



# AMERICAN ACADEMY *of* ACTUARIES

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## NAIC PUBLIC HEARING ON CREDIT-BASED INSURANCE SCORES

APRIL 30, 2009

My name is Jeff Kucera. I am here today representing the Casualty Practice Council of the American Academy of Actuaries.<sup>1</sup> I am employed as a senior consultant with EMB America LLC, an actuarial consulting firm. I am a fellow of the Casualty Actuarial Society and a member of the American Academy of Actuaries. I will be addressing actuarial practice applicable to risk classification and specifically, the use of credit-based insurance scores for rating and underwriting purposes. I am also here to offer the assistance of the Casualty Practice Council in your continued exploration of credit-based insurance scores.

In particular, my comments will demonstrate that the use of credit-based insurance scores allows the insurer to better segment insurance risks for the purpose of charging appropriate rates. I will address the following items:

- Current economic circumstances;
- Definition of what constitutes a credit-based insurance score;
- Evaluation of how insurers use credit-based insurance scores; and
- Discussion of how current economic conditions have affected policyholder premiums related to credit-based insurance scores.

Most companies now use credit-based insurance scores in the rating of personal lines such as private-passenger automobile or homeowners' insurance. The use of credit-based insurance scores helps insurance companies charge those risks that are likely to generate greater costs higher premiums, while those likely to generate lower costs get lower premiums. The removal of such insurance scores will not lower overall insurance premium; rather, it will redistribute the premium charges so that those risks with lower expected costs will pay more than is actuarially fair, while those with greater expected costs will pay less than is actuarially fair.

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<sup>1</sup> The American Academy of Actuaries is a 16,000-member professional association whose mission is to serve the public on behalf of the U.S. actuarial profession. The Academy assists public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

## **Current Economic Circumstances**

As we are all aware, the United States is suffering from a major economic crisis, which has imposed considerable hardship on both individuals and businesses. A significant aspect of the current economic crisis is the severe tightening of the credit markets. This may suggest that credit standards are being tightened by banks and other sources of commercial credit. This comes at a time when increasing numbers of Americans are experiencing loss of income, including decreases in the value of many of their assets and unemployment. These problems are significant and ongoing, and they raise questions regarding the use of credit rating in insurance. These issues span multiple lines of insurance, but for individuals, they have the greatest impact on private-passenger auto and homeowners' insurance.

The American Academy of Actuaries is the public policy organization for actuaries practicing in all specialties within the United States. A major purpose of the Academy is to act as the voice of the profession on public policy issues. The Academy regularly prepares testimony for Congress, provides information to federal elected officials, comments on proposed federal regulations, and works closely with state officials on issues related to insurance.

The purpose of my presentation on behalf of the Casualty Practice Council today is to assist the NAIC in its analysis of these questions and to offer to work with the NAIC in its continuing study of these issues. The Casualty Practice Council has a history of working with the NAIC on this and many other topics. In fact, the Risk Classification Subcommittee of the Academy's Products, Pricing, and Market Committee presented the NAIC with a report, "The Use of Credit History for Personal Lines of Insurance,"<sup>2</sup> in November 2002, which is still relevant today.

The NAIC has identified three issues to serve as a basis for discussion. Our comments will provide an actuarial context for each of these issues.

## **Definition of What Constitutes a Credit-Based Insurance Score**

An insurance score is a numerical score or ranking assigned to an insurance risk (i.e., a prospective insured) based on that risk's underlying characteristics. A common purpose of insurance scoring is to generate useful information in underwriting and pricing insurance for the individual risk being scored. The score provides a relative measure of the expected cost to the insurance company associated with the risk.

A credit-based insurance score utilizes various attributes found in a typical individual's credit report. There are several different scoring models currently in use to calculate credit-based insurance scores, including models developed by third-party vendors and proprietary models built by individual insurance companies. The type of credit attributes generally having the

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<sup>2</sup> [http://www.actuary.org/pdf/casualty/credit\\_dec02.pdf](http://www.actuary.org/pdf/casualty/credit_dec02.pdf) (last visited on Apr. 24, 2009).

greatest effect on an individual's insurance score include: number of inquiries into opening new accounts, accounts 30 days or more past due. While the attributes and relative values are not identical for all companies, generally the higher the credit-based insurance score, the better an individual's credit rating.

The importance of credit-based insurance scores is that there is a strong correlation between them and the expected costs associated with the risk. In other words, in a group of insureds who are identical in every other way, insureds with favorable insurance scores are significantly more likely to have better loss experience than insureds with unfavorable insurance scores.

Consequently, credit-based insurance scores are a statistically reliable tool for segmenting risks into different groups with different expected cost levels. This has been demonstrated in a number of studies and reports, some of which we have listed in Appendix A.

