



2011 Ratemaking and Product Management Seminar

The Use of Credit Based Insurance Scores

Jeff Kucera, FCAS, MAAA

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Agenda

- What is a Credit-Based Insurance Score?
- Important Facts Regarding Credit-Based Insurance Scores
- Early Errors Made by the Industry
- Arguments Made Against Credit-Based Insurance Scores
- Summary

What is a Credit-Based Insurance Score?

- A numerical score or ranking assigned to an insurance risk based on underlying characteristics of the risk.
 - Provides a relative measure of the associated expected cost
 - Strong correlation between insurance scores and expected losses
 - Many studies have concluded statistically reliable for segmenting risks

Important Facts Regarding Credit-Based Insurance Scores

1. Removal, or inclusion, of credit based insurance scores does not change the overall cost of insurance.
2. Many insurers have testified that inclusion of credit-based insurance scores have allowed them to insure risks that otherwise may have been uninsurable by that company.
3. It has been shown that for several companies the removal of credit-based insurance scores would result in more insureds receiving a rate increase than a rate decrease.

Early Errors Made by the Insurance Industry

- Lack of explanation
 - Often hidden in underwriting or tiering rules.
 - Not enough time spent with regulators on cause and effect, benefits, etc.
 - Just as important – not enough time spent with agency force
 - Often regulators left to explain to legislatures on appropriateness
 - Regulators weren't properly trained/prepared to do companies' work
 - Wanted to keep algorithms proprietary
 - Considerable time and intellectual capital had been invested by the company

Early Errors Made by the Insurance Industry

- Difference in rates were too great
 - Companies have adjusted by adding additional tiers or rating factors
- No clemency for extraordinary events such as medical bankruptcies
 - Many companies now voluntarily (or with state assistance) exclude such items from their algorithms
 - NCOIL Model Law requires such items be excluded

Arguments Made Against Credit-Based Insurance Scores

Allows companies to recognize increased/excess profits at expense of insureds.

Fallacy of the argument

- It is true that early adopters benefited from additional growth opportunities
- Overall rate level should be the same whether a company uses credit-based insurance scores in their algorithm or not – credit-based insurance scores are used to segment risks, not set an overall rate.
- Overall rate levels still need to be filed and/or approved in most jurisdictions.
- Concerns over economic crisis have never proven to be warranted.

Arguments Made Against Credit-Based Insurance Scores

The relationship between credit-based insurance scores and insurance losses should be causal.

Fallacy of the argument

- Causality is not a requirement of the Actuarial Standard of Practice No. 12, *Risk Classification*.
- The Academy's Committee on Risk Classification, in its 1980 *Risk Classification Statement of Principals*, stated

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

Arguments Made Against Credit-Based Insurance Scores

The relationship between credit-based insurance scores and insurance losses should be causal.

Fallacy of the argument

- What is required is correlation
- There is a high correlation between credit-based insurance scores and insurance losses.
- It can be argued that many factors used today are not casual
 - Good Student Discount

Arguments Made Against Credit-Based Insurance Scores

The key section of ASOP 12 (Risk Classification) that is applicable to use of insurance scores is section 3.2.1., which reads in parts 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 or expert opinion.

Rates with 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.

Arguments Made Against Credit-Based Insurance Scores

It is a proxy for rating by zip code or redlining.

Fallacy of the argument

- Why would companies use this as a proxy when they are generally allowed to use zip code for definition of territories?
- Likely that credit does affect different zip codes differently – but what rating characteristic doesn't?
- Importance of using multivariate analysis, so as not to double count any variables.

Arguments Made Against Credit-Based Insurance Scores

Insureds don't have ready access to companies' credit based insurance scores.

Fallacy of the argument

- Insurers invest a lot of time and money in trying to improve their processes – it is right that they should have to make everything public knowledge?
- Insurers do file their credit algorithms in many states – and in some of these states the algorithm is open to the public.

Arguments Made Against Credit-Based Insurance Scores

It has disparate impact.

Fallacy of the argument

- Complaints of disparate impact may be confused with disproportionate impact.
- Likely that credit-based insurance scores affect different segments of our population differently, but that is probably no different than most rating characteristics.
- A proper study of disparate impact, should at a minimum:
 1. Appropriate define a reasonable measurement for disparate impact before the study; and
 2. Look at variables other than just credit-based insurance scores.

Arguments Made Against Credit-Based Insurance Scores

It doesn't provide homogeneity among risks.

Fallacy of the argument

- Simply defined as similarity among risks.
- Opponents argue that the way people use credit, i.e. one uses credit to purchase the latest X-Box game and another to restore their historic home are not homogenous.
- Proponents argue the use of credit (or misuse of credit), regardless of the reason creates a homogeneous group just like saying students with good grades creates a homogeneous group.

Arguments Made Against Credit-Based Insurance Scores

It is easy to manipulate.

Fallacy of the argument

- It is true that credit is not as powerful as it was when it was first used, i.e. the indicated spread is generally not as great.
- Is this any different than students who decide (with a little parental influence) to study harder and qualify for the Good Student Discount.
- If people actually improve their credit rating or scoring, is this really a bad thing?

Arguments Made Against Credit-Based Insurance Scores

It doesn't encourage the reduction of hazard.

Fallacy of the argument

- While a desirable outcome, not a strict requirement.
- Many rating variables do not encourage the reduction of hazard – e.g. gender, marital status, amount of insurance, territory, etc.
- It is more than financial stress that causes people with poor credit-based insurance scores to have higher insurance losses.

Summaries on the Articles on Credit

- *Predictiveness of Credit History for Insurance Loss Ratio Relativities* by Fair, Isaac (1999).
- *Use of Credit Report 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)

Summaries on the Articles on Credit

- *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).

Summary

- Critics of credit-based insurance scores have held it to standards that most all rating classification factors would fail to meet.
- We must remember that there are exceptions to every rating classification, i.e. exceptions who do not perform like the group as a whole – that is why we rely on the law of large numbers.
- The use of credit-based insurance scores meets all actuarial standards and practices.

Summary

- The insurance industry has made mistakes – but in general these have been addressed and the situations rectified.
- All plans can be improved upon – and as actuaries we must constantly be aware of potential improvements.
- Further, the use of credit-based insurance scores allows companies to charge higher premiums to those risks that are likely to generate greater costs, while charging lower premiums to those likely to generate lower costs.

Summary

- Removal, or inclusion, of credit-based insurance scores will not change the overall cost of insurance.
- Companies have testified that the use of credit-based insurance scores have allowed them to insure risks that would have otherwise been uninsurable by that company.
- For most companies, if not all, the removal of credit-based, insurance scores would result in more risks receiving a rate increase than a rate decrease.

Contact Details

- Jeff Kucera, FCAS, CAS
 - Senior Consultant
 - 525 W. Van Buren St.; Suite 302; Chicago, IL. 60607
 - (312) 261-9613
 - jeff.kucera@towerwatson.com