit, and will appear less attractive to competing credit card lenders. Thus, the consumer will be less likely to receive competing offers. Such misreporting also poses a significant risk to consumers' overall credit rating. The practice of deliberately refusing to report complete and accurate account information in order obscure consumers' credit has drawn repeated condemnation from John Hawke, the Comptroller of the Currency[26]. There is good reason to be concerned, given that one of

[26] In a May 5, 1999 speech before Neighborhood Housing Services of New York, Hawke stated, "Subprime loans can't become a vehicle for upward mobility if creditors in the broader credit market lack access to consumer credit history. Yet, a growing number of subprime lenders have adopted a policy of refusing to report credit line and loan payment information to the credit bureaus – without letting borrowers know about it. Some make no bones about their motives: good customers that pay subprime rates are too valuable to lose to their competitors. So they try to keep the identity and history of these customers a closely guarded secret" (http://www.occ.treas.gov/ftp/release/99-41a.doc). He reiterated these concerns in a June 9, 1999 speech before the Consumer Bankers Association, condemning the objectionable practice of non-reporting and noting that, "failure to report may not be explicitly illegal. But it can readily be

the most frequently provided explanations for a consumer's credit score is that the "proportion of balances to credit limits is too high on bank revolving or other revolving accounts." This is the primary explanation listed on approximately one out of six reports.

c) Contradictory or Missing Dates Occurred Frequently and Have the Potential to Distort a Consumer's Record.

Because more recent credit activity is more influential in determining a credit score, it is important that the relevant dates on accounts be accurate. This is primarily true for accounts that have gone into default. Creditors track the date of last activity on consumer accounts, but, because most creditors report to repositories in large batches of data on many accounts, credit repositories also track a second date – the last date the information was reported by the data provider. If a data provider fails to report any information in the date of last activity data field, the scoring software will assume that the date last reported is the date of last activity. Thus, if a consumer has an account that defaulted several years ago, but otherwise has good credit, under normal circumstances the relative impact of this account will diminish over time. However, if there is no date of last activity reported, this default will seem perpetually as recent as the last submission of a batch of data from that provider. One in five consumer files (21.6%) contained a defaulted account that did not report a date of last activity. One in four files (25.5%) contained contradictory information regarding the date of last activity.

d) Duplicate Reporting of Accounts did not Appear to be as Widespread as Many of the Other Errors Noted in this Investigation.

When accounts were reported multiple times by a single credit repository, they tended to be accounts that had no derogatory information, which may provide an artificial boost to a consumer's credit scores by giving the impression that the consumer has successfully managed more credit than he or she actually has, but may also lower a consumer's credit score by increasing their apparent overall debt load. Also, on 5.9% of files a collection was reported more than once on a single credit report, likely artificially lowering the score. This was usually the result of a collection being reported by the original creditor as well as a collection agency that had taken over the account.

Further contradictions existed regarding the method of payment (whether an account was current, late, charged off, in collection, etc.) on 60.8% of files, the type of account (revolving, installment, mortgage) on 21.6% of files, and the past due amount on 17.6% of files.

3. Merging and Compilation Errors

Credit data are complex, and accurate interpretation of it can sometimes take a considerable amount of time and effort. When credit reporting agencies and credit users

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characterized as unfair; it may well be deceptive, and – in any context – it's abusive" (http://www.occ.treas.gov/ftp/release/99-51a.doc).

review merged reports, they employ software to help organize and simplify the information, so the user can quickly assess the unique information contained in each repository without having to sift through the same information reported by another repository. The design of a tool to do such work involves making certain choices, which can lead to significantly different results. For example, some merging software is designed to present the details for a given account from one of the three repositories to a credit user, and "hide" the other two repositories reports. Other software utilizes a merging logic that takes some information from each repository report to create an amalgam of the information in each credit report. This one example of a design decision can result in a very different presentation of the same raw data to a credit reporting agency or credit user.

The discussion of duplicate and mixed files in Phase One already illustrated that a large number of errors enter the credit reporting system when the automated software used by the credit repositories compiles information about credit users. Use of nicknames, misspellings, transposed social security numbers, and mixed files that report information under one person's name, but match that name to a spouse's social security number, are all examples of variations that can result from an automated interpretation of complex and sometimes contradictory personal identifying data. Software designers must make explicit choices about how to interpret this data, and what form the output will take. For one in ten files, the result was an additional repository report and/or an additional credit score.

A similar potential for error exists when automated systems interpret multiple reports, merging the three credit reports into a single representative report. This process attempts to reconcile the voluminous inconsistencies between repositories for account level information. Given the difficulties that are apparent from the attempts to reconcile individual consumer information, the importance of ensuring a fair and rigorous merging logic for any compilation software is clear.

These concerns raise many questions. How exactly does a software program that collects information from multiple credit repositories interpret conflicting or duplicated information? How much variation can a given software package consider before an account entry is treated as a separate account? How many creditors are trying to game the marketplace by not reporting complete or accurate information about consumers – in effect making consumers appear less creditworthy than they actually are to other potential creditors, in a bid to protect their customer base?

We do not raise these problems to advocate an end to use of multiple repository reports. In fact, use of multiple credit scores serves as a control against errors of omission. (All of the errors of omission identified in this study were identified because of the use of multiple repository reports.) On the contrary, we identify these problems to illustrate that there are difficult choices that must be made when developing all of the components of the interconnected system that evaluates credit. Given the lack of oversight of this dimension of the market, there is a very real potential for developers to make choices that

result in a system that is unfair to consumers in general or to a certain segment of consumers, such as those nearest the threshold between prime and subprime.

VII. Conclusions and Implications of the Findings for Consumers

A. Credit scores and the information in credit reports vary significantly among repositories.

The scores based on data from the three repositories can vary dramatically for all consumers regardless of whether they have generally good or bad credit histories. Approximately one out of every three files (31%) had a range of 50 points or greater, and one out of twenty reports had a range of 100 points or greater (5%). The average range between high and low scores was 43 points (median range was 36).

The wide range in credit scores reflects a similarly broad variation in the data contained in each repository report for a given consumer. Significant accounts, such as mortgages, credit cards, collections, and public records, were regularly omitted from one or more credit repository reports. In addition, for most consumers, the details of accounts that are reported by all three repositories are unlikely to be completely consistent. Information about late payments, the balance and credit limit on revolving accounts, and the current status of accounts are among errors that occur frequently.

B. Many consumers are unharmed by these variations, and some probably benefit from them.

Consumers with very good credit histories, whose credit scores place them firmly above the cutoff for the most the favorable product terms, are as likely as any other consumer to have variation between credit scores. However, as long as that variation does not result in scores that are lower than the qualifying score for the best terms for credit, insurance, or any other product or service underwritten by their credit score, there will be no material harm. The number of consumers in this category is somewhat unclear and depends upon the products being sought and the qualifying scores for those products.

Furthermore, those near the boundary between pricing ranges, such as the division between the prime and subprime mortgage markets, who have errors that artificially raise their scores may be artificially classified as lower risk. As a result, such consumers have the potential to reap some benefit from the inconsistencies.

C. However, tens of millions of consumers are at risk of being penalized for incorrect information in their credit report, in the form of increased costs or decreased access to credit and vital services.

We estimate that tens of millions of consumers are at risk of being penalized by inaccurate credit report information and incorrect credit scores. Between 190 and 200 million Americans, or nearly every adult consumer, has a credit report that can be scored to produce a credit score. Businesses from mortgage lenders to utility providers increasingly have established pricing structures in which the charge for the loan or service corresponds to a credit score range. Errors in credit reports that lower a consumer's credit score can place that consumer into a more expensive pricing range than

he or she deserves to be in. Credit scores below a certain cutoff point can even disqualify consumers outright.

Looking at the mortgage market as an example, the two most significant ranges are defined by a credit score of 620. Whether a consumer's credit score is above 620 or below 620 determines if the consumer qualifies for[27] the lower priced prime market, or if the consumer will be limited to subprime market, which imposes higher borrowing costs, often requires larger down payments, and exposes consumers to abusive predatory lending practices. In addition to this primary division in the prime and subprime mortgage markets, there are secondary pricing ranges. According to the consumer focused website of Fair, Isaac, and Company (www.myfico.com), consumers with a score between 720 and 850 will qualify for the lowest interest rates, but there are at least four different pricing ranges in the prime market and at least two in the subprime market. Consumers with a score between 700 and 719 will be charged higher borrowing costs than those in the highest score range. Prices similarly increase for scores between 675 and 699, and between 620 and 674. Within the subprime market, the two pricing ranges identified by Fair, Isaac, and Company are from 560 to 619 and from 500 to 559.

This study focused on consumers at risk for misclassification into the subprime market due to inaccurate information in their credit report and found that one in five consumers (20.5%) is at risk. We have defined at risk consumers as either having a middle credit score between 575 and 630 with a score variance of greater than 30 points, or as having a high score above 620 and a low score below 620. Among these at risk consumers, based on our analysis of files, we estimate that at least one in five (22%) is likely being penalized with lower scores than deserved because of errors or inconsistencies in his or her credit report that are clear enough to be noticed by an outside observer unfamiliar with that consumer's debt payment history. (We also estimate that at least one in five (22%) has scores that are likely too high due to a lack of reporting by creditors to all repositories.) The remaining sixty percent of at risk consumers have credit reports without errors clear enough to allow an outside observer to determine whether their credit scores are artificially low or artificially high. We strongly suspect that a significant share of these at risk consumers also have artificially low credit scores due to errors in their reports that they would be able to identify if given the opportunity.