### **Evaluation of How Insurers Use Credit-Based Insurance Scores**

Most state insurance laws prohibit the use of insurance rates that are excessive, inadequate, or unfairly discriminatory. Principle 4 of the Casualty Actuarial Society's *Statement of Principles Regarding Property and Casualty Insurance Ratemaking* states that, "A rate is reasonable and not excessive, inadequate, or unfairly discriminatory if it is an actuarially sound estimate of the expected value of all future costs associated with an individual risk transfer."<sup>3</sup> Thus, the overall average rate level should be set so that the total premium collected from all risks is sufficient to cover the total expected costs. Additionally, the individuals' rates should be set such that the premium collected from each individual risk, or group of similar risks, reflects the expected costs for that individual risk (or group of similar risks).

In a 2001 survey, 90 percent of the responding insurers (from the top 100 personal lines companies) indicated that they were using credit data.<sup>4</sup> According to the survey, the use of credit data is a relatively recent trend; more than half of the responding insurers using credit said that they began using credit in 1998 or later. Today, the number of companies using credit is likely even greater. Some insurers use insurance scores simply to determine whether a prospective insured qualifies to be written by the company. More typically, insurers also use insurance scores to help segment risks into different groups with similar expected costs for the purpose of rating. In such cases, the insurer may use the insurance score directly as a rating factor, also called a "risk classification factor," similar to an amount of insurance for homeowners' insurance or prior violations for private-passenger auto insurance. Alternatively, an insurer with multiple "tiers" representing different levels of expected cost may use the insurance score to help assign risks to the appropriate tier. Whether insurance scores are being used as a risk classification or

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<sup>3</sup> <http://www.casact.org/standards/princip/sppcrate.pdf> (last visited on Apr. 22, 2009), *Statement of Principles Regarding Property and Casualty Insurance Ratemaking*, Casualty Actuarial Society, May 1988.

<sup>4</sup> "Insurance Scoring in Personal Automobile Insurance—Breaking the Silence," Conning & Company, 2001.

tiering factor, the impact is the same: insurance scores are being used to segment risks into homogenous groups so that appropriate premiums can be charged.

With respect to insurance scores as a risk classification or tiering factor, the actuary is guided by Actuarial Standard of Practice (ASOP) No. 12, *Risk Classification*.<sup>5</sup> Rating plans for individual lines of insurance generally include several different risk classifications. For example, private-passenger auto lines use such risk classifications as the make and model of the car, age of the driver, prior traffic violations and accidents, etc. For homeowners' insurance, examples of risk classification include amount of insurance, type of home construction, prior loss history, etc. The key section of ASOP No. 12 that is applicable to the use of insurance scores is section 3.2.1., which reads in part as follows:

Relationship of Risk Characteristics and Expected Outcomes—The actuary should select risk characteristics that are related to expected outcomes. A relationship between a risk characteristic and an expected outcome, such as cost, is demonstrated if it can be shown that the variation in actual or reasonably anticipated experience correlates to the risk characteristic. In demonstrating a relationship, the actuary may use relevant information from any reliable source, including statistical or other mathematical analysis of available data. The actuary may also use clinical experience and expert opinion.

Rates within a risk classification system would be considered equitable if differences in rates reflect material differences in expected cost for risk characteristics. In the context of rates, the word *fair* is often used in place of the word *equitable*.

The actuary should consider the interdependence of risk characteristics. To the extent the actuary expects the interdependence to have a material impact on the operation of the risk classification system, the actuary should make appropriate adjustments.

The summary of articles on credit in Appendix A includes several studies that have shown that credit scores reflect significant differences in expected loss costs. Thus, credit scores are appropriate tools for risk differentiation. Rates based on groups differentiated by insurance score are not excessive, inadequate, or unfairly discriminatory.

The removal of such insurance scores will not lower overall premium collected; it will only redistribute the premium collected such that risks with lower expected costs will pay more, and those with greater expected costs will pay less.

While the evidence may only be anecdotal, most companies report that the use of insurance scores, along with multivariate rating and other new rating factors, have allowed them to write more risks from the general population than before these features were introduced.

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<sup>5</sup> [http://www.actuarialstandardsboard.org/pdf/asops/asop012\\_101.pdf](http://www.actuarialstandardsboard.org/pdf/asops/asop012_101.pdf) (last visited on Apr. 22, 2009), Actuarial Standard of Practice No. 12, *Risk Classification (for All Practice Areas)*, adopted by the Actuarial Standards Board, Dec. 2005.

If the NAIC determines that further studies may be appropriate, the Casualty Practice Council would be pleased to assist the NAIC in such studies.

### **Discussion of How Current Economic Conditions Have Affected Policyholder Premiums Related to Credit-Based Insurance Scores**

While our current economic condition is certainly on everyone's mind, it is still uncertain exactly how this will affect overall insurance costs and, therefore, overall insurance prices. Some regulators or other public officials may be concerned that if the current economic crisis causes insurance scores to worsen, it will lead to unwarranted premium increases. It is important to consider both the impact on the aggregate premium and on individuals' premium.

