



Consumer Federation of America

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Comments by J. Robert Hunter, FCAS, MAAA¹ on “Some of the Reasons Why Credit Scoring is Actuarially Unsound”

I am Bob Hunter, Director of Insurance for the Consumer Federation of America.

Actuaries who, for the most part, work directly or indirectly for insurance companies developed the actuarial standards published by the actuarial associations. While most of the people who participate on actuarial committees are fine people, they have a point of view that is very much reflective of their training and their employers' point of view. Few of the developers of the standards have experience thinking about insurance issues from the consumer point of view. Thus, the standards have an insurer-bias and minimize restrictions on freedom of action of both the actuary and their employers.

Because of this “flexibility” I have been in many rate and other public hearings where the actuaries, all claiming to fully adhere to the standards, come out with wildly different recommendations.

Regulators should develop their own impartial standards to define “actuarial soundness.”

But even with this bias toward allowing everything to pass muster, Credit Scoring is Actuarially Unsound for Several Reasons.

Here are a few of the reasons:

- Credit scores are subject to manipulation, for example by services promising vast improvements in a person's score
- Credit scores are not based on a plausible (logical) relationship to risk and is thus obscure and irrelevant to the insurance provided.
- Credit scores are not objective because of how scores vary between credit bureaus, how lender decisions impact a score, how definitions of such key items as “bankruptcy” vary over time and other reasons.
- Credit scores are not supportive of the hazard reduction incentives of a sound class system; indeed, it undermines such incentives

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- Credit scores are a proxy for income and race, which actuaries know are prohibited criteria that should not be used, even in a back-door fashion.

To expand a bit:

Credit scoring is not objective because:

1. There are sharp differences for the same insured across the three credit bureaus. CFA's study of 500,000 credit reports for individuals found that consistent results (within 20 points) for all three repositories only happened 21 percent of the time. Errors were widespread, with 22 percent of people getting too low a score and the same percentage, 22 percent, receiving too high a score, which represents a 44 percent error rate. This research involved only one price break regarding the score needed to obtain the best credit terms, not the 50 rate tiers that some insurers use. Obviously it is likely that a large number of insurance applicants are not properly rated for insurance using credit score.
2. There are differences within a credit bureau due to lender choices of how to report and if to report information.
3. There are changes in definitions of key credit report items – bankruptcy law change is an example.
4. There are public policy initiatives changing credit scores – for example, a moratorium on foreclosures
5. There is a lack of information for many people – 25% of reports contain insufficient information for scoring, clearly that 25% of population have a variety of risk characteristics and are not the same from a risk standpoint.
6. The timing of report can change the result – the balance to limits item varies by time of the month
7. Decisions of lenders can impact the result – not reporting high limits to not alert competitors that a person is a good credit risk is an example.

Credit scores can be manipulated. Here is a couple of ways that happens:

1. A consumer receives a solicitation for manipulation from a service offering to raise your score by 100 points in 24 hours.
2. One consumer Piggy-Backs on another consumer
3. The consumer shifts balances from one card to multiple cards

Credit scores can penalize a consumer for rational behavior, for example:

1. When a consumer shops around for best rates
2. When a consumer cancels a card when lender acts unfairly

In my testimony, I comment on several excerpts from the American Academy of Actuaries “Risk Classification Statement of Principles,” showing some of the reasons that

credit scoring is actuarially unsound, even using a document developed by industry-oriented actuaries.

The Statement of Principles says an actuarially sound class system groups “risks with similar risk characteristics” together based on “relevant” factors. The statement goes on to say that “Risk classification characteristics should be neither obscure nor irrelevant to the insurance provided...” and that there must be a “plausible relationship between the characteristics of a class and the hazard insured against.”

The problem is that insurers cannot tell us what it is about a credit score that is linked with risk. They have merely a correlation to lean on, not a logical thesis underpinning the correlation. This is data mining at its worst and, because of the lack of any underlying rationale; the use of credit scoring in insurance is obscure to the insurance provided and therefore actuarially unsound.

Some actuaries have said that a thesis is not required because actuarial principles state that a cause and effect relationship is not required. While this is true, the principles also say that a “plausible relationship between the characteristics of a class and the hazard insured against.”—a logical underpinning for the use of the information -- is required.

Here is the key quote from the Causation Section of the Principles:

Often causality is not used in its rigorous sense of cause and effect but in a general sense, implying the existence of a plausible relationship between the characteristics of a class and the hazard insured against... Risk classification characteristics should be neither obscure nor irrelevant to the insurance provided; but they need not always exhibit a cause and effect relationship.²

Credit scoring is at best obscure relative to auto and home insurance, and probably is downright irrelevant.