While the findings suggest that there may be some statistical equilibrium between those consumers who have artificially high scores and those who have artificially low scores, such statistical averaging is irrelevant to the individual consumer who is penalized based on errors in his or her credit report. Credit scores are purported to offer consumer specific evaluations of credit and do result in consumers specific decisions regarding pricing and availability for the essentials of daily life and economic activity.

Consumers may be harmed by both errors of commission and errors of omission. Errors of commission can lower a consumer's score in situations such as when incorrect

[27] Because of the aggressive sales tactics of subprime and predatory lenders, many consumers who have credit scores above 620 have subprime loans, although they could have qualified for less expensive prime loans. This is an important but separate issue.

information or mixed files add the credit history of others to a consumer's report. Errors of omission can lower a consumer's score when the record does not contain full and accurate information regarding existing accounts paid as agreed.

Those consumers on the threshold of subprime status face particularly dire consequences from this lack of precision. Falling below the cutoff score for a prime rate mortgage can add a tremendous financial burden to these threshold consumers and make it more difficult to meet this and other financial obligations. Interest rates on loans with an "A-" designation, the designation for subprime loans just below prime cutoff, can be more than 3.25% higher than prime loans. Thus, over the life of a 30 year, $150,000 mortgage[28], a borrower who is incorrectly placed into a 9.84% "A-" loan would pay $317,516.53 in interest, compared to $193,450.30 in interest payments if that borrower obtained a 6.56% prime loan – a difference of $124,066.23 in interest payments[29].

We conservatively estimate that 40 million consumers (twenty percent of the 200 million with credit reports) are at risk of being misclassified into the subprime mortgage market, and at least 8 million (twenty percent of these at risk consumers) would be misclassified as subprime upon application, but the actual numbers are likely much higher. These numbers do not even attempt to quantify the number of consumers who are being overcharged because errors pushed them into a higher pricing range within the prime or subprime markets. Furthermore, consumers with errors in their credit reports and artificially low credit scores are penalized in a number of markets in addition to the mortgage market. These figures do not address the consumers penalized with higher credit card interest rates, more expensive insurance, or those denied insurance, housing, utility service, or employment (an application of credit scoring we expect to increase in frequency) on the basis of erroneous credit scores.

D. Almost one in ten consumers runs the risk of being excluded from the credit marketplace altogether because of incomplete records, duplicate reports, and mixed files.

If a consumer has very little credit history, or is rebuilding credit after a bankruptcy, every positive account that they can establish is vital for creating a record that has sufficient information to be scored. If a lender requests scores for a consumer, but a repository is unable to return a score (as was the case for approximately one out of ten files reviewed in this study), that lender may choose to set aside the customer's application and focus on an application with enough credit to be scored and priced with minimal work. This is especially likely during periods of heavy volume, such as the prolonged refinancing boom currently occurring. Even if a lender later returns to the file that was set aside once volumes have subsided (perhaps because of seasonal fluctuations in home buying activity, or because interest rates have risen), the consumer will have suffered substantial harm by being excluded even temporarily from the marketplace.

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[28] The Federal Housing Finance Board's *Monthly Interest Rate Survey* reports that the national average loan amount for conventional home purchase loans closed during June of 2001 was $151,000.

[29] Interest rates as reported by *Inside B & C Lending* for 30 year Fixed Rate Mortgages for "A-" Credit (par pricing), and "A" Credit respectively, as of July 14.

Consumers may not understand the implications of incomplete reporting or non-reporting by their creditors, and would have little leverage to force their creditors to report up to date information anyway.

Similarly, consumers generally have no control over the inclusion in their credit files of duplicate reports, or mixed information not belonging to them. The only person in a position to tell if a credit repository's compilation system incorrectly groups unconnected information with a consumer, or to assess why their credit record was not scored, is the lender. But there is no requirement that the lender share the report or score with the consumer. Furthermore, if the lender incorrectly enters the identifying information, during a credit review, either leaving out information such as social security number, generation (Jr., Sr., etc.), or mistyping the applicant's name or other information, the lender may be contributing to the problem. If a consumer later requests a copy of his or her credit file after denial, he or she will often be required to provide more comprehensive information than the original data user. This means that the report eventually provided to the consumer may have a lower propensity of errors than the version used to evaluate his or her application. This is especially true for non-mortgage credit, or mortgage credit underwritten with files ordered directly from one or more credit repositories. If a mortgage lender ordered a merged credit report from a credit reporting agency that merged the files into a new report, and after being denied the borrower requests a copy of the credit report from that agency, the agency has an obligation to give the consumer the merged credit report.

The treatment of unscored files is a very serious question. How do automated credit reviews treat files that contain extra scores, or extra reports that are unscored? One in ten requests fails to return a score from each repository. As many requests return one score from each repository, but also return additional files that may or may not be scored. If automated credit reviews reject additional files, as many as two in ten consumers could be excluded from the credit market outright because of these problems.

E. The use of information from all three repositories in mortgage lending protects consumers and creditors from being negatively affected by errors of omission, but it may increase the negative impact on consumers of errors of commission.

The use of information from all three repositories on mortgage underwriting offers consumers and creditors protection against errors of omission by introducing the maximum available information to the scoring and underwriting process. However, errors of commission actually occur on more files than do errors of omission, and there are a number of different approaches to using information from three repositories for underwriting purposes. Without a chance for borrowers to review their reports for errors of commission at the time of underwriting, and without oversight of how the information is merged and presented, the use of multiple repository sources of data can produce a result that is harmful to consumers.

F. Consumers are not given useful and timely information about their credit.

1. Standardized, generic explanations do not provide sufficient information for consumers to address inconsistencies and contradictions, let alone outright errors.

Approximately 7 in 10 credit reports indicated that the primary factor contributing to the score was "serious delinquency, derogatory public record, or collection filed," or some subset or combination of these factors, without providing any information about which specific accounts were responsible for the low scores. In many cases, it is not even clear whether a delinquency, public record, or collection was responsible for the score. In addition approximately one in six reports indicated that the primary reason for the score was that the proportion of revolving balances to revolving credit limits was too high. These two relatively generic explanations were reported as the primary reason for a derogatory score on more than 8 out of 10 reports reviewed.

The vague information provided by these explanations is too general to be helpful. Nearly all consumers near the subprime border have had some activity in their past that may fall under the broad terminology "serious delinquency, derogatory public record, or collection filed," almost by definition. If their credit records were more favorable, they would not be so close to the subprime threshold. Such borrowers may accept this generic justification for a low score more readily than consumers with generally good credit. Thus, the consumers who are most likely to be penalized by errors are the least likely to challenge these imprecise explanations. Because threshold consumers are not provided the specific account information that is lowering their scores, they are not given the tools to identify and correct possible errors. The situation would likely be different if consumers had access to the full credit reports and scores used to underwrite their loan applications, with an indication of which accounts had the largest negative effect on their scores. If this were the case, consumers would have a much more legitimate opportunity to identify and challenge any errors.

The credit report is a rare type of consumer product. Consumers pay for it during mortgage underwriting, and are rewarded or penalized on the basis of it, but are not even allowed to look at it, much less keep a copy for their records. Furthermore, consumers can understandably view the report as "theirs" because it is purportedly a record of their behavior.

2. Consumers outside of California have no affirmative right to know their credit scores.

Credit scoring is a shorthand that allows lenders to more quickly assess the complex information in a consumer credit report. However, with the exception of California residents, consumers are not guaranteed access to their credit scores, although they are permitted to purchase copies of the underlying data. Thus, consumers are placed at a disadvantage relative to lenders when it comes to evaluating their own credit-worthiness. When Californians gained access to their scores, many lenders across the country did

begin making the scores available. As with the specific credit report used to evaluate an application, consumers are charged for the additional cost of obtaining a credit score for underwriting, but have no guarantee that they will be able to view the specific score used to underwrite their loan. Currently, all three repositories allow consumers to purchase scores in conjunction with credit reports, but prior to the passage of the California law requiring this, the repositories resisted providing scores to consumers.

G. Private companies without significant oversight are setting, or at the very least heavily influencing, the rules of the marketplace for essential consumer services that base decisions on credit scores.

Companies, such as Fair, Isaac, and Company, have produced credit scoring software that is increasingly used in the marketplace to determine access and pricing for the essentials of daily life and economic activity. Consumers have no choice regarding how lenders or other data users evaluate their credit, and widespread and increasing use of credit scoring systems that evaluate applications for credit, mortgages, insurance, tenancy and even employment is a fact of the marketplace. Scoring systems incorporate many complex decisions regarding the interpretation and treatment of information that can be contradictory, incomplete, duplicative, or erroneous. There is great potential for these systems to incorporate inappropriate decisions that result in consumer harm, especially as models originally designed to evaluate credit applications are adapted to evaluate applications for services completely unrelated to credit behavior.