First, it is important to consider the impact on the aggregate premium. Insurers use insurance scores to determine appropriate rate relationships between risk classes, not to determine overall premium need. Assume for a moment that insurers continue to maintain the same rate relationships for different insurance score ranges, and that the current economic crisis causes every insureds' insurance score to worsen. The actuary would observe this distributional shift or change and adjust overall rate levels so that the total premium collected by the insurance company remains the same and the integrity of the rate relationships among risks remains intact.

This is no different than any other distributional shift, such as an increase in the average value of homes, which an actuary has to consider when setting the overall rate level. Part of a typical actuarial rate review is an analysis of any shifts in distributions that affect the premium level. The actuary would adjust for these shifts in determining appropriate future rates. As a result of this standard ratemaking practice, any shift in insurance scores due to the current adverse economic conditions will not result in any long-term impact on overall premium collected.

Second, it is important to consider the impact on the individuals' premium.<sup>6</sup> As stated earlier, studies have demonstrated that insurance scores are an effective means of segmenting risks. Because of this, many companies now vary the rates charged to risks with different insurance scores. Some regulators or other public officials may be concerned that a dramatic shift in credit scores could disrupt the current relative rates among risks with insurance scores; in other words, perhaps the difference in expected cost levels among insureds with favorable and unfavorable scores will be less significant.

This, too, is not a problem that is unique to insurance scores. The gender and age of drivers have long been recognized as important rating characteristics for personal automobile insurance. There have been, and still are, very significant differences between the rates charged to young

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<sup>6</sup> It is important to remember that any distribution shift is likely to have a smaller effect on renewal business than on new business, because some states and/or companies only permit the use of such scores for renewals if it results in a more favorable rate for the individual insured.

males and young females, reflecting the higher cost of auto insurance for young male drivers compared to young female drivers. However, over time, the driving habits of young males and young females have become more similar, and while the difference in risk is still significant, it is not nearly as large as it was in the past. As this trend has developed, insurers adjusted classification plans to reduce the rate differentials to reflect it. If the actuary regularly analyzes the indicated rate differentials for different insurance score ranges, the rate differentials will be changed if more recent data suggests it. This potential shift in group differentials, and motivation or intent to be competitive, provide incentives for companies to regularly review their rate differences.

One of the other roles of an actuary is to regularly review the data to decide whether the overall average rate level is appropriate and whether the rate differentials for risks with different insurance scores need to be adjusted. By doing this, the actuary can ensure that the rates are actuarially sound,<sup>7</sup> regardless of the effect the current economic crisis has on personal insurance scores.

It is possible that a sudden or immediate distribution shift could result from the current economic conditions, and that, by the time it works its way into the actuary's data, many insureds will have already been harmed. While we have been suffering through the current economic conditions for approximately six months, we are unaware of any quantifiable evidence that has surfaced to demonstrate that such a dramatic shift has been occurring. It is our opinion, based on anecdotal evidence, that any shift thus far has been minor. This could be because renewal business, which makes up the majority of any company's business, is less likely to be affected by a shift. Ascertaining whether an actual shift of any significance has occurred would require a study to look at the distribution of insurance scores of several companies over a period of time. The Casualty Practice Council is willing to assist the NAIC should it decide to pursue such a study.

On behalf of the Academy and the Casualty Practice Council, I thank you for the opportunity to speak to you today. To the extent that we can further assist the NAIC in its endeavors on this topic, the Casualty Practice Council volunteers its services. We look forward to working with you.

If time permits, I am happy to answer any questions you may have.

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<sup>7</sup> <http://www.casact.org/standards/princip/sppcrate.pdf> (last visited on Apr. 22, 2009), *Statement of Principles Regarding Property and Casualty Insurance Ratemaking*, Casualty Actuarial Society, May 1988.

## Appendix A – Summary of Additional Articles on Credit Scoring

Several studies have already been conducted on the use of credit for rating and underwriting for both homeowners' and private-passenger auto insurance. In particular, the following studies may warrant review:

- *Predictiveness of Credit History for Insurance Loss Ratio Relativities* by Isaac Fair, (1999).
- *Use of Credit Reports in Underwriting* by the Commonwealth of Virginia, State Corporation Committee, Bureau of Insurance (1999).
- *The Impact of Personal Insurance Credit History on Loss Performance in Personal Lines* by James D. Monaghan (2000).
- *Insurance Scoring in Personal Automobile Insurance – Breaking the Silence* by Conning & Company (2001).
- *Use of Credit Information by Insurers in Texas* by the Texas Department of Insurance (December 2004).
- *Use of Credit Information by Insurers in Texas – the Multivariate Analysis* by the Texas Department of Insurance (January 2005).
- *Credit-Based Insurance Scores: Impact on Consumers of Automobile Insurance* by the Federal Trade Commission (July 2007).
- *Report to the Congress on Credit Scoring* by the Board of Governors of the Federal Reserve System (2007).