Since there is no plausible logical basis underlying credit scoring, since it can be manipulated and since it is not objective the classification violates actuarial principles.

The rest of this testimony shows selected excerpts from the Statement of Principles along with comments as to why credit scoring violates the quoted material.

**EXCERPTS FROM “RISK CLASSIFICATION STATEMENT OF PRINCIPLES”
of the American Academy of Actuaries Committee on Risk Classification³**

² Risk Classification Statement of Principles, American Academy of Actuaries Committee on Risk Classification, at <http://actuarialstandardsboard.org/pdf/appendices/risk.pdf>.

³ Risk Classification Statement of Principles, American Academy of Actuaries Committee on Risk Classification, at <http://actuarialstandardsboard.org/pdf/appendices/risk.pdf>.

Statement from the “Summary” Section of the Statement of Principles

The grouping of risks with similar risk characteristics for the purpose of setting prices is a fundamental precept of any workable private, voluntary insurance system. This process, called risk classification, is necessary to maintain a financially sound and equitable system.

The following basic principles should be present in any sound risk classification system in order to achieve the above purposes:

- * The system should reflect expected cost differences.*
- * The system should distinguish among risks on the basis of relevant cost-related factors.*
- * The system should be applied objectively.*
- * The system should be practical and cost-effective.*
- * The system should be acceptable to the public.*

CFA Comment

There is no reason to believe that a person’s credit score is a “relevant” factor in measuring risk. Nor does the use of credit scores place “risks of similar risk characteristics” into each class slot. Grouping people by credit score is arbitrary and not based upon any logical connection between credit score and insurance risk. I will discuss the lack of a logical basis or “thesis” for credit scoring at some length under “Causation” below. Credit scores are not “relevant cost related factors.”

Credit scoring is not objective since, as I discuss below, credit scores are error-laden and subject to manipulation.

There is serious question about the acceptability to the public of the use of insurance scoring as discussed below. The rash of state legislative attempts to ban or otherwise control the practice measures the concern of the public.

Statement from the “Considerations in Designing a Risk Classification System” Section of the Statement of Principles

Program Design

1. *Degree of Choice Available to the Buyer*
The design of a risk classification system is affected by the degree to which the insurance program is compulsory or voluntary. For programs which are largely or entirely compulsory and where there is no voluntary choice among competing institutions, broad classifications are sometimes used, the extreme being a single class.

CFA Comment

Credit scoring is used particularly in home and auto insurance, which are not voluntary purchases for consumers given lender and state purchase requirements. This creates many tiers of prices, sometimes more than 50 tiers, resulting in very narrow classes, with some slots having few or even no people in the class.

Program Design – Cont'd

5. Absence of Ambiguity

The definition of classes should be clear and objective. Once a factual assessment of an individual risk has been made, no ambiguity should exist concerning the class to which that risk belongs. The classes should be collectively exhaustive and mutually exclusive.

6. Manipulation

The system should minimize the ability to manipulate or misrepresent a risk's characteristics so as to affect the class to which it is assigned.

CFA Comment

Credit scoring is not clear and objective and, thus, ambiguous. Scores vary between the three repositories, for instance, so an insurance price could depend on which credit repository the insurer chooses. Errors in the credit score abound, as CFA's research into 500,000 credit scores showed. Consistent results (within 20 points) for all three repositories only happened 21 percent of the time in our research. Errors were widespread, with 22 percent of credit reports surveyed receiving a score that was lower than they should have received and the same percentage, 22 percent, receiving too high a score, which represents a 44 percent error rate. This research was involved only one price break regarding the score needed to obtain the best credit terms, not the 50 rate tiers that some insurers use. Obviously it is likely that a large number of insurance applicants are not properly rated using credit scores.

As to manipulation, just type "Service to Improve Credit Score" into Google and you get over 27 million results. Some services promise such results as these promises:

Don't be surprised if you save 27% on your auto insurance alone!
(RepairYourBadCredit.com)

Increase your credit score 61 pts. in 30 days? (YourCreditAttorney.com)

Legally Raise Credit Score 100 pts. in 30 days. (ecreditattorney.com)

How I raised my credit score 40 pts. in 24 hrs. and saved \$8,000!
(thebestever/credit)

Statement from the “Hazard Reduction Incentives” Section of the Statement of Principles

Risk classification systems can be designed to provide incentive for insureds to act to reduce expected losses and thus operate to reduce the overall costs of insurance in total. For example, recognizing sprinklers for classifying risks for fire insurance coverages may encourage their installation and thereby reduce expected losses. Or reduced life insurance prices for non-smokers may encourage people not to smoke, thus reducing the hazard of premature death caused by diseases linked to smoking.