Despite the tremendous and growing influence of automated credit evaluations, no government entity has recognized and acted on the clear need for ongoing, timely review of these software systems to determine their accuracy, fairness and appropriate application. Many decision-makers who use scoring systems to evaluate consumer applications do not even understand the systems themselves and cannot explain them to consumers. Thus, while decision-makers are increasingly relying on programs that they do not understand, no public entity is guaranteeing the validity and fairness of such programs. Without independent review and oversight of this market force, consumers are, literally, left to the devices of the system developers.

H. Certain information in credit reports has the potential to cause breaches of consumers' medical privacy.

Many credit report entries regarding medical collections contained enough information to infer medical details about consumers, such as the type of treatment they had received. The ability to discern from a credit report that a consumer may have received treatment from a neonatal clinic, a fertility clinic, a mental health provider, or an AIDS clinic has serious implications for medical privacy, and could potentially facilitate discriminatory treatment. While section 604 (g) of the Fair Credit Reporting Act prohibits furnishing of medical data in connection with employment, credit, or insurance transactions, consumers also complain that reporting collection accounts without identifying the original creditor makes it difficult for consumers to decipher their own reports. It is the understanding of researchers that current market practices limit the level of detail in

reports provided to employers, aggregating information in such a way that individual creditors are not identified, and an employer would be unlikely to be able to make specific inferences about an applicant's or employee's medical condition. Nonetheless, the presence of this information among the data held at the repository level is troubling and deserving of further attention.

VIII. How to Improve the System

A. Require creditors to immediately provide to any consumer who experiences an adverse action as a result of their credit reports or credit scores a copy of the credit reports and scores used to arrive at that decision free of charge and permit disputes to be immediately resubmitted for reconsideration.

All consumers who experience an adverse action based on one or more credit reports or scores (such as having a loan or insurance application denied, being charged higher than prime rates, or receiving less favorable terms) should immediately be given a copy of both the full report or reports used to derive that score and the related credit scores without having to pay any additional fee. These reports should identify any entries that are lowering the consumer's score and indicate the impact (either the point value deducted for that entry or the proportional impact of that entry relative to other derogatory entries in the report). The consumer should then be allowed to identify any errors or out of date information, provide documentation, and be reevaluated for prime rates.

The additional cost to lenders and businesses of providing these reports immediately would be minimal. Since they already posses the report in paper or electronic form, they would merely have to copy or print this report.

Simply providing consumers with the name and contact information of the consumer reporting agency or agencies that provided the information used to arrive at the decision is insufficient because it creates an unnecessary obstacle and, especially for non-mortgage applications, the report a consumer will receive after submitting a request may very likely differ from the report the creditor reviewed. Errors from duplicate scores and/or mixed reports that may result from incomplete or incorrect keying of information during the file request will not be apparent if the consumer correctly requests his or her file. One in ten consumer applications results in an additional report being returned by the repository.

B. Require decisions based on a single repository's credit report or credit score that result in anything less than the most favorable pricing to immediately trigger a re-evaluation based on all three repositories at no additional cost.

Lenders and other credit data users have a desire to keep their underwriting costs low. This is a legitimate desire so long as consumers are not harmed in the process. Some reduce costs by underwriting certain decisions with only one credit report. For example, a lender may offer pre-approval letters based on only one report, or underwrite home equity lines of credit or second mortgages with a single report. Given the wide range between scores for a typical consumer and the frequency with which major accounts are omitted from credit reports, such practices have serious negative implications for consumers.

Measures should be put in place to protect consumers from any negative impact resulting from such underwriting practices. A simple solution would be to require all decisions based on credit to use information from all three repositories. However, this could result in higher costs and reduced availability of products such as pre-approval letters that are beneficial to consumers.

Alternatively, lenders and other credit data users could be permitted to continue underwriting based on one report, so long as any adverse impact based on information from a single repository immediately triggers a re-evaluation with information from all three repositories at no additional cost to the consumer. In this manner, businesses could continue to save on underwriting costs for consumers with very good credit, but consumers with less than perfect credit would not be forced to continue to pay a high price for inaccuracies, inconsistencies, or incompleteness on any one credit report.

C. Strengthen requirements for complete and accurate reporting of account information to credit repositories, and maintenance of consumer data by the repositories, with adequate oversight and penalties for non-compliance.

Many errors in credit reports can be attributed to the practices of creditors and other credit data users rather than to repositories. For example, some data furnishers may not report to every credit bureau. Others may consciously misreport or omit information regarding an account in order to prevent other lenders from approaching a valuable customer with competing offers (such as credit card lenders not reporting the true available credit amount so that the borrower appears to have a much higher debt-to-available credit ratio and appears to pose greater risk when other lenders review the credit report). Appropriate government entities such as the Federal Trade Commission and federal banking regulators should require accurate and complete reporting of credit information to the repositories by any entity that uses credit data to make evaluations and conduct regular examinations for compliance. In addition to scrutinizing reporting entities, a government entity (such as the Federal Trade Commission) should audit the repositories' records on a regular basis to identify data furnishers who report incomplete or incorrect information to the repositories. Such activity should be subject to fines or other penalties for non-compliance. These audits should also assess the overall accuracy of data maintained by the credit repositories, with appropriate fines or other penalties for inaccuracy.

Some may perceive tension between consumers' interest in keeping their information private and their interest in having evaluations of their creditworthiness be based on an accurate record of their past behavior. However, consumers generally object to information sharing for secondary purposes, not in the regulated Fair Credit Reporting Act context, provided it is subject to Fair Information Practices. The cost of incorrect information is high, and it is possible to simultaneously serve both consumer interests reasonably well.

Not all providers of consumer services use credit records or credit scores to determine consumer eligibility, or pricing. However, those that do should be required to complete

the cycle of information and report complete and accurate information back to the credit repositories. Information about any account that was underwritten with a report from one or more credit repositories should be reported to those repositories as frequently as the consumer is obligated to make payments. Collection agencies should be required to report on the status of collections at least once every six months.

D. Establish meaningful oversight of the development of credit scoring systems.

Despite the fact that consumer access to, and pricing for, vital services such as mortgages, general consumer credit, insurance, rental housing, and utilities is increasingly dictated by the automated evaluation of credit, there is no government oversight of the design of these systems. The calculations behind credit scores, a fact of life for the American consumer, remain shrouded in secrecy.

The design of credit scoring systems involves a number of deliberate choices that can have a dramatic impact on consumers and can result in systems that are flawed or unfair. These choices can range from determining the relative impact of various consumer actions to establishing the system defaults for cases where information such as date of last activity is not reported, to designing the logic for interpreting public records or contradictory information reported for an account.

A wide variety of entities have developed scoring models[30], including Fair Isaac and Company, large mortgage lenders (such as Countrywide and GE Capital), the Federal Housing Administration and Department of Veterans Affairs loan guarantee programs, the Government Sponsored Enterprises (GSEs) Fannie Mae and Freddie Mac, private mortgage insurance companies (such as PMI Mortgage Insurance Company and Mortgage Guarantee Insurance Corporation), and insurance companies. However, the only federal review of the fairness of any such models was a HUD review of the GSE systems conducted in 2000, the findings of which are expected to be released soon[31]. While the delayed release will limit the relevance of this review because the GSEs have made significant changes to their automated underwriting systems since the review was conducted, we recommend other agencies follow this example and conduct full reviews of all scoring systems in the marketplace.

We recommend that appropriate government agencies, such as HUD, the Federal Trade Commission, and state insurance departments conduct regular, comprehensive evaluations of the validity and fairness of all credit scoring systems, including any automated mortgage underwriting systems, insurance underwriting systems, tenant and employee screening systems, or any other systems or software that uses credit data as part of its evaluation of consumers, and report to Congress with its findings. These evaluations should be conducted and released in a timely fashion so that developers can react to any recommendations and so the reviews do not become outdated as new versions of scoring software are developed and distributed. Strong oversight of scoring

[30] Straka, John. 2000. A Shift in the Mortgage Landscape: the 1990s Move to Automated Credit Evaluations. *Journal of Housing Research*. Volume 11, Issue 2.
[31] Felsenthal, Mark. "HUD Secretary – mortgage software bias study out soon." Reuters. October 22, 2002.

systems that identifies and protects consumers from any abuses will foster consumer confidence in these powerful and increasingly utilized evaluation tools.

E. Address important questions and conduct further research.

In the course of conducting this study, several questions arose which are not comprehensively addressed in this report, but are deserving of further attention and research. This report primarily addresses the impact of wide variations in credit scores and credit data on consumers who are seeking credit – particularly mortgages. Future studies should explore the impact of these variations on insurance availability and affordability, given the recent, dramatic increase in the use of credit scores as an insurance underwriting tool. In addition, further research should address the impact of data and credit score variations on consumers as a result of other applications, such as tenant screening and employee screening. Additional research could assess the value to consumers of fee-based credit monitoring services.

Other topics raised in this report, but not exhaustively addressed, include determining the value to consumers of credit re-scoring relative to other means of credit data validation, the impact of anti-competitive market forces surrounding credit re-scoring, the privacy concerns surrounding the appearance of medical related information in credit reports, and ways to protect consumers from abusive applications of such medical information. The FTC should promptly develop and require a mechanism to obscure medical debtor names in credit reports.

The Fair Credit Reporting Act prohibits states from enacting any laws that provide protections beyond those guaranteed by federal statute. On January 1, 2004 this provision will expire, although the federal law will otherwise remain in place. Contrary to some characterizations, the entire act will not "sunset" on this date. This prohibition on supplemental state protections should not be extended, and if any changes to the Fair Credit Reporting Act are to be made at the federal level, they should result in greater consumer protections and address the problems raised in this and other research.

IX. Recommendations for Consumers

Many of the concerns raised by this study address structural issues regarding the system of reporting and evaluating credit, which are beyond the scope of most consumers to influence. However, there are some steps consumers can take to reduce the likelihood of errors occurring, or to address them when they arise.

? Maintain consistency in credit applications: use your full legal name when applying for credit. If you have a generational title (Sr., Jr., III) always specify this.

? Review your credit record regularly by purchasing a credit report and score from each major credit repository once a year. The repositories can be contacted at the following phone numbers and website addresses: Equifax (800) 685-1111 or www.equifax.com; Experian (888) EXPERIAN or www.experian.com; Trans Union (800) 888-4213 or www.transunion.com.

? Prior to applying for a mortgage, consider obtaining a current copy of your credit report and score from each major repository, and review it for errors.

? Dispute any errors that appear on your credit report by contacting the credit repository. However, avoid "credit repair" businesses that claim to be able to erase valid items in consumers' credit histories.

? Don't underrate your credit. Ask for specifics if a lender tells you that you have bad credit and don't qualify. Currently lenders do not have to tell you the specifics, or show you the credit report that they review, but they are permitted to. If a lender refuses to talk to you about the specifics of your credit report, consider a different lender.

? If you have complaints about your credit report and are unable to have them quickly resolved, contact the Federal Trade Commission at 1-877-FTC-HELP or www.ftc.gov.

State of Washington
Office of Insurance Commissioner

Mike Kreidler, Insurance Commissioner

A Report to the Legislature

Effect of Credit Scoring on Auto Insurance Underwriting and Pricing

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Table of Contents

EXECUTIVE SUMMARY

In 2002 the Washington State Legislature passed ESHB 2544, restricting the use of credit scoring in personal lines of insurance underwriting. ESHB 2544 also directed the Insurance Commissioner to produce two studies, on the effects of credit scoring before and after ESHB 2544. To conduct the first study mandated by ESHB 2544, the Office of the Insurance Commissioner hired independent research and consulting services – PRR, Inc, and Washington State University's the Social and Economic Sciences Research Center, affiliated with Washington State University.

Three insurance companies each provided data on several thousand randomly chosen consumers. The insurance company data included

- age,
- gender,
- residential zip code,
- date policies started, and
- credit scores and/or rate classifications.

About 1,000 of each firm's consumers were contacted by phone. The phone survey gathered information about

- ethnicity,
- marital status,
- income level, and
- for 212 people whose policies had been cancelled because of low credit scores, information about how cancellation affected them, and how difficult it was to find replacement insurance.

Each of the three insurance companies used a different credit-scoring model. Only one insurance company had cancelled policies solely because of credit scores, and that practice had already been discontinued when the study began.

The purpose of the study was to find out whether credit scoring has unequal impacts on specific demographic groups – not to determine whether low credit scores correlate with higher loss ratios, or whether the use of credit scoring is inherently fair or unfair to individual consumers, or how accurate credit history information is.

This study has very specific limitations:

- Because practices vary widely from one insurance company to another, findings about credit scoring in one firm may not apply to others. Principal variations include:
  - The credit scoring model used;
  - The population to which it is applied, and

- The role of credit scoring in setting rates and assigning consumers to risk pools.

- Insurance companies vary in the way they set rates for people who do not have enough credit history to compute a credit score. Some companies view this as a negative factor, while others consider it a neutral factor.
- Certain ethnic groups in Washington have relatively few older people, making it difficult to compare them with other ethnic groups in the same age range.
- Washington has a low overall percentage of people of color, which limits the accuracy of the data for specific ethnic groups such as Native Americans.
- The study was based on records of insurance company customers, so it does not provide information about people who were refused insurance based on credit scores.
- This study does not examine whether the credit information used to set rates is accurate.

FINDINGS OF THE STUDY

The demographic patterns discerned by the study are:

1. Age is the most significant factor. In almost every analysis, older drivers have, on average, higher credit scores, lower credit-based rate assignments, and less likelihood of lacking a valid credit score.

2. Income is also a significant factor. Credit scores and premium costs improve as income rises. People in the lowest income categories – less than $20,000 per year and between $20,000 and $35,000 per year – often experienced higher premiums and lower credit scores. More people in lower income categories also lacked sufficient credit history to have a credit score.

3. Ethnicity was found to be significant in some cases, but because of differences among the three firms studied and the small number of ethnic minorities in the samples, the data are not broadly conclusive. In general, Asian/Pacific Islanders had credit scores more similar to whites than to other minorities. When other minority groups had significant differences from whites, the differences were in the direction of higher premiums. In the sample of cases where insurance was cancelled based on credit score, minorities who were not Asian/Pacific Islanders had greater difficulty finding replacement insurance, and were more likely to experience a lapse in insurance while they searched for a new policy.

4. The analysis also considered gender, marital status and location, but for these factors, significant unequal effects were far less frequent.

RECOMMENDATIONS

This study indicates that there is a need for examination of more companies and larger samples of consumers. Unequal effects are too common to be random events, but too varied across different insurers' situations for a clear pattern to emerge. Results vary too much from firm to firm to support a clear estimate of the overall size or pattern of unequal impacts on people of color, but the limited data studied do suggest that such impacts may exist. Data also indicate that low income people are more likely than higher income people to have their premiums raised as a result of credit scores.

Other aspects of credit scoring outside the scope of the data in this study – such as insurer refusals based on credit scores, and inaccuracy in credit scores – should also be investigated.

BACKGROUND

Since the mid-1990s, many insurance companies have been using consumer credit history as one of the factors they consider when they make decisions about how much to charge for auto, homeowners' and renters' insurance, and when to cancel or non-renew insurance policies.

Because credit scoring increases premiums for some people and reduces premiums for others, this practice has generated vigorous debate. Questions have been raised about the validity of credit history as a predictor of risk, its fundamental fairness, and the impact of credit scoring on people of color and the poor.

Insurance companies contend that there is a correlation between lower credit scores[1] and higher loss ratios. Therefore, insurers argue, using credit history is fair, and benefits consumers whose good credit scores indicate lower risks. Insurance companies also argue that using consumer credit history is non-discriminatory because it is "color blind," and because there is no consistent correlation between level of income and credit score.

Consumer groups contend, however, that while credit scoring may not be intentionally discriminatory against people of color and the poor, it may nonetheless produce disparate impacts that unjustly harm these groups. Consumer groups also note that the data in credit reports are often inaccurate, and that the process for correcting inaccuracies is cumbersome and time-consuming, especially for those whose time is already stretched by work and family obligations.

Moreover, credit scoring models and how they are used vary from one insurance company to another. Therefore, it can be very difficult for consumers to know how they are affected when credit scores are used as one element in a complex formula for determining rates or assigning consumers to risk pools.

Since 1996, insurers' use of credit scoring has increased, and so has the intensity of the debate about this practice. In 2002, 26 state legislatures considered bills to regulate or restrict this practice, and The Washington State Legislature adopted ESHB 2544. (Described in more detail below.)

In 2001, the National Association of Insurance Commissioners (NAIC) formed a work group to study this issue, to develop regulatory options, to provide consumer information, and to consult with the Federal Trade Commission (FTC) and the American Academy of Actuaries. Washington Insurance Commissioner Mike Kreidler co-chairs this work group.

The NAIC workgroup has already achieved two specific changes:

- The FTC has reiterated, in a strong public statement, that insurers must provide notice to consumers when an action, which is based on credit score, adversely affects them. Prior to this statement, insurers maintained that certain actions, such as not offering the lowest price, were not necessarily adverse actions.

- At the request of the NAIC, the American Academy of Actuaries has evaluated four studies on insurance credit scoring. They concluded that these studies do not directly address the issue of whether this practice has a disparate impact on people of color and/or the poor. This is significant because insurance companies have cited these studies as evidence that insurance credit scoring does *not* have a disparate impact.

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[1] Credit scores used in insurance are not the same as determinations of "credit worthiness" for mortgages, credit cards, or other loans. Credit scores are based on the same raw credit information used for those purposes. However, the various components of credit history are considered or "weighted" differently for insurance purposes than they are for credit worthiness. Which particular components of credit activity are considered, and the relative weighting of each component, depend upon which of many different statistical scoring models are used.

According to the Washington State Office of the Insurance Commissioner (OIC), consumers have submitted 374 written complaints involving credit issues between 1989 and 2003, and 82% of these complaints were received between 1997 and 2002. The OIC also reports 1,164 consumer phone calls about the use of credit scoring. In addition, the OIC has received numerous calls from concerned insurance agents about their inability to find insurance for people they believe to be good risks, but who have less than perfect credit scores.