Such incentives are desirable, but not necessary, features of a risk classification system. Although worth pursuing, it must be recognized there are limits to which a risk classification system can be extended in an attempt to solve society’s problems and still serve the necessary and useful purposes for which such a system is designed.

CFA Comment

Use of credit scoring not only does not advance the goal of hazard reduction, it actively undermines it. Credit scoring has a major impact on price, often more impact than classes with a clear hazard reduction incentive, such as driving record or miles driven. Consumers do not understand what credit scoring has to do with their ability to drive well or be a safe homeowner. (In fact, neither do the designers and users of credit scoring in insurance) When consumers realize that their good driving does not mean as much as credit scoring, it frustrates them and undermines safety efforts.

Statement from the “Public Acceptability” Section of the Statement of Principles

Any risk classification system must recognize the values of the society in which it is to operate. This is a particularly difficult principle to apply in practice, because social values:

- * are difficult to ascertain;*
- * vary among segments of the society; and*
- * change over time.*

The following are some major public acceptability considerations affecting risk classification systems:

They should not differentiate unfairly among risks.

** They should be based upon clearly relevant data.*

** They should respect personal privacy.*

** They should be structured so that the risks tend to identify naturally with their*

classification.

Laws, regulations and public opinion all constrain risk classification systems within broad social acceptability guidelines. Legislative and regulatory restrictions on risk classification systems must balance a desire for increased public acceptability with potential economic side effects of adverse selection or market dislocation.

CFA Comment

Credit scores fail miserably in meeting the cited “public acceptability considerations.” Credit scores differentiate unfairly between risks because of errors placing at least 50% of applicants in the wrong tier and because richer people are less likely to be in credit difficulty and, if they are, are more likely to be able to afford a service to manipulate the results in their favor. Further, credit score is a proxy for income and race, as many studies, cited in the NAIC draft report, make clear.

Credit scores as a class are not based on relevant data. A credit score has nothing to do with insurance risk. A credit score has to do with financial history and fortunate or unfortunate circumstances. A specific score has nothing to do with driving capacity or ability to be safe in a home.

Using credit information to price insurance violates privacy. The intent seems more to find rich people than safe people.

It is laughable to think that credit scores are “structured so that risks tend to identify naturally with their classification.” If I have a score of 600, what does that say about my identification with another person with a 600 score? Do I feel a kinship with the 600 score people? Think of the myriad ways one can build such a score. How does that number create an identity?

The statement requires actuaries to follow the law. All state laws disapprove of classes that are unfair. Credit scoring is unfair for insurance purposes and questionable even for some credit purposes. People with a certain credit score may be in the category because of vastly different reasons. Consider these facts:

- A person’s credit report can vary dramatically among the three major credit bureaus, so a credit score can vary significantly depending upon which bureau provided the insurer with information.
- A credit score can vary depending on what time in the month your credit report was ordered.

- A credit score depends on the type of credit you have, meaning that a person can have a low score even with a perfect payment record. A credit card with some companies, obtaining a loan from a consumer finance company, or having an installment plan from a car dealer, may lead to a lower score regardless of your payment record.
- A credit score depends on the presence of loan information, so a person will receive a lower score for paying in cash.
- A lower score can occur if a person does not borrow much or uses lenders that don't report to credit bureaus.
- Because the ratio of the amount of debt relative to a credit card limit, a consumer who uses one of her four credit cards to maximize frequent flier miles gets a lower score than another consumer who charges the same amount but does it over all four cards.

These oddities put people with different credit risks into the same credit score categories, making credit scoring questionable even for some credit purposes. Relying on this information to make decisions about granting or rating insurance coverage compounds the unfairness.

Statement from the "Causality" Section of the Statement of Principles

Scientists seek to infer some cause and effect relationship in natural phenomena, in order to attempt to understand and to predict. It is philosophically satisfying to some when data exhibit such a cause and effect relationship.

Risk classification systems provide a framework of information which can be used to understand and predict future insurance costs. If a cause and effect relationship can be established, this tends to boost confidence that such information is useful in predicting the future and will produce some stability of results. Thus classification characteristics may be more acceptable to the public if there is a demonstrable cause and effect relationship between the risk characteristics and expected costs.

However, in insurance it is often impossible to prove statistically any postulated cause and effect relationship. Causality cannot, therefore, be made a requirement for risk classification systems.