The following accounts indicate why some Washington residents are concerned about the use of credit scoring in insurance:

- A Lacey couple was denied the best credit score because they pay all their credit cards in full each month.
- A Seattle man suffered injuries from an accident involving a drunk driver. After twelve surgeries and steep medical bills, he and his wife missed some payments on their bills. The wife is frustrated because she feels she shouldn't have to pay as much for their insurance as the person with the DUI.
- A Seattle area divorced mother sought bankruptcy protection when her ex-husband defaulted on his business debts and she was in danger of losing her home. Now, because of her ex-husband's actions, her credit score has plummeted and she is required to pay much more for her insurance.
- An American citizen established good credit in Canada, where he lived for 21 years. He recently moved to Washington and is having trouble finding reasonably priced auto insurance because insurers claim he has no credit history.
- A 50-year-old woman who has never had a traffic accident or a ticket was laid off from an Air Force installation where she had worked for 23 years. Her credit suffered because of her unemployment.
- A firefighter had to file bankruptcy during a dispute over his parents' estate because his brother was embezzling assets. Subsequently, he was not renewed by his insurance company because of his credit score.

ESHB 2544

In 2002, Insurance Commissioner Mike Kreidler, Attorney General Christine Gregoire, and Governor Gary Locke requested legislation restricting the use of credit scoring in personal lines of underwriting and rate-making.[2] In response to this request, the 2002 Washington State Legislature enacted ESHB 2544, now codified in RCW 48.18.545 (effective January 1, 2003) and 48.19.035 (effective June 30, 2003).

ESHB 2544 restricts the use of credit scoring in several ways:

1. Insurance companies may not cancel or non-renew a person's insurance solely because of his or her credit history;

2. Credit history may not be the principal basis for denial of insurance;

3. The calculation of credit scores may not include

[2] Personal lines of insurance include home, auto, and renter's insurance.

- the number of credit inquiries;
- medical bills;
- the initial purchase or financing of a vehicle or home;
- the type of credit, debit, or charge card;
- total available credit;
- disputed credit items (once resolved in the consumer's favor); and,
- lack of credit history, unless actuarial data show that the resulting rates are not excessive or discriminatory.

In September, 2002, the Insurance Commissioner issued rules to implement the new law. The rules define and further clarify the notices that must be provided to consumers when an adverse action is taken against them based on credit history. The rules also specifically direct insurers to file their credit scoring models with the Insurance Commissioner. Under the terms of ESHB 2544, these credit-scoring models are considered proprietary information that will be kept confidential unless the Insurance Commissioner undertakes an enforcement action.

ESHB 2544 also directs the Insurance Commissioner to produce two studies – the first due in January, 2003, and the second due a year later. The first study is a review and analysis of insurance credit scoring that includes:

1. The types of consumers who benefit from or are harmed by the use of credit history as a basis for insurance rating and underwriting;

2. The extent to which the use of credit scoring affects rates charged;

3. Whether insurance credit scoring results in discrimination against the poor or people of color.

This study focuses solely on auto insurance, and is designed primarily to address the third of these topics: effects upon the poor and people of color. In addition, it provides some information about the first topic – the general pattern of positive and negative effects from credit scoring.

The second report, due in January, 2004, will analyze how the implementation of ESHB 2544 has affected consumers.

METHODOLOGY

Credit reporting agencies, which are regulated by the Federal Fair Credit Reporting Act, sell credit-scoring services to insurance companies. These credit scores are used by insurers to decide whom to insure and how much premium to charge. A credit-scoring model takes personal credit history, and converts that data to a "credit score" using a complicated statistical formula.

These models are based on past patterns of credit behavior that have been correlated with insurance claims. Although credit-scoring models use the same raw data on which credit worthiness is determined for mortgages, credit cards, and other loans, they use it somewhat differently. The various components of credit history are considered or "weighted" differently for insurance purposes than they are for credit worthiness. The particular components of credit activity considered, and the relative weighting of each component, depend upon which of many different statistical scoring models is used.

This study collected empirical evidence on the demographics of credit scoring, and evaluated the incidence of credit scoring effects on certain demographic groups.

The data used in this study were based on records of policyholders who were insured by three insurance companies. Because of this reliance on customer records, this study cannot assess the impact of underwriting actions where individuals were denied coverage, nor of situations where an individual was quoted such a high price for coverage that they chose not to buy it from that insurer.

The statistical models used for computing credit scores are very complicated, and are considered proprietary assets by credit reporting agencies. Many variations of credit scoring models exist, and insurers often request that models be customized to fit their customer base, service area, and underwriting practices. Thus, there is no single credit-scoring model about which definitive conclusions can be reached. For examples of the factors used in credit scoring models see Appendix A. Different insurers use these factors in different ways in underwriting and pricing.

The primary focus of the analyses in this report was the relationship of negative effects to ethnicity or income characteristics. In both cases, analyses were done on an age-adjusted basis. Multivariate models also evaluated the possibility of effects by gender, marital status, and location.[3]

The results of this study begin to describe the range of possible results from credit scoring, but are directly applicable only to the three firms whose customer data was used.

None of these analyses could determine whether the shifts in costs (lower costs for people with higher credit scores; higher costs for those with lower or no credit scores) for a specific demographic group were correlated with higher risks or claims for that group. This study examines the question of *whether the cost shifting affected all demographic groups equally*.

DATA

Three insurance companies each provided data on several thousand randomly chosen consumers. Each of the three insurance companies used a different credit scoring model. Only one insurance company had cancelled policies solely because of credit scores, and that practice had already been discontinued when the study began.

[3] Two location distinctions were tested: Eastern Washington versus Western Washington, and inside a federal Metropolitan Statistical Area versus outside such areas. Federal Metropolitan Statistical Areas include counties with either major urban centers or significant suburban populations related to major urban centers.

The insurance company data included

- age,
- gender,
- residential zip code,
- date policies started, and
- credit scores and/or rate classifications.

About 1,000 of each firm's consumers were contacted by phone. The phone survey gathered information about

- ethnicity,
- marital status,
- income level, and
- for 212 people whose policies had been cancelled because of low credit scores, information about how cancellation affected them, and how difficult it was to find replacement insurance.

STATISTICAL METHODS

The primary statistical methods used were linear and logistic multivariate regressions. Linear regressions calculate the best statistical "fit" among factors when they have arithmetic relationships; for example, when one factor tends to rise whenever another falls. Linear regressions were used to estimate the relationship between demographic characteristics and numerical outcomes or measures, such as credit scores or discounts. Logistic regressions calculate the best statistical "fit" among factors that influence a probability. For example, the models estimate how much an increase in a particular factor changes the probability of an outcome event. Logistical regressions were used to estimate relationships when the outcome under study was a categorical yes/no, such as being placed with a higher cost pool, having no usable credit file, or having a policy cancelled.[4]

Multivariate regressions are used to simultaneously estimate the strength of multiple relationships among factors. For example, success in some sports may be a function of an athlete's physical characteristics, such as height and speed. Because longer legs cover more ground, the two often go together – but not always. Separately comparing performance by height and by speed will overestimate the effect of each. A multivariate approach produces a pair of simultaneous estimates for the separate contribution of each factor without "double counting" the same performance for someone who is both tall and fast.

Multivariate procedures are essential to this study because of the inter-relationship of age with income and ethnicity. Income generally rises with age, up until retirement age. In Washington State's population, many ethnic minorities have arrived in substantial numbers over the last few decades. As a result, there are relatively few older minority members in the population. If data are considered only by ethnicity, any

[4] In many cases, stepwise regression procedures were used. With stepwise regression, factors are added sequentially to the model. At each step, all of the statistically significant factors not yet included are tested for inclusion in the model equation. The factor which most improves the fit of the model is then added. This process is repeated and continues until all not-yet-included factors would not be statistically significant if added to the model. The standard probability value of .05 was used as the statistical significance criterion.

practice where older individuals have better results than younger ones can be misinterpreted as having a negative effect on minorities.

Because there is a substantial history in law and practice supporting higher risks and therefore higher premiums for younger drivers, age effects that favored older drivers were treated differently in this study from other demographic patterns. Analyses to detect other patterns were done on an "age-adjusted" basis so that age-related patterns were not mistakenly classified as unequal effects on groups based on income, race, gender, marital status or location.

Sample Size and Frequency of Response

The sampling frames for telephone surveying were developed from contact information for random samples of customers from each of the three firms. The first step was to use the services of Experian to check and update the telephone numbers for those in the lists. This step resulted in approximately 10% of the telephone numbers being updated.

The goal was to obtain a response rate of approximately 50%. Names were initially selected from the sample lists, and then five attempts to reach those telephone numbers were conducted on various days of the week and at various times of the day to control for sampling bias. Additional potential respondents were randomly selected from the sample lists only after five attempts without a successful interview, or when a disconnected or wrong number was determined to be non-traceable.

Non-Response to Specific Questions

Some of the survey respondents declined to answer specific demographic questions. In come cases, the respondent was not the policyholder and did not know some of the requested information. The following table indicates the "decline" and "don't know" percentages for the income question. Refusal and "don't know" rates on all the other items were substantially lower. These results are consistent with typical refusal rates for such demographic questions. In fact, the refusal rate for the income question was about half of what is normally experienced.

Figure 1
Percentage Who Answered Refused or Don't Know

	Firm 1		Firm 2	Firm 3
	Cancelled/High Score	General Sample		
Income	10.70%	7.5%%	8.80%	8.90%

Developing and Selecting Regression Models

Although the questions posed for this study appear clear and direct, answering them is complicated. Each insurer had different practices and provided different data. Company policies changed in important ways during period under study. The relationship between credit scores and factors such as income can take several different forms,[5] which expands analysis beyond a single test of a single variable. The results presented in this report

[5] Credit score might double when income doubles. Or, credit score might rise whenever income rises, but not at a constant rate. As an example, doubling a low income might be associated with a credit score increase of 50%, while doubling a middle income might be associated with a much smaller credit score increase, like 20%. Or very low-income individuals might have lower credit scores than middle and upper income individuals, among whom income makes no difference at all.

were selected after investigation of many alternatives as providing the most accurate and representative picture of the relationship between credit scoring and demographic characteristics in these samples.

STRENGTH OF THE RESULTS

The multivariate regression models only explain a fraction of the variance in score or discount found in the sample population. The strength of the relationship estimated in multivariate, models are measured using a statistic called R-squared. If there is no correlation, the R-squared would be 0. If the model combined several factors to produce an exact prediction of each policyholder's score or discount, the R-squared would be 1.0. R- squares for the regressions for this report range roughly from 0.04 to a 0.3, with most between .05 and 0.15. (See Appendices C through E) This indicates that while there are statistically detectable patterns in the demographics of credit scoring, most of the variation among individual scores is due to random chance or other factors not in this data.

Some of the correlations with specific factors are strong and consistent. In particular, there is a strong positive correlation with age: older individuals tend to have more positive credit scores and score-influenced insurance effects. Other correlations are not as strong, as noted in the discussion of individual analyses.

THE ANALYSIS

FIRM I

Questions

The first review involved three questions:

- Are credit scores independent of demographics?
- What were the effects of credit-based policy cancellations?
- What is the pattern of credit scores among this insurer's policyholders?

Structure

Policyholder information was provided which covered three periods, during which the company had three different policies on the use of credit scores.

1- Period One: For a time, the company was terminating coverage of some policyholders based on negative credit score information. A sample of policyholders cancelled during this period was provided.

2- Period Two: The company discontinued credit-based cancellations, but continued to acquire credit scores on all policyholders and applicants, using this information for risk and rate assignment. A random sample of all policyholders was provided for this period. In addition, a sample of very high credit score policyholders was provided for this period. This sample was used for comparison with the cancelled policyholders.

3- Period Three: The company shifted to using credit scores selectively, acquiring this information only on a fraction of new applicants. How these individuals were selected or how the information was used is not known. A small random sample of policyholders who were first covered during this period was included.

Cancelled and High Score Samples

The samples surveyed included cancelled policy holders (n = 212), as well as those with the highest credit scores (n= 217), providing a margin of error of approximately of +/- 5% for a yes/no question.[6] The response rates for those cancelled and for those with high scores were 66% and 71% (respectively), of those whom the interviewers tried to contact.

General Sample

The survey of the general sample of policyholders resulted in 996 responses. The response rate was 61% of those whom the interviewers tried to contact. This sample sizes provided a margin of error of approximately +/- 3 percent for a yes/no question.

Data Provided

In addition to age, gender, and zip code, the insurer also included credit scores and policy start dates.[7] Three separate samples were provided:

1- Policyholders previously cancelled because of low credit scores
2- Current policyholders with very high credit scores, and

[6] This means that we can be 95% confident that the survey results for a typical yes/no question are within +/-5% of the results we would get if we surveyed the entire population. A confidence level of 95% means that only once in 20 times would we be wrong in making this assumption.

[7] As well as some driving record information that did not play a major role in this analysis.

3- A random sample of current policyholders.

Period 1

Demographics of Cancellation

To determine whether credit scores were independent of demographic characteristics, the sample of cancelled policyholders was compared with a sample of policyholders from the extreme high end of the credit score spectrum. Credit scores ranged over a scale of about 560 points. The threshold for policy cancellation included the bottom 0-150 points on that scale.[8] The sample of very highest credit scores were all within 20 points of the maximum, ranging from 540 to 560.

The dominating statistical difference was age. There was almost no overlap in the ages of the two groups. Ninety percent of the cancelled policyholders were under 55; in contrast, 93% of the highest scoring policyholders were over 65. Given this near-total separation of the two groups, there was very little potential to determine what other differences existed between the groups.[9]

These two samples were so different that we can conclude that credit scoring is definitely not totally independent of demographic characteristics. However, age differences so dominate this comparison that no definitive conclusions could be reached about possible demographic differences other than by age.

Survey Data on Cancellations in Period One

The phone survey asked cancelled policyholders additional questions about the consequences of cancellations. The key results were:

- Five percent of those cancelled could not obtain replacement coverage.
- Over a quarter experienced a period of no coverage between the expiration of the cancelled policy and obtaining a replacement policy. This had a particular (statistically significant) impact on minorities. Minority cancelled policyholders more often reported a period of lapse in insurance coverage between cancellation and obtaining new coverage. A substantial 54.3% among minorities reported a lapse in insurance coverage, compared to 24.2% of whites.
- Over 40% reported that obtaining replacement insurance was "very difficult." Higher premiums and applications to multiple insurers often resulted.
- Less than half reported that the letters they received from insurers adequately explained the reasons for cancellation.
- Over one quarter of those cancelled for low credit scores had no "incidents" in the insurer's records, though some had been with the insurer for more than ten years. Seventeen percent of apparently accident-free cancelled policyholders were minorities.

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[8] Some additional cases with higher credit scores were also coded as having been cancelled for credit score reasons, although their recorded credit score was above the cancellation cutoff indicated by the firm.

[9] To the very limited extent that the two samples overlapped, the cancelled policyholders included more minorities, more single/divorced/separated individuals, and more very low-income individuals. However, the dissimilarity of the samples makes these findings inconclusive.

Period Two

Period Two had the largest sample of any of the three policy periods covered in the data.

Credit Score

In Period Two, non-zero credit scores varied over a range of about 535 points.[10] Age was the dominant demographic factor associated with credit scores.[11] On an age-adjusted basis, there was no statistically significant relationship between credit scores and ethnicity or income.

Score of Zero

Inadequate credit files resulted in scores of zero, which presumably had a negative effect on rate classification. The only statistically significant association was that very low-income policyholders were much more likely to have insufficient credit history. Overall, only about one in 25 policyholders had a zero score, but for those in the lowest income group (less than $25,000 annual income), those probabilities shift to one in five.

Period Three

Credit scoring was only performed selectively, and the sample was too small to determine either the demographics of those selected for credit scoring or the patterns of their scores.

FIRM 2

Questions

Based on the findings from the first review, the principal questions were to determine the demographic pattern of both credit scores and the economic effects of those scores. Effects on policyholders with scores of "zero" due to inadequate credit history were identified as requiring separate analysis.

Structure

Firm 2's application of credit scoring was the simplest to analyze. Results for this firm have the fewest technical complications. This firm used credit scores to determine discount percentages from rates otherwise determined by traditional underwriting criteria, so the effect of credit scores is clearly represented by the distribution of discounts. The firm did not implement other major changes in rate setting at the time they implemented credit scoring. As a result, there is a substantial population of policyholders carried forward from the pre-credit scoring period.

This firm also had a significant number of policyholders with insufficient credit files. After discussion with the Office of the Insurance Commissioner when they filed their rating plan, the firm chose to rate such individuals at approximately the average discount given to all other customers. So, although we have separately analyzed the demographics associated with their "zero score" policyholders, it is not clear that having a "zero score" has a negative impact on those insured by this particular firm.

Sample

The survey resulted in 1,000 responses. Among those contacted, 72.6% agreed to participate. This constituted 43.3% of those whom the interviewers tried to contact. This sample sizes provided a margin of error of approximately +/- 3 percent for a yes/no question.

Data Provided

In addition to age, gender, and zip code, the insurer provided data on credit score, rate category, discount,

[10] This credit score scale did not start at 1, but at an arbitrary higher number.

[11] On average, every ten years of age was associated with an increase in credit scores of approximately 37 points (out of 535).

score order date, unusable thin or nonexistent credit record, and policy start date.[12]

Analyses

Premium[13]

Rate adjustments based on credit scores ranged from 17 % below average to 33% above average. Age was the more strongly correlated with credit-based rate adjustments than any other demographic factor considered.

Ethnicity

There were statistically significant differences, on an age-adjusted basis, for two ethnic groups, when compared with the majority ethnic group, Caucasians:

Credit scoring affected rates for two ethnic groups:[14]

- Rates for Asian/Pacific Island policyholders were reduced by about 5.5% of the average rate, relative to whites of similar age.
- Rates for Native Americans were higher by about 15.8% of the average rate, relative to whites of similar age.

Income

Credit scoring raised the average costs for poor policyholders relative to affluent policyholders. Across the entire income range, better-off policyholders had more favorable rate adjustments on average.

The poorest policyholders (under-$20,000 annual income) averaged rate increases of about 4% relative to the rates charged the $50,000 to $75,000 income group. Policyholders in the top category, $150,000 and up annually, averaged rate declines of about 4% relative to the $50,000 to $75,000 income group. These differences are adjusted to compare individuals of similar age.

Combination of Ethnicity and Income

Because ethnicity is associated with lower incomes among this firm's customers, the two effects cannot simply be added together to calculate, for example, the total average effect for policyholders who are both Native American and poor. The effects are slightly overlapping. So, on average, credit scoring raises the rates of poor Native Americans more than the rates of other low-income policyholders, but by less than the sum of 4 % and 15.5%.[15]

Zero Score

Ethnicity

After adjusting for the differences in the age composition of ethnic groups, there were no statistically

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[12] As well as some driving record information not used in this analysis.