Often causality is not used in its rigorous sense of cause and effect but in a general sense, implying the existence of a plausible relationship between the characteristics of a class and the hazard insured against. Living in a river valley would not seem to cause a flood insurance claim, but it does bear a reasonable

relationship to the hazard insured against and thus would be a reasonable basis for classification.

Risk classification characteristics should be neither obscure nor irrelevant to the insurance provided; but they need not always exhibit a cause and effect relationship.

CFA Comment

This may be the most important reason why the use of credit scoring is actuarially unsound. I call the insurer argument the “Causation Myth” – that asking for a “plausible relationship between the class and the hazard insured against” is not required because asking for such a relationship is akin to asking for a cause and effect test.

Obviously, the Actuarial Standards discriminate between a plausible relationship and cause and effect. The Standards thus require that there be a plausible relationship and that the relationship be “neither obscure nor irrelevant to the insurance provided.”

The problem is that insurers cannot tell us what it is about a credit score that is linked with risk. I have asked the proponents of the use of credit scoring to explain to the world why a person who suffered a decline in credit as a result of being in Hurricane Katrina or lost her job because of outsourcing or lost his job in the current economic downturn is suddenly a worse auto or home insurance risk? They do not have a credible response or they guess that maybe it is in the human genome. Often they say the person with a poor credit score might be sloppy and that this carries over into driving or housekeeping. But they only guess, they have no real logical, plausible basis for use of credit score in insurance. What they have is merely a correlation to lean on, not a logical thesis underpinning the correlation. This is data mining at its worst, which means that the use of credit scoring in insurance is actuarially unsound.

Unlike insurance classifications that were in use before credit scoring was adopted, this classifier is not based on an appropriate thesis, confirmed by a statistical analysis. In fact, there is no legitimate thesis for the use of credit scoring. There is only an alleged correlation based on proprietary information not open to public scrutiny.⁴ However, a correlation in search of an appropriate thesis raises serious questions about the classification that is being used.

⁴ This is another difference from all previous classes where the data are public and part of rate filings made with insurance departments. Previously, an insurer would propound a thesis and test it with the data. If a thesis was confirmed, the insurer would file for a new class with the commissioner showing the thesis and the data in the rate filing. An example was the use of accidents and tickets. The thesis was that people with more accidents and tickets would be worse drivers in the future because their historic driving record indicated less care in driving. The thesis was confirmed by data that can be viewed in its' entirety in rate filings.

The lack of a thesis means that credit scoring violates actuarial principles. Some actuaries say that a thesis is not required because actuarial principles state that a cause and effect relationship is not required. Although this is true, the principles, which were developed by a group of excellent but mostly industry-employed actuaries and therefore holding an overwhelmingly industry-oriented point of view, also say that a thesis -- a logical underpinning for the use of the information -- is required.

Let me repeat the key part of the “Causation” Section of the Principles:

Often causality is not used in its rigorous sense of cause and effect but in a general sense, implying the existence of a plausible relationship between the characteristics of a class and the hazard insured against... Risk classification characteristics should be neither obscure nor irrelevant to the insurance provided; but they need not always exhibit a cause and effect relationship.⁵

Credit scoring is at best obscure relative to auto and home insurance, and probably is downright irrelevant. Since there is no clear relationship, no thesis, underlying credit scoring, the classification violates actuarial principles.⁶

Statement from the “Controllability” Section of the Statement of Principles

Controllability refers to the ability of a risk to control its own characteristics as used in the risk classification system. While controllability is in many cases a desirable quality for a characteristic in a risk classification system to have, because of its close association with an effort to reduce hazards and the resulting general acceptability by the public, it can easily be associated with undesirable qualities, such as manipulation, impracticality and irrelevance to predictability of future costs.

CFA Comment

We have already pointed out the easy manipulation possible in the use of credit scores in insurance and the irrelevance of the class. So, it is clear that the downside of controllability exists in credit scoring.

The upside, the incentive of a class to reduce hazard is wholly missing in the use of credit scores. Indeed, as noted above, its use undermines safety incentives by making driving record, miles driven, alarm systems, deadbolts and other safety-related classes less important in the development of the final price.

⁵ Risk Classification Statement of Principles, American Academy of Actuaries Committee on Risk Classification, at <http://actuarialstandardsboard.org/pdf/appendices/risk.pdf>.

⁶ There are other actuarial principles that credit scoring violates as well, including the fact that it is not socially acceptable, is subject to manipulation (there are firms that offer, for a fee, to sharply improve your score) and is ambiguous.

**STATEMENT
OF
AMERICAN INSURANCE ASSOCIATION
ON
CREDIT-BASED INSURANCE SCORING
NAIC HEARING**

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