[13] This analysis for effects on premium adjustments considered only those with non-zero credit scores.

[14] Two different age adjustments were fitted, with nearly identical results.

[15] The overlap reduces the effect to about 1.3 percentage points less than the sum of the separate effects. Low income Native American averaged about a 14.4% increase, relative to the low-income white population. The income effect declines slightly in the combined regression estimating both ethnicity and income. Credit scoring is estimated to have raised average rates for very low income Native Americans by about 18.2% relative to mid-income ($50-$75,000) white policyholders of similar age.

significant differences in the proportions of different ethnic groups who had a zero credit score.

Income

Credit scores of zero were more common among policyholders in the two lowest income categories. The overall probability of having a zero score was 28%. If a person had that average probability (28%) at middle and upper income levels, at low-income levels the same person would have a higher likelihood of a zero score:

- 48% if the group had annual incomes between $20,000 and $35,000, and
- 76% if the group had annual incomes between $20,000 and $35,000.

FIRM 3

Sample

The survey resulted in 978 responses. Among those contacted, 87.0% agreed to participate. This constituted 63.0% of those whom the interviewers tried to contact. This sample provided a margin of error of approximately ±3 percent for a yes/no question.

Questions

Based on the findings from the first review, the principal questions were to determine the demographic pattern of both credit scores and the economic effects of those scores. Effects on policyholders with scores of "zero" due to inadequate credit history were identified as requiring separate analysis.

Structure

This firm uses credit scoring in two ways.

- First, in combination with other traditional underwriting factors, credit scores are used to assign applicants to either the standard risk pool or a higher-cost pool. Of the sample reached by phone interviewers, 362 had been placed in the non-standard higher rate pool, and 616 with the standard rate pool.
- Second, within each pool, a credit-based score is assigned, and this score is used as a starting point for determining a premium rate.

Data Provided

In addition to age, gender, zip code, and policy binder date, the insurer provided data on the insurance pool customers were placed in, and which of five "bands" or tiers their credit score placed them in.[16] There was no identification of individuals with insufficient credit files to generate a score. However, the insurer places such policyholders in the next-to-lowest band, with premiums higher than average, but lower than their maximum. Therefore, the analysis of premiums shifts for this firm examines two effects of credit scoring in combination. It analyses the combined effect of both the direct influence through credit scores and the indirect influence through classification of those with score of zero due to inadequate credit history.

Analyses

Assignment to Risk Pool

The first step, assignment to regular or high-cost pools, was evaluated for demographic patterns. However, this step involves not only credit information, but also other driving-related data. Therefore, we cannot conclude that any identified unequal impacts were caused by credit scoring. These impacts might result, partly or entirely, from the driving and insurance histories of the firm's customers, and not from their credit scores.

[16] Also included was information on type of insurance and final premium classification, which was not used in this analysis.

The effects of this combined credit and driving evaluation are quite marked demographically. People were more likely to have credit scores of zero if they were young, poorer, African American and/or Hispanic.[17] However, because this is not a purely credit-based determination, it cannot be concluded that this unequal impact results from credit scoring.

Premium Levels

The firm's premium rating process, which relies solely on credit scoring, was evaluated separately for each of the two insurance pools.

Lower Cost Pool- Ethnicity

Credit score information raised Hispanic policyholders' rates by an average of 4% of average premiums, relative to white policyholders of similar age.[18]

Lower Cost Pool- Income

There was no statistically significant connection between income and rate adjustments based on credit information, with or without adjustment for differences in age distribution.

High Cost Pool- Ethnicity

Credit score rating raised rates for two ethnic groups:

- For Blacks, by 5.6% of average premium, relative to whites of similar age,
- For Native Americans, by 8.6% of average premium, relative to whites of similar age.

High Cost Pool Income

There was no general correlation between income and credit score rate adjustments across all income levels. However, for those with incomes below $20,000, analyses consistently indicated rates about 2% above other income groups, even with adjustments for age and ethnicity. While this difference was consistent, it was not always statistically significant, depending on the technical specifics of the model.

High Cost Pool Overlap of Ethnicity and Income

In a combined analysis including ethnicity, age and income, the effects do not cancel each other out. So the results can be thought of as additive.[19]

See Appendix E for coefficients and regression details.

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[17] The proportion of individuals placed in the higher cost pool was 37%, or overall odds of about 3-to-5. If a white person of a particular age had this average probability (37%) of having a zero score, an otherwise similar black person had a 60% probability, and a Hispanic person, a 69% probability. If a person with a $65,000 annual income had the average probability of a zero score (37%), the average person of the same age with an income of $30,000 would have a 50% probability of a zero score.

[18] Small numbers of ethnic minorities, and the refusal of some of those few to provide income information, made it impossible to measure the possible interaction of ethnicity and income with any certainty.

[19] In fact, the estimated difference for African-Americans and Native Americans gets slightly larger in the combined analysis. The combined effect for poor African-Americans is 8.5%, and the combined effect for poor Native Americans is 11.3%. Paradoxically, while the factor for Native Americans both gets larger it also exceeds the statistical significance limit of .05, rising to .066. One of the consequences of the relatively low numbers of minority groups in the samples is that small changes in data or analytic models can change the results of statistical significance tests.

CONCLUSIONS

Based on these analyses, it is probable that credit-scoring impacts are not equally distributed across demographic groups. In almost every multivariate analysis, some groups were significantly associated with differential effects that have economic consequences. Although there were considerable differences among the models, it did not appear to be mere random variation.

The demographic effects varied significantly among the three insurers studied. Assuming that these three insurers are representative of insurers in general, substantial variation among insurers should be generally expected. Based on the variations found in these three firms, and on a limited literature review, variation in effects is likely due to differences in:

a. The credit scoring model used,
b. The population to which it is applied, and
c. The role credit scoring has in the insurer's underwriting and ratemaking processes.

Therefore, an overall conclusion that credit scoring generally does or does not have a particular consistent, quantifiable, unequal negative effect on certain demographic groups is premature. Possible negative effects will have to be directly evaluated using data on the outcomes for each insurer's practices and clientele, at least until there is more understanding of when and why particular unequal impacts result.

Classification based on credit score is not identical to classifying people based purely on demographic groupings. Rather, demographically unequal impacts appear to be significant side effects of credit scoring. No large demographic group has uniformly low credit scores. However, low credit scores may be much more common in some groups than others.

There are other potential negative consequences of credit scoring that are beyond this study's scope. Possible demographic inequality in decision about whom to insure is one such possibility. Erroneously identifying individuals for higher risks and premiums based on information unrelated to risks is another. Another possibility is inaccurate credit scores due to inaccurate information in the credit history systems.

SPECIFIC DEMOGRAPHIC PATTERNS

Age is Most Significant

In most analyses, older drivers had, on average, higher credit scores and lower probability of a zero credit score.[20] Because this pattern favors older drivers, and using youth as a risk factor for auto insurance has well-established legitimacy, age was considered mostly as an adjustment factor when analyzing the correlations of other characteristics with credit scores. Analyses for patterns in other demographic characteristics were done on an age-adjusted basis, except where testing demonstrated that age was not a significant factor.

Other Key Characteristics

Possible negative effects on ethnic minorities and low-income individuals were of particular concern in this study. The relationship of income and ethnicity to credit scores was much less consistent than the relationship between age and credit scores. It is possible that one implementation of credit scoring has significant effects in these areas, while another implementation does not. Larger samples and studies of additional insurers might clarify the patterns among these factors.

[20] There is some evidence that the age effect flattens at the lower end, and that those under 30 do not have worse credit associated scores and impacts than those aged 30-40, but this is complicated by age-related differences in the percentages not having a usable credit score.

1. Income

Income was the second most frequent factor of statistical significance, whether as a general tendency for credit scores to get better with rising income, or as a tendency for those in the lowest one or two income categories to have negative effects.[21] In some cases, lower income was also associated with higher probability of receiving a zero credit score due to lack of credit history.

2. Ethnicity

Ethnicity was also found to be a statistically significant factor in several cases. However, the relatively small numbers of ethnic minorities, and the number of refusals and unclassifiable survey responses made this very difficult to pin down. In general, the Asian/Pacific Islander individuals had credit effects more similar to whites than to other people of color. For non-Asian/Pacific Islander minorities, in those cases in which ethnicity differences were found to be significant, the differences were in the direction of higher costs for ethnic minorities.[22]

Other Factors Insignificant

Statistically significant results for gender, marital status and location were sufficiently infrequent that, if these three firms are a representative sample, less attention needs to be paid to possible patterns of negative effects for these groups. However, other reports indicate that some other insurers include credit information on additional drivers beyond the named policyholder in their credit scoring processes. It would be important to fully evaluate possible gender and marital status factors in studying insurers employing such practices.

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[21] The lowest categories were "less than $20,000 per year" and "$20,000 to $35,000 per year."

[22] The consistency with which estimated effects for most minorities were in the direction of higher costs is one of the reasons this report recommends serious study and further investigation with larger samples. While estimated ethnicity effects often failed to pass tests for statistical significance, they were almost always in the direction of higher costs for minorities, except for Asian/Pacific Islanders.

APPENDIX A

TRANSUNION REASON CODES FOR NEGATIVE OR DEROGATORY CREDIT REPORTS

Excessive or unknown amount owed on accounts
Recent delinquency
Absence of revolving credit accounts
Too many accounts with balances
Too many finance company accounts
Too many recent credit checks
Too many new accounts
Proportion of revolving balances to revolving credit limits is too high or there are no revolving credit accounts
Excessive amount owed on revolving accounts
Insufficient length of revolving credit history
Delinquency date too recent (or date unknown)
Insufficient length of credit history
Delinquency
Recent derogatory public record or collection
Past due balances
Delinquency, derogatory public record or collection
Presence of collection accounts
Too many revolving accounts with balances
Date of last credit check too recent or unknown
Insufficient time since most recent account established
Unfavorable number of installment loan accounts
Too many installment loan accounts with outstanding balances
Insufficient time since most recent installment loan established
Too many accounts with high credit amounts
Proportion of loan balances to installment loan amounts is too high
Unfavorable number of real estate accounts
Too many new or existing finance company accounts
Prior installment loan delinquency or no installment loans present
Unfavorable percentage or open revolving accounts to all other accounts
Presence of delinquency, public record or collection
Delinquency on open revolving accounts
Finance company account opened recently
Unfavorable number of accounts
Unfavorable length of time since most recent retail account opened
Too many recently active finance company accounts
Unfavorable number of recently active accounts
Unfavorable number of revolving or open accounts
Unfavorable number of adverse public records

APPENDIX B

RANGE OF DEMOGRAPHICS IN THREE INSURERS' CLIENTELE*

Race		
	Low	High
Black	0.3%	3.3%
Hispanic	1.5%	7.4%
Caucasian	77.3%	94.3%
Asian/Pacific Islander	2.6%	9.1%
Native American	0.8%	1.5%
Multi-Racial	0.4%	1.1%
Other	0.4%	0.7%
Marital Status		
Single, Divorced, Separated	22.5%	44.9%
Married/Widowed	55.1%	77.5%
Gender		
Male	46.6%	66.0%
Female	34.0%	53.4%
Geography		
In Eastern Washington	13.0%	16.2%
In Metropolitan Statistical Area	76.0%	85.2%
Age Distribution		
Under 30	6.4%	30.1%
Between 30 & 40	11.4%	26.7%
Between 40 & 50	21.1%	28.3%
Between 50 & 60	13.7%	22.5%
Between 60 & 70	5.5%	17.2%
70 & Up	3.9%	17.2%
Annual Income		
Under $20,000	13.0%	23.9%
$20,000-$35,000	19.2%	27.1%
$35,000-$50,000	20.8%	23.1%
$50,000-$75,000	16.7%	21.3%
$75,000-$100,000	5.4%	11.5%
$100,000-$150,000	2.9%	7.6%
Over $150,000	2.3%	4.2%

*Estimated from Telephone Survey Samples

APPENDIX C

FIRM 1 REGRESSIONS FOR EFFECT ON CREDIT SCORE

Notes:

The dependent variable is credit score
Credit scores varied by 535 points, from lowest to highest

Ethnicity and Income

Notes:

Both Ethnicity and Income were not found to have statistically significant correlations with credit scores in this case.

Correlation with Age and other factors is shown in the regression described below.

	Linear Regression
Sample N	889
R Square	0.303
Adjusted R Square	0.300

	Unstandardized Coefficients	Standard Error Of Coefficient	Standardized Coefficients	T-Statistic	Range Of Values	Sig.
Age at Rating	**3.696**	0.199	0.529	18.620	22-98	**0.000**
Married Female	**15.790**	5.865	0.076	2.692	0-1	**0.007**
Eastern Washington	**-17.820**	7.747	-0.065	-2.300	0-1	**0.022**
Constant	518.528	11.064		46.864		

***Bolded entries in the first and last columns indicate statistically significant variables.**

Calculation of Change in score

Notes:

The Coefficients for Married Females and Eastern Washington residents are directly interpretable as:

- Plus 16 points on average for married women, after adjusting for age and proportion living in Eastern Washington
- Minus 18 points on average for Eastern Washington residents, after adjusting for age & proportion of married females

The results for married females apply to those cases in which they are the lead policyholder or "named insured".

Example Used in Footnote

	Coefficient (Change per one unit of the Factor)	Shift Measured in Years of Age difference	Credit Score Points
Age at Rating	3.696	10	37.0

FIRM 1 REGRESSION FOR HAVING A CREDIT SCORE OF ZERO DUE TO INADEQUATE CREDIT HISTORY

Ethnicity

Evidence That Correlations With Ethnicity Are Not Statistically Significant At This Sample Size

Note: The dependent variable is the categorical outcome of having a credit score of zero. Coding 1= having a score of zero.

	Logistic Regression
Sample N	917
Cox & Snell R Square	0.015
Nagelkerke R Square	0.053

	Raw Coefficient	Standard Error	Wald Statistic	Range Of Values	Significance	Exponentiated Coefficient
Age	-0.163	0.061	7.117	22-98	**0.008**	**0.850**
Age Squared	0.002	0.001	8.949	484-9604	**0.003**	**1.002**
African American	-4.597	34.879	0.017	0-1	0.895	0.010
Hispanic	-4.997	16.591	0.091	0-1	0.763	0.007
Asian/Pacific Islander	0.917	0.775	1.400	0-1	0.237	2.502
Native American	-4.830	30.055	0.026	0-1	0.872	0.008
Multi-Ethnic	-4.692	21.321	0.048	0-1	0.826	0.009
Constant	0.471	1.643	0.082	1.000	0.775	1.601

***Bolded entries in the first and last columns indicate statistically significant variables.**

Income

Note: The dependent variable is the categorical outcome ofhaving a credit score of zero. Coding 1= having a score of zero.

	Logistic Regression
Sample N	847
Cox & Snell R Square	0.026
Nagelkerke R Square	0.094

	Raw Coefficient	Standard Error	Wald Statistic	Range Of Values	Significance	Exponentiated Coefficient
Income less than $20,000	1.865	0.367	25.900	0-1	**0.000**	**6.458**
Constant	-3.690	0.239	239.195		0.000	0.025

***Bolded entries in the first and last columns indicate statistically significant variables.**

Calculation Of Odds And Probability Shifts For Example In Text

	Typical Probability	Probability Expressed As Odds Ratio Relative To 1	Exponentiated Coefficient	Odds Ratio With Characteristic (Relative To 1)	New Odds Ratio Expressed As Probability
Income less than $20,000	0.04	0.042	6.458	0.269	21.2%

APPENDIX D

FIRM 2 REGRESSIONS FOR PREMIUM SHIFT

Ethnicity

Notes:

The dependent variable is percentage reduction in premium down from maximum rates.

Credit based rate adjustments ranged to 32 % below maximum, which translates as from 17% below average premium to 33% above average premium.

	Linear Regression
Sample N	767
R Square	0.058
Adjusted R Square	0.055

	Unstandardized Coefficients	Standard Error of Coefficient	Standardized Coefficients	T-statistic	Range of Values	Sig.
African American	-3.755	3.127	-0.042	-1.201	0-1	0.230
Hispanic	-2.688	1.999	-0.047	-1.345	0-1	0.179
Asian/Pacific Islander	**4.110**	1.914	0.075	2.147	0-1	**0.032**
Native American	**-11.827**	3.133	-0.131	-3.775	0-1	**0.000**
Age at Rating	**0.250**	0.039	0.273	6.367	16-91	**0.000**
Age less than 30	**2.967**	1.414	0.090	2.098	0-1	**0.036**
Constant	**14.598**	1.890		7.722		**0.000**

***Bolded entries in the first and last columns indicate statistically significant variables.**

Calculation of Change in Rates

Note: Each percentage point below maximum translates to 1.333 percentage points relative to the average rate, which is 75% of the maximum.

	Coefficient	Conversion Factor From Percent Of Maximum To Percent Of Average	Change In Premium Expressed As Percent Of Average
Asian/Pacific Islander	4.110	1.333	-5.5%
Native American	-11.827	1.333	15.8%

Income

First Version of Age Adjustment

	Linear Regression
Sample N	767
R Square	0.072
Adjusted R Square	0.068

	Unstandardized Coefficients	Standard Error Of Coefficient	Standardized Coefficients	T-Statistic	Range Of Values	Sig.
Income	**0.966**	0.283	0.121	3.419	1-7	**0.001**
Age at Rating	**0.263**	0.039	0.288	6.679	16-91	**0.000**
Age less than 30	**3.710**	1.438	0.113	2.581	0-1	**0.010**
Constant	10.923	2.106		5.187		0.000

***Bolded entries in the first and last columns indicate statistically significant variables.**

Calculation of Change in Rates

Note: Each percentage point below maximum translates to 1.333 percentage points relative to the average rate, which is 75% of the maximum.

	Coefficient (Change Per One Unit Of The Factor)	Shift As Measured In Number Of Income Groups		Conversion Factor From Percent Of Maximum To Percent Of Average	Change In Premium Expressed As Percent Of Average
Income	0.966	3.000	2.898	1.333	-3.9%

Second Version of Age Adjustment

	Linear Regression
Sample N	767
R Square	0.076
Adjusted R Square	0.072